MOJAVE TRAILS NATIONAL MONUMENT MANAGEMENT PLAN COMMUNITY ALTERNATIVE
# Table of Contents

1 Table of Contents.................................................................................................................. iii

2 Acknowledgements................................................................................................................ v

3 Executive Summary............................................................................................................... 1

4 Introduction........................................................................................................................... 3

5 Threats....................................................................................................................................... 5

6 Management Authority and Rationale...................................................................................... 6

7 Monument Management Authority/Guided by Monument Proclamation.............................. 8

8 Crosswalk with Existing Special Land Use Designations and Specially Designated Conservation Areas................................................................................................................................. 11

- 8.1 Management of Lands with Wilderness Characteristics............................................ 13

- 8.2 California Desert National Conservation Lands.............................................................. 14

- 8.3 Areas of Critical Environmental Concern..................................................................... 15

- 8.3.2 Amboy Crater Lava Field Zone RMZ........................................................................ 22

- 8.3.3 Trilobite and Ship Mountains Rock Collecting Area RMZ......................................... 22

- 8.3.4 Bonanza Springs Day Use Area and Campground RMZ........................................... 22

- 8.3.5 Mojave Trail and Boulders Primitive Camp RMZ (PDF pg 214)............................... 22

9 Potential Avenues for Tribal Engagement.............................................................................. 23

- 9.1 General Recommendations............................................................................................. 25

- 9.2 Nation-to-Nation Consultations - “Section 106”............................................................. 25

- 9.3 Tribal Commission......................................................................................................... 26

- 9.4 Partnerships and Agreements......................................................................................... 27

10 Community Engagement, Outreach, and Accessibility....................................................... 29

- 10.1 General Recommendations............................................................................................ 30

- 10.2 BLM Staffing................................................................................................................. 31

- 10.3 Mojave Trails DAC Subgroup............................................................................................ 32

- 10.4 Diversity, inclusion, multi-lingual/all-access multiculturalism........................................ 33

- 10.5 Use, access, interpretive signage.................................................................................. 35

- 10.6 Interpretation and Visitor Experience.......................................................................... 36

- 10.7 Improve Transient Visitor Experience through Interpretive Signage and Media........... 36

- 10.8 Visitor Center Siting Criteria......................................................................................... 36

- 10.9 Formal Process for Stakeholder Engagement.............................................................. 37

- 10.10 Partnering and supporting organizations.................................................................. 37

11 Proposed Management Zones............................................................................................. 38
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1 Monument Object Management Recommendations</td>
<td>41</td>
</tr>
<tr>
<td>11.1.1 Physical Environment</td>
<td>41</td>
</tr>
<tr>
<td>11.1.2 Archaeological, Historical, and Cultural Resources</td>
<td>51</td>
</tr>
<tr>
<td>11.1.3 Biological Environment</td>
<td>60</td>
</tr>
<tr>
<td>11.2 General Resource Management Recommendations</td>
<td>71</td>
</tr>
<tr>
<td>11.2.1 Military Installations</td>
<td>71</td>
</tr>
<tr>
<td>11.2.2 Joseph Grinnell Resurvey Study</td>
<td>73</td>
</tr>
<tr>
<td>11.2.3 Visual Resource Management</td>
<td>74</td>
</tr>
<tr>
<td>11.2.4 Soundscapes</td>
<td>75</td>
</tr>
<tr>
<td>11.2.5 Night Skies Management</td>
<td>76</td>
</tr>
<tr>
<td>11.2.6 Quiet Recreation</td>
<td>77</td>
</tr>
<tr>
<td>11.2.7 Other Recreation</td>
<td>83</td>
</tr>
<tr>
<td>11.2.8 Drones</td>
<td>83</td>
</tr>
<tr>
<td>11.2.9 Overflights</td>
<td>84</td>
</tr>
<tr>
<td>11.2.10 Shooting</td>
<td>84</td>
</tr>
<tr>
<td>11.2.11 Fire Management</td>
<td>85</td>
</tr>
<tr>
<td>11.2.12 Minimum Route Network and Key Decision Areas</td>
<td>90</td>
</tr>
<tr>
<td>11.2.13 Livestock Grazing Allotments</td>
<td>100</td>
</tr>
<tr>
<td>11.2.14 Rights-of-Way, Utility Corridors and Communication Sites</td>
<td>101</td>
</tr>
<tr>
<td>References</td>
<td>101</td>
</tr>
<tr>
<td>Appendices</td>
<td>108</td>
</tr>
<tr>
<td>13.1 APPENDIX A—Mojave Trails National Monument Presidential Proclamation 9395, February 12, 2016</td>
<td>108</td>
</tr>
<tr>
<td>13.2 APPENDIX B—Mojave Trails Object Chart</td>
<td>115</td>
</tr>
<tr>
<td>13.3 APPENDIX C—Map Data Sources</td>
<td>120</td>
</tr>
<tr>
<td>13.4 APPENDIX D—Archaeological Resources</td>
<td>121</td>
</tr>
<tr>
<td>13.5 APPENDIX E—Areas of Critical Environmental Concern</td>
<td>130</td>
</tr>
<tr>
<td>13.6 APPENDIX F—Management Zones</td>
<td>132</td>
</tr>
<tr>
<td>13.7 APPENDIX G—Existing SRMA and ERMA Plans</td>
<td>136</td>
</tr>
</tbody>
</table>
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Executive Summary

Mojave Trails National Monument (Monument) stretches from the Cady Mountains to the city of Needles, California. Contained within this vast landscape are stunning viewsheds, rich archaeological and historical sites, unparalleled recreational opportunities, and iconic desert plants and animals. The new Monument is the connective tissue that links Mojave National Preserve with Joshua Tree National Park, connecting and protecting wildlife corridors and habitat for species such as the desert tortoise, bighorn sheep, and mountain lion. The Monument also holds the ancestral homelands of several Tribes who continue to value and use these landscapes today.

Mojave Trails National Monument was designated by President Barack Obama through a Presidential Proclamation on February 12, 2016, preserving approximately 1.6 million acres in the Southern California Mojave Desert. Together with surrounding protected public lands, the newly protected lands helped to create the world’s second largest desert preserve.

The Proclamation withdrew lands within the Monument from sale or lease for mining purposes and specified that the purpose of the newly established Monument was to preserve objects of scientific and historic interest (Monument Objects). The Proclamation directed the Secretary of Interior and the Bureau of Land Management to prepare and maintain a monument management plan, using the Monument Objects identified in the Proclamation to guide the development of the plan. It also directed the Bureau of Land Management to incorporate maximum public involvement—including consultation with Tribal, state, and local governments—when developing the plan. The plan was to be developed and implemented by February 12, 2019—three years from the date of the Proclamation.

Our approach in developing the Mojave Trails National Monument Community Alternative was to review existing land use designations and recommend how these existing designations could be used to form the basis of a zoning approach for land use in the Monument. This was necessary to ensure that existing designations, which were created to protect particular natural resource values or recreational activities, were reviewed and modified as necessary to put care and management of the Monument Objects as the first priority for the Bureau of Land Management. In order to identify management zones for the Monument, we completed an analysis of the Monument Objects and overlaid this data with known areas of recreation and interest. This method allowed us to delineate the following zones:

- Areas more appropriate for high visitor use (Frontcountry zone),
- Areas for reaching areas of high visitor use (Passage zone),
- Areas more targeted to motorized backcountry use (Backcountry zone),
- Areas more for moderate non-motorized use (Primitive zone),
- Areas more appropriate for a wilderness experience (Wilderness zone).

Furthermore, we created recommendations and strategies specific to each Monument Object to establish what would be involved with their proper care and management, as well as general resource recommendations to manage these objects in context of the other land uses, designations, and natural features present in the Monument.

We recognize that Mojave Trails National Monument has the incredible potential to enhance the lives of desert residents, Native Americans, and visitors from around the globe by providing outstanding
recreational and cultural opportunities for healthy lifestyles, building local businesses and the regional tourism economy, protecting cultural and natural resources, and facilitating ecosystem services. However, this document is not intended for regulatory compliance or to analyze potential impacts, but rather to serve as a blueprint for management recommendations and strategies.

Our goal in submitting a Mojave Trails National Monument Community Alternative is to ensure that the Monument planning process protects Monument Objects and resources for future generations, but also to give voice to local constituencies, cities, underserved communities, and Native American Tribes. We also wish to ensure that Native American communities whose ancestral lands encompass the Monument are given a role in planning and management that reflects their ties to the lands and rights as sovereign nations. We formally request that the Bureau of Land Management analyze the impacts of the Community Alternative during the National Environmental Policy Act process in developing the Monument’s resource management plan and to adopt this Community Alternative as the core of any future resource management plan for Mojave Trails National Monument.
After the passage of the California Desert Protection Act (CDPA) of 1994, two of the most important conservation issues remaining in the region were the fate of the Fort Irwin Wilderness Study Areas (WSAs) and the disposition of the vast swaths of checkerboard private lands in the desert that had been transferred by Congress to railroad interests in the nineteenth century.

The CDPA of 1994 deferred protecting several important WSAs in the California desert as wilderness until such time as the expansion of the Fort Irwin National Training Center could be approved. (It was possible that the base could be expanded into one or more of the WSAs.) The U.S. Army completed the expansion in 2001, and this enabled Senator Barbara Boxer to propose the Cady Mountains (now in the Mojave Trails National Monument) as wilderness in 2002, along with many important wild areas in the desert and elsewhere in California. She reintroduced this measure, known as the California Wild Heritage Act, in 2004, 2006, and 2008.

Senator Dianne Feinstein agreed to take a fresh look at desert conservation needs in 2007. Between April and August of 2007, Senator Feinstein’s staff toured 17 proposed wilderness areas and traveled over 3,600 miles in nine days. Significant progress was made in identifying and resolving potential
conflicts that might arise from wilderness designation, and negotiations to resolve the problems were initiated to deal with California desert WSAs.

The centerpiece of what became the CDPA of 2010 was the Mojave Trails National Monument. Much of this area was considered for a protective designation of some kind in the CDPA of 1994 but was excluded because over 600,000 acres of private land inholdings held by the Catellus Development Corporation would make effective protection of the area nearly impossible. (Over the decades, the former railroad lands bequeathed by Congress in the nineteenth century had been acquired by Catellus.) Between 1999 and 2006, $18 million from the Land and Water Conservation Fund, matched with a private donation by The Wildlands Conservancy of $45 million, were used to acquire these private lands in the heart of the Mojave Desert. These acquired lands were promised permanent protection by President Bill Clinton, Vice President Al Gore, and Interior Secretary Bruce Babbitt. This need for protection would grow in importance as the Mojave Desert became the focus of an unprecedented drive to develop solar and wind energy facilities on public lands.

Unfortunately, the newly acquired lands and the adjacent previously existing Bureau of Land Management (BLM) lands in the region were not protected by either Congress or the White House. In 2005, under the Bush administration’s Energy Policy Act, the pristine heart of the Mojave Desert was opened to dozens of solar and wind energy development applications that would have severed the undeveloped area between Barstow and Blythe. Senator Feinstein defended the environmental, scenic, cultural, and recreational values of this magnificent landscape by aggressively promoting the proposed monument. In time, as a result of this vigorous advocacy, BLM plans such as the solar programmatic environmental impact statement and the Desert Renewable Energy Conservation Plan (DRECP) did not propose to open the monument to energy development. This removed the conflict between preservation and energy development and, for a variety of reasons, many development applications in the Monument have simply dwindled away.

Ultimately, Senator Feinstein’s CDPA of 2010 proposed to designate two national monuments, including Mojave Trails National Monument, several wilderness areas and national park additions, and wild and scenic rivers. Additionally, the CDPA included many provisions of importance to Native Americans, utility companies, off-highway vehicle (OHV) enthusiasts, and other stakeholders. The bill was reintroduced in 2011 and 2015. In 2015, its name was changed to the California Desert Conservation and Recreation Act.

While the level of local support generated in the affected counties for the California Desert Conservation and Recreation Act was truly unprecedented in the history of California desert conservation—and it very easily surpassed the local support generated for the CDPA of 1994—the bill was stalled in Congress for many years, prompting conservationists to pursue Presidential Proclamations for three new monuments that were designated on February 12, 2016. Additionally, the desert bill’s name was changed to the California Desert Protection and Recreation Act and passed Congress as part of the John Dingell, Jr. Conservation, Recreation and Management Act on March 12, 2019.
5 Threats

Despite existing protective efforts, the lands within the Monument faced long-term challenges to their integrity and health as a functioning landscape. As pressures from population growth, rural development, increasing recreational demand, and land development continue to build, threats to the Monument’s ecosystems will only increase. The potential changes in the regional landscape resulting from climate change represent a significant management concern that will have ecological consequences far outside of the region. A comprehensive, effective response to development pressures, habitat fragmentation, unmanaged recreational use, and climate change is urgently needed.

Development Pressures

One of the biggest threats to the Mojave Desert is habitat conversion, the loss of natural habitat caused by major, long-term changes in land use. Habitat conversion is typically caused by the pressures of human habitation and the need for urban development, including mining, waste disposal, energy development, and infrastructure. Habitat losses are common near large urban developments. Within a day’s drive of the Mojave Desert lie the burgeoning cities of Los Angeles and Las Vegas, home to a combined 40 million people. Demands for infrastructure frequently result in the development of highways, roads, railroads, and utility corridors, all of which cause habitat fragmentation along with the physical impacts of construction.

Habitat Fragmentation

One of the most important aspects of the Monument is ecological connectivity. A recent study shows that habitat fragmentation reduces biodiversity by 13-75% (Haddad, 2015). The study found that fragmented habitat loses an average of half its plant and animal species within 20 years, and the effects can last even longer, with additional damage to the area occurring for decades. The need for ecological connectivity is critical, as the study also found that the worst losses occur in the smallest habitat patches and near habitat edges. A single road creates habitat edges, and along with increasingly smaller areas, has degrading effects on core ecosystem functions (Haddad, 2015). The average road density for non-wilderness BLM lands in the CDCA is 3.09 miles of roads and “ways” per square-mile, a strong indication that habitat fragmentation is a very serious concern in the region (Menke, 2013). Permanent protection is critically important and will contribute to the area’s overall landscape-level importance in maintaining biological corridors and crucial habitat for species of concern.

Unmanaged Recreation

The Mojave Desert is relatively accessible and attractive for OHV use. Vehicular impact and the proliferation of routes cause many dispersed landscape effects. It has been noted that as OHV route density increases, several important effects occur: total plant cover decreases, plant species richness decreases, seedbank density of native forbs decreases, and seedbank richness of native forbs decreases (Brooks, undated).

Increased human presence from other outdoor recreation activities such as target shooting, rock collecting, horseback riding, biking, and hiking also impacts lands in the Monument. These activities, especially when unmanaged, can cause loss of habitat due to disturbance of wildlife, degradation of
vegetation, soil compaction, and vandalism.

**Invasive Species**

Invasive Species are one of the greatest threats to biodiversity and native sustainability in the U.S. Invasive species are spread through human activities and can cause profound harm to local ecosystems by displacing native plant species, outcompeting local wildlife for resources, and affecting fire regimes (Tortoise Tracks, 2015). Invasive plants typically lack natural predators and parasites and thrive in disturbed soil, which occurs wherever there are human activities. As local native plant species are displaced, the available plant food for native wildlife decreases, and resources are limited. In the Mojave Desert, over 100 invasive species have been documented, including brome grass, which grows densely and is highly flammable, drastically increasing the fire danger in the area. If not managed, invasive species can overtake the native landscape in the Monument and threaten the area’s rare plants and wildlife.

**Fire Danger**

Despite the Mojave Desert having few naturally occurring fires, invasive species and human disturbance have had severe effects on desert shrublands, leading to increased risk of fire. Desert landscapes have fewer fires due to low perennial vegetation cover, low primary productivity, and limited fuel load (Linn et al, 2013). However, as invasive species proliferate and outcompete native desert plants, non-native grasses dramatically increase the risk for larger fires. In 2005, over 1 million acres were burned in the Mojave Desert, more than in the previous 25 years combined (Brooks, undated). Though many native plants can survive fires by remaining dormant as seeds, non-native grasses dominate post-fire landscapes. This change to the habitat structure, the invasion of non-native annual grasses, and the increased frequency of fires are changing the face of the Mojave Desert.

6 **Management Authority and Rationale**

Mojave Trails National Monument preserves the core of the Mojave Desert and its major landscape linkages, connecting 15 wilderness areas, Joshua Tree National Park, and Mojave National Preserve. One of North America's most iconic landscapes, the Mojave Desert is recognized for its biological diversity. It is a place where new and important species are being discovered regularly; ecosystem processes are largely intact; and keystone species, such as Joshua trees, desert tortoise, and desert bighorn sheep find refuge from the increasing urbanization of metropolitan Los Angeles and Las Vegas.

The long-term conservation of the Mojave Desert will rely on maintaining connectivity across diverse desert ecosystems. Plant and animal movement across habitat is essential to both individual and species survival. Several landscape connectivity studies have been completed for the region, outlining a wildlife habitat linkage network designed to provide for the movement needs of wildlife at various spatial and temporal scales: day-to-day individual movement, seasonal migration, response to climate change, gene flow, recolonization of new habitat, etc.

Disruption of wildlife movement patterns can alter ecosystem functions and isolate habitats. South Coast Wildlands conducted an analysis to identify areas where maintaining or restoring ecological connectivity is essential to conserving the California desert’s biodiversity. According to the results,
several different species use over a dozen individual wildlife linkages that run north–south or east–west throughout the Monument area (Penrod et al., 2012). The newly established Mojave Trails National Monument will protect wildlife linkages for animals such as desert tortoise and bighorn sheep, which are necessary for the long-term survival of both individuals and species.

Ecological connectivity is essential for climate change adaptation for species that have large habitats, such as the bighorn sheep, as well as those with limited spatial requirements, such as the Mojave fringe-toed lizard. Maintaining connectivity is also important for species’ response to the increasing variability that is likely under most climate change scenarios. Native plant communities also must have intact landscapes so that they can shift ranges up and down in elevation or into new suitable habitat as the climate changes. With so many distinct plant communities within the Monument, protecting ecological linkages will facilitate the reconfiguration of ecosystems as the climate changes.

Mojave, Chemehuevi, Shoshone, Serrano, Kawaiisu, and Southern Paiute peoples have all inhabited the area within the present-day boundaries of the Mojave Trails National Monument, leaving behind traces in petroglyphs, pictographs, ancient trails, and stonework today. Contemporary Native American tribes have retained connections to the Monument through their contemporary activism to protect the Ward Valley in the 1990s (Klasky, 1997) and through continuing their spiritual practices, as in the case of the Salt Song and Bird Song Trails and today’s Salt Song Project. The Native American Land Conservancy, a nonprofit, also owns land in the Old Woman Mountains adjacent to the Monument, which they manage for Native American use in heritage programming and the protection of cultural resources.

While the area of the Mojave Trails National Monument is known to have significant cultural resource values (King and Casebier 1976), very little archaeological study has been done within its boundaries (Kaldenburg, 2015). There is a high likelihood that adequate archaeological research would reveal many archaeological sites within the Monument, including along the shorelines of Pleistocene lakebeds. For example, a proposed project in 2001 sited on 1,200 acres identified 12 previously undocumented archaeological sites, four of which were nominated as eligible for inclusion on the National Register of Historic Places.

Known Native American archaeological, historical, and cultural sites are located in Afton Canyon, the Mesquite and Crucero Hills, the Chemehuevi Desert Wildlife Management Area and Chemehuevi Valley, Ward Valley, Piute Mountains, Klinefelter Spring, Fenner Valley, Ship Mountains, Danby, and Bristol. Yet, as the name for the new Monument suggests, many of its important places are part of trails that connect the Colorado River to the inland mountains. These trails include those named in the Proclamation, like the trade trail connecting the Colorado River to Afton Canyon now known as the Mojave Road, and the Salt Song Trail, but also include lesser-known spiritual trails like the Chemehuevi Mountain Sheep Song and the Trail of the Southern Fox. Many ancient trails recorded archaeologically are also significant to local Tribes and must be protected. These trails connect village sites, gathering sites, springs, and other places of cultural significance.

Many archaeological sites show specifically human traces in the Monument, although cultural sites for Chemehuevi, Mojave, Kawaiisu, Shoshone, Serrano, and Southern Paiute peoples also include springs and aquifers, medicinal and basket-making plants, and certain spiritually important animals (e.g., desert tortoise, bighorn sheep, golden eagle).
Section 106 of the National Historic Preservation Act requires BLM to consider the effect of its actions on historic properties (16 U.S.C. § 470(f)). Specifically, a federal undertaking triggers the Section 106 process, which requires the lead agency to identify historic properties affected by the action and to develop measures to avoid, minimize, or mitigate any adverse effects on historic properties (16 U.S.C. § 470(f); 36 C.F.R. §§ 800.4, 800.6). NHPA regulations provide that an agency, “shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey.” (36 C.F.R. § 800.4(b)(1)).

Prior to authorizing a proposed action, BLM must determine whether the proposed action is an undertaking under the NHPA (36 C.F.R. § 800.3; Mont. Wilderness Ass’n v. Fry, 310 F. Supp. 2d 1127, 1152 (D. Mont. 2004)).

Given the recognized impacts to cultural resources and the fact that these resources have priority status as Monument Objects and values, BLM should have a more complete baseline inventory before allowing uses that impact these resources to continue. BLM should also prioritize the most sensitive, important, and at-risk areas for the protection of cultural resources and commit to performing surveys before making final resource allocations.

7 Monument Management Authority/Guided by Monument Proclamation

The Federal Land Policy and Management Act (FLPMA) requires BLM to manage public lands under multiple use principles unless an area has been designated by law for specific uses, in which case BLM must manage the land for those specific uses (43 U.S.C. § 1732(a)). In other words, BLM will manage national monuments not under the FLPMA multiple use mandate, but rather under the Proclamation that established the Mojave Trails National Monument. This requirement is expressly provided for in FLPMA itself:

“The Secretary shall manage the public lands under the principles of multiple use and sustained yield, in accordance with the land use plans developed by him under section 1712 of this title when they are available, except that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law.” (FLPMA, 43 U.S.C. § 1732(a)).

Pursuant to the legal authority granted by Congress in the Antiquities Act of 1906 (16 U.S.C. §§ 431-433), the President designated the Mojave Trails National Monument for the explicit purpose of protecting and preserving identified historic and scientific objects. Accordingly, the standard approach to multiple use management does not apply to this monument, and any effort to adopt such a management approach to the detriment of its natural and cultural objects and values would be in violation of the Proclamation and the mandates of FLPMA. 43 U.S.C. § 1732(a). BLM must manage the Monument for the protection and preservation of its natural, cultural, historical, and scientific values, and only allow uses other than those needed for protection of Monument Objects when those uses do not conflict with the directives of the Proclamation.

Because of its significance, which merited designation as a national monument and inclusion in the National Landscape Conservation System (National Conservation Lands), the Mojave Trails National
Monument requires different management from other BLM lands. The designation of BLM-managed national monuments— and the establishment of the National Conservation Lands themselves— represents the cornerstone of a new era in land stewardship, in which BLM focuses on a mission of stewardship to, “conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations.” (16 U.S.C. § 7202 (2009)).

Secretarial Order 3308 speaks to the management of the National Conservation Lands. The order states in pertinent part that “[T]he BLM shall ensure that the components of the [National Conservation Lands] are managed to protect the values for which they were designated, including, where appropriate, prohibiting uses that are in conflict with those values.” The Order also requires the incorporation of science into the decision-making process for the National Conservation Lands, stating, “[s]cience shall be integrated into management decisions concerning [National Conservation Lands] components in order to enhance land and resource stewardship and promote greater understanding of lands and resources through research and education.” The 15-Year Strategy for the National Conservation Lands reinforces this by stating the, “conservation, protection, and restoration of the [National Conservation Lands] values are the highest priority in [National Conservation Lands] planning and management, consistent with the designating legislation or presidential proclamation.”

The most important aspect of this planning effort is to ensure that the objects that these areas were designated to protect are conserved, protected, and restored over the life of the plan. While discretionary uses may be allowed to continue if compatible with that charge, BLM must limit or prohibit such uses if they conflict with the values that the areas were designated to protect.

**FLPMA Land Use Planning Requires Careful Consideration of Public and Tribal Input—Need for BLM to Consider a Community Alternative**

At its most fundamental level, FLPMA requires that the BLM have current land use plans in place that allow the agency to properly manage and protect the resources (43 U.S.C. § 1702).

The FLPMA declares the following:

…the national interest will be best realized if the public lands and their resources are periodically and systematically inventoried and their present and future use is projected through a land use planning process coordinated with other Federal and State planning efforts... (43 U.S.C. § 1712(c)(9)).

FLPMA provides that the BLM shall maintain a current inventory of the resources of the public lands and, based on this inventory, “shall, with public involvement and consistent with the terms and conditions of this Act, develop, maintain, and revise land use plans which provide by tracts or areas for the use of the public lands.” (43 U.S.C. §§ 1711, 1712(a)) Tribal consultation is an aspect of identifying “inventory”.

In preparing a management plan for the Mojave Trails National Monument, BLM must ensure that it has a current inventory of resources, take into account the new use of these lands as a national monument, and allow for public and Tribal involvement. Thus, FLPMA both encourages and provides BLM the authority to implement this Community Alternative.
Additionally, providing meaningful opportunities for public and Tribal involvement in the planning process not only increases the efficiency of the planning process, but is also necessary for BLM to fulfill its statutory obligations under the National Environmental Policy Act (NEPA), (42 U.S.C. § 4321 et seq.) NEPA directs the BLM to consider reasonable alternatives as it prepares its environmental impact statement (EIS)—to “[r]igorously explore and objectively evaluate all reasonable alternatives” in the preparation of a monument management plan, providing that the range of alternatives is, “the heart of the environmental impact statement” (40 C.F.R. § 1502.14). Further, “[a]n agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action” (Nw. Envtl. Defense Center v. Bonneville Power Admin., 117 F.3d 1520, 1538 (9th Cir. 1997)). In the scope of preparing a monument management plan, this Community Alternative is squarely within the nature and scope of the action the BLM is undertaking.

BLM also has tools available to ensure that Tribes and Tribal communities have opportunities to meaningfully engage in both the preparation and implementation of the Monument management plan. The agency can enter into an Inter-Governmental Cooperative Agreement and/or formal Assistance Agreements that will fund Tribal participation in the planning process, including attending meetings and drafting portions of the plan. Through these types of agreements the BLM can also fund Tribal engagement in implementing various elements of the plan, such as inventory and management of cultural resources and management of other activities in the Monument that may impact Tribal interests. Similar types of agreements were used to support the engagement of the Pueblo de Cochiti in development of a management plan for the Kasha-Katuwe Tent Rocks National Monument and the ongoing engagement in implementing management decisions. See Record of Decision available at https://eplanning.blm.gov/public_projects/lup/73145/134985/165139/Rio_Puerco_Field_Office-_Kasha_Katuwe_Tent_Rocks_RMP_ROD_CB.pdf. Management decisions provide a path to implement closures when needed for Pueblo de Cochiti cultural observances. See, e.g., Notice of Closure, 85 Fed.Reg. 17353 (March 27, 2020). These activities could also be carried out through a Tribal Commission, as discussed below.

A recent decision by a federal court in Colorado highlights the importance of evaluating a specific alternative approach to proposed management in a land use plan. In Wilderness Workshop v. Bureau of Land Management, the plaintiffs proposed an alternative where lands with low and medium potential for oil and gas were closed for leasing. BLM declined to consider the alternative, claiming it had already considered and discarded a “no leasing” alternative. The court found: “This alternative would be ‘significantly distinguishable’ because it would allow BLM to consider other uses for that land.” (Wilderness Workshop v. Bureau of Land Management, 342 F.Supp.3d 1145 (D.Colo. 2018), p. 38.) See also, Colorado Environmental Coalition v. Salazar, 875 F.Supp. 2d 1233, 1249-50 (D.Colo. 2008) (Community Alternative for protecting the top of the Roan Plateau was feasible and distinct from other alternatives under consideration. BLM’s failure to separately analyze the Community Alternative violated NEPA.).

The Mojave Trails Community Alternative is reasonable, reflects the requirement and intent of the Proclamation, is based in science, and is distinct and feasible for BLM to implement. BLM should include this Community Alternative for detailed analysis in the Mojave Trails National Monument Management Plan.
8 Crosswalk with Existing Special Land Use Designations and Specially Designated Conservation Areas

The Monument currently encompasses lands with existing management designations and allocations. While some of these designations are compatible with and even enhance management of Monument Objects, others should not be retained, as discussed in detail below.
8.1 Management of Lands with Wilderness Characteristics

From 2013 through 2015, as part of the DRECP planning process, BLM conducted numerous wilderness characteristics inventories of units contained within the DRECP planning area. A good number of these units are now within the boundaries of Mojave Trails National Monument. The following units are those which BLM found to have wilderness characteristics, and which are currently being managed to protect wilderness characteristics pursuant to the DRECP LUPA, pp. 152-153:

- CDCA 259-2 (South of Bonanza Spring)
- CDCA 277 (South of Homer Mountain)
- CDCA 277A-1 (Homer Mountain)
- CDCA 280A (Goffs)
- CDCA 288-1 (Piute Crossing)
- CDCA 289B (Camino West)
- CDCA 294-1 (West of Stepladder Mountains)
- CDCA 295 (Pilot Peak)
- CDCA 295A (Piute Crossing)
- CDCA 304A (Amboy Crater)
- CDCA 305-2 (Iron Mountain)
In 2014, the California Wilderness Coalition (CalWild) conducted citizen wilderness inventories in the DRECP planning area to determine whether they met the definition of lands with wilderness characteristics, using the criteria detailed in BLM Manual 6310 and 6320. The areas that CalWild inventoried and found to have wilderness characteristics that are now within Mojave Trails National Monument are Argos, Ash Hill, Bristol Lake, Chemehuevi Valley North, Chemehuevi Valley South, Iron Mountains, Ragtown, Sacramento Mountains, Ship Mountains, and Stepladder Mountains Additions. CalWild will make available the inventories upon request.

BLM should manage all of these lands to protect their wilderness characteristics in order to comply with its own guidance and to best protect Monument Objects. FLPMA requires BLM to inventory and consider lands with wilderness characteristics on a continuing basis (43 U.S.C. § 1711(a)). BLM Manuals 6310 and 6320 contain mandatory guidance on implementing that requirement. Manual 6310 directs BLM to ensure that, “[r]egardless of past inventory, the BLM must maintain and update as necessary, its inventory of wilderness resources on public lands.” BLM Manual 6310.06(A). Manual 6320 requires BLM to consider lands with wilderness characteristics in land use planning, both in evaluating the impacts of management alternatives on lands with wilderness characteristics and in evaluating alternatives that would protect those values. Wilderness inventories are to be done on a continuing basis, and relevant citizen-submitted data is to be evaluated (BLM Manual 6310.04(C)(1)).

The Monument Proclamation identifies a wide range of Monument Objects that are associated with lands with wilderness characteristics, such as the rugged landscape, scenic values, wildlife habitat, and rare plant species. Further, Monument Objects such as wildlife and plants, as well as cultural and paleontological resources, will benefit from management to protect lands with wilderness characteristics. Protection of lands with wilderness characteristics is wholly consistent with—and undoubtedly enhances—the purposes of the Proclamation. As a result, we recommend that BLM continue to identify and manage lands with wilderness characteristics to protect wilderness values both as an important resource under FLPMA and to protect Monument Objects.

8.2 California Desert National Conservation Lands

The Bureau of Land Management states that, “In 1976, Congress designated a 25 million-acre expanse of resource-rich desert lands in southern California as the California Desert Conservation Area (CDCA) through the Federal Land Policy and Management Act. In 2009, Congress, passed the Omnibus Public Land Management Act, which directed the BLM to include lands managed for conservation purposes within the CDCA as part of the National Conservation Lands. To protect this area's natural resources and facilitate development of its energy resources, the Desert Renewable Energy Conservation Plan was undertaken in 2013. This collaborative, multi-stakeholder, landscape-scale planning effort comprises 22.5 million acres in the desert regions of seven California counties, 10.8 million acres of which are BLM lands.” (BLM, 2019).

The creation of the CDCA in FLPMA led BLM to formally define the lands that should be permanently protected through an administrative tool called a Land Use Plan Amendment (LUPA) specific to the [insert LUPA specific information].

1 See also Ore. Natural Desert Ass’n v. BLM, 625 F.3d 1092, 1122 (9th Cir. 2008) (holding that “wilderness characteristics are among the values that FLPMA specifically assigns to the BLM to manage).
California desert. The 2009 Omnibus Public Lands Management Act led to the establishment of the California Desert National Conservation Lands. Because Congress directed the BLM to add these lands to the National Conservation Lands system, BLM cannot change the boundaries of these designated lands in future plan amendments per the DRECP. For this reason, the California Desert National Conservation Lands cannot be “folded into” a zoning approach like other current land use designations.

The California Desert National Conservation Lands are a collection of ecologically rich public lands in the California desert that have been designated for conservation through the DRECP. They consist of individual areas of diverse size and special natural characteristics scattered throughout California’s southeastern corner that contain almost 4 million acres of rocky desert peaks, sloping bajadas, and lush riparian corridors.

BLM identified these new National Conservation Lands by using ecological, cultural, and scientific data, and by considering development pressures, landscape intactness, scenic quality, landscape linkages, and area size. BLM grouped lands into ten sub-regions, including the Coachella Valley, Lake Cahuilla, the Western Desert and Eastern Slope, and the Mojave and Silurian Valley.

Mojave Trails National Monument covers 1,027,000 acres of the California Desert National Conservation Lands. While this land use designation provides the strongest baseline for protective policies and measures in Mojave Trails, the designation was not completed from the perspective of Monument Objects.

To identify how the California Desert National Conservation Lands will affect management of objects in Mojave Trails, the following approach is proposed.

Recommendation:

Improve resource management planning in Mojave Trails National Monument by incorporating the California Desert National Conservation Lands.

Strategies:

- Inventory the Conservation Management Actions and Management Objectives outlined the DRECP that apply to Mojave Trails National Monument.
- Identify how Conservation Management Actions and Management Objectives affect the Monument Objects in Mojave Trails National Monument.
- Incorporate the actions and strategies into resource management planning.

8.3 Areas of Critical Environmental Concern

There are 14 Areas of Critical Environmental Concern (ACECs) contained within or partially overlapping Mojave Trails National Monument, as reflected in the DRECP Appendix B. There are more than 6 million acres of ACECs across the California desert and over 1 million acres of ACECs inside Mojave Trails. The 14 ACECs contained within or overlapping the Monument include the following:

- Afton Canyon
- Amboy Crater National Natural Landmark
- Bigelow Cholla Research Natural Area
• Bristol Mountains
• Cadiz Valley
• Cady Mountains WSA
• Chemehuevi
• Dead Mountains
• Marble Mountains Fossil Bed
• Mesquite Hills/Crucero
• Mojave Fringe-toed Lizard
• Patton Military Camps
• Pisgah Research Natural Area
• Piute/Fenner

ACECs are areas “where special management is required (when such areas are developed or used or where no development 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” (43 U.S.C. § 1702(a)).

Many of the ACECs in Mojave Trails National Monument were established to protect certain resource values under the Presidential Proclamation that created the National Monument. According to the Proclamation, Mojave Trails National Monument was established, “to preserve the objects of scientific and historic interest on the Mojave Trails lands,” and to establish, “proper care and management of the objects to be protected.”

The importance of the ACEC designation (and accompanying management objectives) to the “proper care and management of the objects to be protected” should be judged using the following criteria:

1. **Alignment** of relevance and importance criteria of the ACECs to the proper care and management of the Monument Objects in Mojave Trails National Monument.

2. **Size** (in acres) of the ACECs given the specific resource they are meant to protect, particularly if other ACECs protecting similar resources or objects are contained entirely within the larger ACEC boundary.

3. **Uniqueness** of the ACECs protective measures towards Monument Objects. For example, the Patton Military Camps ACEC is the only ACEC created expressly to protect the Desert Training Center.

4. **Significance** for Native American cultural spiritual values and importance of access management measures

5. **Overlap** with other protective designations that serve the same or similar purposes such as National Conservation Lands and Lands with Wilderness Characteristics in addition to the Monument.

More importantly, the management objectives identified in the ACECs (including DRECP or other resource management plans) should be carefully analyzed to see how existing management can be
applied toward the Mojave Trails National Monument Resource Management Plan. Additional management activities should be included in the resource management plan where this analysis identifies gaps in activities necessary for the proper care and management of Monument Objects, as well as consideration and inclusion of object-specific management recommendations from this Community Alternative.

**Recommendation:** Incorporate ACECs and management objectives into the Mojave Trails National Monument Resource Management Plan.

**Strategies:**

- Designate planning units in the Monument that correspond to follow the areas currently designated ACECs. Where two ACECs overlap, discern which planning unit the area should be incorporated into using the criteria outlined above.
- ACECs cover nearly the entire monument, and they will help set goals and objectives for management of each discreet area of the Monument. The ACEC prescriptions should be in line with the overlapping zoning recommendations for management of Monument Objects and values, and these planning units will require special management corresponding with the management the ACEC was designated for originally. For example, the Patton Military Camps (Iron Mountain, Granite, Ibis, Essex, etc., should be included in a planning unit for the Desert Training Center). Afton Canyon ACEC would be incorporated into an Afton Canyon/Crucero planning unit, and so on.
- Incorporate management objectives from previous land use plans (conservation management actions, management objectives, goals and objectives) into the planning units for each geographic region. Apply Significance for Native American cultural spiritual values and importance of access management measures.

**Recreation Management Areas:**

The Recreation Management Areas (RMAs) that currently exist within the Mojave Trails National Monument were established in 2016 as a result of the DRECP Land Use Plan Amendment. They are general areas of BLM-administered lands where the following criteria are met: recreation has been identified as a major use, and recreation on the landscape has grown to a level that requires more management than the general multiple-use lands outside of the RMAs. Effectively, an RMA is to recreation what the ACEC is to special resources. The intensity of additional management depends on the type of RMA designation: Special or Extensive.

A Special Recreation Management Area (SRMA) is a “public lands unit identified in land use plans to direct recreation funding and personnel to manage for a specific set of recreation activities, experiences, opportunities and benefits.” LUP decisions and actions are, “geared to a strategically identified primary market—destination, community, or undeveloped areas” (DRECP Appendix C, page 2).

An Extensive Recreation Management Area (ERMA) is a “BLM administrative unit that require[s] specific management consideration in order to address recreation use and
demand.” Their management is, “commensurate with the management of other resources and resource uses.” (DRECP Appendix C, Page 2).

RMAs are further broken down into recreation management zones (RMZs) that identify specific areas within the RMA that require special attention by staff to manage recreation impacts. The RMZs can be within either SRMAs or ERMAs, and they will typically overlap with an ACEC. One example of this is the Amboy Crater Lava Field Zone RMZ. Establishing an RMZ allows the BLM to develop a plan to manage recreation and its impacts within the boundaries of the RMZ.

The RMA classification can conflict with existing management plans for overlapping land use designations like ACECs or national monuments. The DRECP addressed this in both general and specific statements. Generally, “if...management plans are inconsistent, the more sensitive resource and/or site-specific management will apply.” More specifically, “if there is a conflict between the California Desert National Conservation Lands or ACEC management and the SRMA or ERMA management, the BLM will apply the most protective management” (Appendix C, Section 1).

Each of the RMA special unit management plans accepted under DRECP identifies potential conflicting land designations and identifies which management plan the RMA’s management defers to. This is summarized in the table below.

The Mojave Trails National Monument Resource Management Plan could reconcile any management conflicts within its planning area to streamline management efforts and make them easier to implement through inevitable staff turnover. That could be in the form of adjusting the existing SRMA/ERMA boundaries to mesh with the overarching Monument zones, removing some SRMA/ERMAs, or adding new ones to match Frontcountry zones.

### Summary of Existing SRMA and ERMA within Mojave Trails National Monument

<table>
<thead>
<tr>
<th>Management Goals/Objectives</th>
<th>RMA Management defers to:</th>
<th>Appendix C Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afton Canyon SRMA† ‡ Improve condition of riparian habitats, wildlife habitats, visual resources, and provide continued visitor services and low impact recreation</td>
<td>Defer to the Monument Management Plan as well as the Afton Canyon ACEC Special Unit Management Plan</td>
<td>137</td>
</tr>
<tr>
<td>Cadiz Valley ERMA Outstanding views and dispersed recreation</td>
<td>Defer to the Monument Management Plan as well as the Cadiz Valley ACEC Special Unit Management Plan</td>
<td>47</td>
</tr>
<tr>
<td><strong>Chemehuevi Valley SRMA†‡</strong></td>
<td>Provide a broad range of OHV recreational trail opportunities to provide for the current and future use of residents and winter visitors</td>
<td>Manage in accordance with Mojave Trails National Monument, as Congressionally designated</td>
</tr>
<tr>
<td><strong>Crucero Valley ERMA</strong></td>
<td>Outstanding views and dispersed recreation</td>
<td>Defer to the Monument Management Plan as well as the Special Unit Management Plans of the Mesquite Hills/Crucero &amp; Mojave Fringe-toed Lizard ACECs.</td>
</tr>
<tr>
<td><strong>Lava Hills ERMA</strong></td>
<td>Outstanding views and dispersed recreation</td>
<td>Defer to the Monument Management Plan as well as the Special Unit Management Plans of the Bristol &amp; Chemehuevi ACECs</td>
</tr>
<tr>
<td><strong>National Trails Viewshed SRMA†‡</strong></td>
<td>Manage for outstanding scenic and historic recreational opportunities through traveling the Mojave Adventure Trails</td>
<td>Mojave Trails National Monument Management Plan, in addition to the Special Unit Management Plans of the following ACECs: Amboy Crater, Bigelow Cholla, Bristol, Cadiz Valley, Chemehuevi, Dead Mountains, Marble Mountain Fossil Bed, Patton Military Camps, &amp; Piute-Fenner.</td>
</tr>
<tr>
<td><strong>Sacramento Mountains SRMA‡</strong></td>
<td>Provide a broad range of OHV recreational trail opportunities for current and future use</td>
<td>Manage in accordance with Mojave Trails National Monument. No other deference mentioned in DRECP.</td>
</tr>
<tr>
<td><strong>Ward Valley ERMA†</strong></td>
<td>Outstanding views and dispersed recreation</td>
<td>Defer to the Monument Management Plan as well as the Special Unit Management Plans of the Following ACECs: Cadiz Valley, Chuckwalla to Chemehuevi Tortoise Linkage, Chemehuevi, Patton Military Camps, and Turtle Mountains.</td>
</tr>
</tbody>
</table>

The above information is from the Final DRECP Land Use Plan Amendment, Appendix C: Special Recreation Management Area and Extensive Recreation Management Area – Special Unit Management Plans
† RMA has additional management implementations, mitigation measures, or specific details to consider when incorporating into Mojave Trails National Monument. These are listed on the following pages.
‡ RMA will have an activity level plan written for it.

The sections below list implementation decisions, mitigation measures, goals and objectives and potential revisions for SRMAs and ERMAs within Mojave Trails National Monument.

**8.3.1.1 Afton Canyon Special Recreation Management Area**

**Implementation Decisions:**

1. Develop an activity level plan to identify and designate current and future recreational opportunities.
a. Develop appropriate facilities to provide and manage the proposed uses.

b. Establish parameters for SRPs within SRMA.

c. Establish road/trail maintenance parameters.

2. Allow passage of motorized vehicles along the Mojave Road by rerouting a portion of the road out of the riparian area and designating the Afton Canyon portion of the Mojave Road as open for all vehicles.

3. Cooperate with the county to maintain Afton and Mojave Roads.

4. Restore natural conditions to all routes that are not designated as open.

5. Maintain existing campground at its existing size (as of 2016); transition it to a fee use camping area.

6. Maintain the dry camp area on the bench west of the campground as a group camping area.

7. Maintain fencing for equestrian use and to control vehicles.

8. Develop an interpretive foot trail within canyons near the day use area, campground, and group site.

9. Continue to implement the approved Afton Canyon Management Plan until new plan is developed.

10. Manage all routes of travel as open, limited, or closed as designated by local travel management plan.

Mitigation Measures:

1. Maintain designated motorized route network connectivity leading into and through the Afton SRMA.

2. Manage energy projects, ROWs, and similar developments on adjacent and nearby lands to avoid traffic conflicts with visitors and permitted uses.

3. Maintain access to and across the historic Mojave Road leading into and through Afton Canyon, from Interstate 15 east to the Mojave Preserve.

4. Route the Mojave Road through Afton Canyon and designate route for all motorized vehicle types, including Off-Highway Green Sticker registered vehicles.

5. Prohibit use of OHVs in the designated campground; allow their use at the group campsite and on the Mojave Road. Monitor for OHV intrusions and restore as possible.

6. Establish a buffer along the Old Spanish National Historic Trail development exclusion zone leading into and through the Afton Canyon SRMA, centered along the approximate trail alignment per National Historic guidelines.

7. Manage energy developments on adjacent and nearby lands to maintain dark skies.
8. Manage upstream energy development to avoid impacts to water levels in the Mojave River.

9. Establish and follow a strategy for managing water, access, and resource issues related to the stretch of Mojave River designated an eligible wild and scenic river in the West Mojave Plan.

Community Alternative Revisions:

Recommend revising the SRMA boundaries to match the Frontcountry zone around Afton Canyon.

8.3.1.2 Chemehuevi Valley Special Recreation Management Area

Location within Monument: The northern portion of the SRMA overlaps the southeastern portion of the Monument, adjacent to the Chemehuevi Mountains Wilderness Area. The Snaggletooth Primitive Camp RMZ is the only one of this RMA’s RMZs within Mojave Trails National Monument.

Snaggletooth Primitive Camp RMZ

Goal: Provide and maintain a formal campground setting to accommodate a broad range of recreational camping.

RMZ Setting: Front to back country.

RMZ Implementations:

- Provide necessary facilities to manage increased and spreading visitation.
- Develop a business plan to provide funding for operations and maintenance.

Implementation Decisions:

1. Develop activity level plan to identify:
   1. Current and future OHV recreation trail opportunities,
   2. Appropriate facilities to provide for and manage the proposed uses,
   3. Parameters for streamlining the SRP process,
   4. Staffing and funding needs,
   5. Parameters for facility and road/trail maintenance,
   6. Partnerships,
   7. Possible recreation fees,
   8. Implementation schedule.

2. Maintain through traffic motorized route network connectivity with roads and trails leading into and through the Sacramento Mountains SRMA.
8.3.1.3 National Trails Viewshed Special Recreation Management Area

8.3.2 Amboy Crater Lava Field Zone RMZ
RMZ Location: Adjacent to Historic Route 66.

RMZ Goal/Objective: The Amboy Crater Lava Field Zone will be managed as an educational and interpretative site which offers outstanding recreational opportunities. The Amboy Crater Lava Fields RMZ will provide a maintained system of hiking trails and facilities in which to view the cinder cone and surrounding lava fields.

RMZ Setting: Environmentally backcountry, but socially urban.

8.3.3 Trilobite and Ship Mountains Rock Collecting Area RMZ
RMZ Goal/Objective: Rockhounding sites will be managed for the ease of accessibility to geological specimen sites as well as to areas with primitive car camping opportunities.

RMZ Setting: Backcountry—Frontcountry as defined in the Desert Renewable Energy Conservation Plan (DRECP).

RMZ Specific Management: Trilobite Rock Collecting Area is limited on the number of specimens that can be collected; the Ship Mountain Collecting Area is not limited.

8.3.4 Bonanza Springs Day Use Area and Campground RMZ
RMZ Goal/Objective: The Bonanza Springs RMZ will be managed for wildlife viewing and primitive camping and hiking opportunities.

RMZ Setting: Backcountry—Middlecountry as defined in the DRECP. The existing recreation plan corresponds well to the Community Alternative zones.

Camp Ibis, Camp Clipper, and Camp Essex WWII Historic Sites
RMZ Goal/Objective: Camp Ibis will be managed as a living museum that focuses on the role the American Deserts played in training troops during World War II.

RMZ Setting: Frontcountry—Rural.

8.3.5 Mojave Trail and Boulders Primitive Camp RMZ (PDF pg 214)
RMZ Location: This is the Boulder/Balancing Rock Camp northwest of the Dead Mountains Wilderness.

RMZ Goal/Objective: To be managed as part of the Mojave Adventure Route System and as a historical route and primitive camp.

RMZ Setting: Backcountry—Middlecountry as defined in the DRECP.

Implementation Decisions:

1. Develop an activity level plan to identify and designate current and future recreational opportunities, appropriate facilities to provide and manage the proposed uses, parameters for
streamlining SRP applications for events, staffing and funding needs, parameters for facility/road/trail maintenance, recreation fee considerations, and an implementation schedule.

a. Consider a camping recreation use permit program.

b. Develop hiking trails and trailheads.

c. Pursue watchable wildlife designation.

2. Manage all routes of travel as open, limited, or closed as designated in local travel management plan.

3. The Mojave Trails National Monument is within the SRMA; manage in accordance as Congressionally designated.

4. Maintain the Mojave Adventure Trails System using signs, markers, and appropriate erosion control installations.

**Mitigation Measures:**

1. Maintain through traffic motorized route network connectivity with roads and trails leading into and through the National Trails SRMA.

2. Manage renewable energy development on adjacent and nearby lands to avoid traffic conflicts with visitors and permitted uses.

**8.3.5.1 Ward Valley Extensive Recreation Management Area**

*Iron Mountain Divisional Camp and Rice WWII Historic Sites*

**RMZ Rationale:** Creating an RMZ would allow the BLM to manage the historic sites in an activity plan and the surrounding area in a custodial manner to ensure the quality of dispersed recreation experiences and opportunities, reducing impacts to the original footprint of the site.

**9 Potential Avenues for Tribal Engagement**

Native American have used the lands within Mojave Trails National Monument for thousands of years, resulting in numerous significant archeological resources including Native American village sites and culturally significant traditional areas. Many people within the Mojave Desert—now known as Mojave (also Mohave), Shoshone, southern Paiute, Serrano, Kawaiisu, and Chemehuevi—used to travel in small, mobile social units with flexible boundaries. The Chemehuevi moved into the Monument territory around 1500 A.D. and inhabited the area until their numbers declined with European immigration.
Mesquite Hills/Crucero Hills has been recognized as a significant Native American heritage area for the teaching of traditional learning skills. Here, over 50 archaeological sites containing petroglyphs, milling stations, temporary camps, intaglios, lithic scatters, and pottery dated as old as 4,000 years are scattered throughout the area. In the Chemehuevi Desert Wildlife Management Area, archeological sites have been dated to between 10-12,000 years old and include foliated points, knives, and flakes.

In more recent times, the Chemehuevi used the Mojave Trail (also known as the Mohave Trail), an historic trail linking the Colorado River area with the Pacific Ocean, as their main trading route. Over 100 archaeological sites have been identified in the area, some containing remnants of ranching, mining, and railroad activities.

Petroglyphs are found throughout the Piute-Fenner Desert Wildlife Management Area. An area protected by the Archeological Resources Protection Act of 1979 is located within the Ship Mountains. The Ward Valley, between the Old Woman and Piute Mountains, is important to several Native American tribes and was inhabited chiefly by the Mojave and Chemehuevi (Klasky, 1997). The Ward Valley is considered sacred by several lower Colorado River Indian Tribes; it is described in the Mojave Trails National Monument Native American Reservations map.
Bird Songs and is part of the Salt Song Trail used in memorial and other ceremonies. The Chemehuevi identify the Ward Valley as an area with specific important cultural resources.

The Native American Land Conservancy owns the 2,400-acre Old Woman Mountains Preserve in the Mojave Trails National Monument, where they teach different cultural language and outdoor education programs. Tribal interests in the area were demonstrated in a dramatic fashion during the mid-1990s when a low-level nuclear waste dump was in the planning stages for the Ward Valley, precipitating a 113-day standoff between Colorado River Native Nations Alliance and federal officials. This action ended with Tribal and conservation interests preventing the facility from moving forward, and the event is still celebrated annually, even years after the victory.

9.1 General Recommendations
Given the long historical and current investment of Tribal nations in the lands that are also known as the Mojave Trails National Monument, direct engagement with Tribal nations regarding ongoing monitoring and management of cultural resources in the National Monument is necessary to appropriately care for and manage Monument Objects. There are multiple examples across public lands in the U.S. of federal/Tribal cooperation and co-management of public lands, such as Santa Rosa-San Jacinto Mountains National Monument in California and Kasha-Katuwe Tent Rocks National Monument in New Mexico. The BLM can look to these and other examples within the scope of existing law and policy to develop the best options for Mojave Trails National Monument. Tribal input through workshops that engage both agency, public, and tribes can work towards a collaborative process.

Management of cultural resources and cultural landscape values should be a cooperative effort that encourages collaboration among the BLM, other federal and state agencies, local governments and Tribal governments, while respecting confidentiality and Tribal sovereignty. Recognizing the religious and cultural value of lands in Mojave Trails to many Tribes, BLM should consult with Tribes that have concerns about the Mojave Trails area and the Monument Objects, natural resources, cultural resources, and/or land uses involved. Monitoring and site steward programs through tribes should be initiated.

9.2 Nation-to-Nation Consultations - “Section 106”
Federal regulations direct the BLM to invite eligible federal agencies, State and local governments, and federally recognized American Indian Tribes to participate as cooperating agencies when drafting an EIS (U.S. Department of the Interior). In accordance with Section 106 of the National Historic Preservation Act (NHPA) and NEPA, the BLM, as the Leading Agency, must identify and consult with any group that could be affected (culturally, economically, or environmentally) by actions taken to manage the National Monument.

The BLM should consult with the California State Historic Preservation Officer and the Tribal Historic Preservation Officers for all stakeholder Tribal nations. If these positions have not been appointed, there should be significant effort made to find a representative for each Tribe who can be the point of contact for consultation. BLM should also allow tribes to submit their respective communication protocols, which can become part of the document.

The Leading Agency, in consultation with the tribes, should strive to create a plan that respects Tribal sovereignty and must recognize that the definitions or understandings of what is sacred or cultural heritage can change between Nations. Consultations should first identify important sites, objects,
resources, and values within the national monument, then identify needs and expectations of stakeholders. If the public user groups could be affected by the management plan, the leading agency also has a responsibility to allow for public feedback and consultation about the plan, possibly through meetings or public forums.

**Recommendations:** Ensure the Section 106 consultation process is as robust as possible to ensure extensive Tribal Consultation on management plans.

**Strategies:**

- Identify all affected Tribes before the management plan begins.
- Consultation is more than merely a letter or email correspondence. Multiple attempts and modes of communication, including site visitation, should be used to secure Tribal engagement on natural and cultural resource issues. Early and persistent consultation are of paramount importance even if there is no immediate contact with a Tribal representative.
- Utilize the open line of communication with a Tribal representative(s) to build a consistent cooperation.
- Identify important values, objects, sites, etc. with each Tribal Nation, and allow for an open line of feedback and consultation for the successful and appropriate management of said values.
- Initiate a complete ethnographic study of the Mojave Trails National Monument to define cultural landscape(s). These studies should be collaborative in nature, involving each Tribal National.
- Work with Tribes and Tribal non-profits (e.g., Native American Land Conservancy) to identify additional areas appropriate for addition to the National Register of Historic Places.

**9.3 Tribal Commission**

In order to properly recognize the importance of Tribal participation in the development of the management plan and overall management of the Monument, the agency, through Tribal consultation and collaboration, should establish a Mojave Trails Tribal Commission (Commission). This Commission would not be a committee under the Federal Advisory Committee Act, but a Commission composed of representatives from sovereign Tribal nations to provide guidance on management of the Monument.

As discussed above, BLM can and should prescribe a specific, agreed-upon role for Tribes in developing and implementing the Monument management plan. A Tribal commission can make high level policy and strategic decisions about Monument management, and a majority of Commission members would be nominated by each Tribe. The functions of the Commission would include:

- To assist in preparing management and inventory plans for the Monument and design a monitoring plan to inform future management of the Monument;
- To assist in making decisions relating to the management of the Monument that affect Tribal uses and interests; and
- To implement programs and efforts as agreed upon and described in the management plan, such as the Cultural Resources Management Plan discussed below.
The Commission should provide guidance on the development and implementation of management plans and on management of the monument. The Commission should consist of one elected officer each from the tribes with interest in the Monument as ascertained by the Secretary of the Interior though consultation with the Tribal Historic Preservation Officers and State Historic Preservation Officer.

The Commission may adopt such procedures as it deems necessary to govern its activities, so that it may effectively partner with the federal agencies by making continuing contributions to inform decisions regarding the management of the monument.

In developing or revising the management plan, the Secretary should carefully and fully consider integrating the traditional and historical knowledge and special expertise of the Commission or comparable entity. If the Secretary decides not to incorporate specific recommendations submitted in writing by the Commission or comparable entity, she or he should provide the Commission or comparable entity with a written explanation of their reasoning. The management plan should also set forth parameters for continued meaningful engagement with the Commission or comparable entity in implementation of the management plan.

Recommendation: In addition to the required Section 106 Consultation process outlined in NHPA, and in recognition of the importance of Tribal participation to the care and management of the Monument Objects, and to ensure that management decisions affecting the monument reflect Tribal expertise and traditional and historical knowledge, a Tribal Commission should be established to provide guidance and recommendations on the development and implementation of management plans and on management of the monument.

Strategies:

- Before the formal Resource Management Planning process begins, the Secretary of the Interior should consult with the California State Historic Preservation Officer, Tribal Historic Preservation Officers, and Tribal Nations to ascertain what Tribal nations have interest in the national monument.
- Through relationship-building and coordination with Tribal governments, Tribal nonprofits, and Tribal communities adjacent and culturally tied to the Mojave Trails region, formation of a Tribal Commission for Mojave Trails National Monument should be considered in consultation with Tribal Governments to better monitor and manage cultural resources across the landscape.
- The resource management plan shall also set forth parameters for continued meaningful engagement with the Commission or Tribal nations in implementation of the management plan.
- If the Secretary decides not to incorporate specific recommendations submitted in writing by the Commission or comparable entity, she or he should provide the Commission or comparable entity with a written explanation of their reasoning.

9.4 Partnerships and Agreements

In addition to the consultations made through the Section 106 process, Tribal governments can engage with the BLM and other groups by creating cooperating agency agreements, interagency agreements,
assistance agreements, and contracts (Agreements). Possible stakeholders in the management of the Monument should be identified and approached about interest in these kinds of Agreements for improved management of cultural resources. Agreements can outline a number of aspects of the management plan including, but not limited to, who has the authority to make decisions, what kind of input should be provided from each cooperating agency, their interests and goals, timelines, and responsibilities. Just as through the Section 106 process, all these agreements should be documented thoroughly, including meetings and correspondence that go into the decision. These Agreements, however, do not take the place of any federal regulations for consultation through the Section 106 process. These Agreements are a possible avenue of Tribal engagement, as they require approval by both the Tribal nation and BLM. Agreements offer a way to outline goals for all stakeholder groups and can establish a plan for responsibilities of the BLM in connection to cultural and environmental sites.

Both the Section 106 formal consultation process and partnerships should work to integrate traditional ecological knowledge, Tribal knowledge, and other ways of knowing into Agreements. The cooperating agencies and leading agencies should recognize the differences in worldview and strive to collaborate and create the best management scenarios for all parties. The BLM should also recognize the abilities of Tribal nations to utilize their own resources for the purposes of management.

**Recommendation:** Through cooperating agreements, interagency agreements, assistance agreements, and contracts, establish more consistent, effective, and collaborative partnerships with Tribal nations and organizations for monitoring and management of cultural heritage and environment in Mojave Trails National Monument.

**Strategies:**

- After following the Section 106 guidelines outlined above, seek to create a cooperating agency agreement with every interested Tribal nation.
- Where appropriate, seek opportunities work with Tribal nations, federal, state, and local agencies to form interagency agreements to improve monitoring and management of cultural resources and care of the Monument Objects.
- Outline forms of management, including responsibilities of both the leading agency and the cooperating agency.

### 9.5 Cultural Resources Monitoring and Management Plan

Given the diversity of cultural resources in Mojave Trails National Monument, any management planning should be done in a way that clearly analyzes and communicates how cultural resource management will be approached by the tribes and BLM. Traditional ecological knowledge and traditional knowledge should be integrated into resource management planning in a way that directly involves Tribal nations.

**Recommendation:** Through the consultation processes listed above, the Secretary should engage Tribal nations in developing a Cultural Resources Monitoring and Management plan which outlines processes for shared monitoring and management of cultural resources and protection of Monuments objects.

**Strategies:**

- Develop management actions in consultation with Tribal nations
• Integrate Tribal knowledge into Resource Management Planning.
• Initiate a complete ethnographic study of the Mojave Trails National Monument to define Cultural Landscape(s).
• Determine whether any cultural landscape is traditional cultural property eligible for the National Register of Historic Places; the status of known contributing sites should also be determined.
• Outline appropriate scientific research planning and design.
• Identify management of cultural resources and Monument Objects in sites that are used regularly by the general public.
• Create interagency methods for emergency protection of cultural resource sites.
• Encourage stewardship of cultural resources by traditional users.
• Encourage traditional uses of public lands.
• Identify interpretive needs as appropriate.
• Inform future research needs, including baseline assessments.

10 Community Engagement, Outreach, and Accessibility
10.1 General Recommendations

The purpose of this section is to provide recommendations to ensure that the BLM maximizes opportunities for public engagement and reduces barriers to access across the new national monument. Opportunities for public engagement should include maximizing opportunities for a diverse range of stakeholders and Tribes to participate in the planning process for Mojave Trails National Monument, as well as maximizing opportunities for the public at large to visit and enjoy the monument.

FLPMA gives the BLM the obligation to include broad public participation throughout the planning process. Furthermore, FLPMA and NEPA obligate the BLM to coordinate with local governments, including Tribal governments, as cooperating agencies in the planning and review process.

These recommendations include general approaches to community engagement with particular attention given to the engagement of priority communities, which include underserved communities and inner-city youth. The priority communities listed in this chapter were chosen with the goal of increasing opportunity across diverse groups. It is particularly important to include diverse members of the public who are affected by management decisions in the Monument’s planning process. These stakeholders should be given an opportunity to influence the long-term vision and planning of the monument.

Included in this section are BLM staffing recommendations, information about the California Desert District Advisory Council subgroup, recommendations for increasing access to the monument’s recreational opportunities, and procedural recommendations for stakeholder engagement.

Recommendations:

Mojave Trails National Monument lies adjacent to several incorporated and unincorporated communities and Tribal reservations, and it is within a two-hour drive of Los Angeles, San Diego, Riverside-San Bernardino-Ontario metropolitan area, and Las Vegas. Visitation to public lands in the California desert, particularly those with improved facilities, is growing quickly. These communities and visitors rely on the Monument in a variety of ways, from a growing tourism economy to recreational use to quiet reflection. Additionally, Mojave Trails underlies military operation areas, special use airspace, and important routes of travel for local military training installations.

The National Monument contains cultural landscapes, sacred areas, and traditional territories for Tribal bands and interests. A variety of programs are connecting Tribal members to the living history, traditional practices, and languages that are an inextricable part of the lands in Mojave Trails National Monument. These activities should be supported by BLM partnership, while avenues of Tribal engagement are carried out as outlined earlier in this proposal.

Strategies:

- Ensure early public involvement in the planning process.
- Host multiple panel discussions and open houses on the use and needs of the national monument to ensure the public feels heard and concerns are aired, particularly in relation to the following topics:
  1. Military concerns,
  2. Local businesses and residents,
3. Interested user groups,
4. Tribal interests,
5. Utilities, i.e., Pacific Gas and Electric Company, Southern California Edison.

- BLM should seek to enter into cooperative agreements or memorandums of understanding for the purposes of interpreting, researching, and providing education on the resources of the Monument.
- Engage a broad and diverse audience of users across the California desert, particularly in Barstow, Needles, 29 Palms, and adjacent unincorporated communities, as well as the affected local Tribal communities, to identify and promote official gateway communities for the purpose of increased tourism and visitation.
- Engage local businesses, particularly those which rely on tourism to the area’s public lands, to outline ways visitors can enjoy the Monument.
- Engage local, county, and state destination marketing organizations to help promote visitation to the Monument.
- Coordinate with San Bernardino County to protect and publicize the Monument.
- Establish an artist-in-residence program through a partnership with a local art organizations and communities.
- Engage specific interested user groups in monument planning actions. Include hiking clubs, rock hounds, native plant enthusiasts, overland trail enthusiasts, wilderness advocates, off-highway vehicle users, horseback riders, sightseers, veteran groups, and representatives from the film industry and utilities.
- Create educational and multilingual interpretive materials to improve access to information about the Monument.
- Before moving to publish a resource management plan, create a baseline assessment of the existing conditions of Monument Objects and the related functions and systems which the Monument Objects depend on while giving the public an opportunity to submit data and information about Monument Objects.
- Plan across landscapes by considering interagency cooperation and including information that spans administrative boundaries (such as the National Park Service).
- Establish a social media presence to build channels with diverse communities to stay up to date with Monument activities.

10.2 BLM Staffing
To adequately protect Monument Objects, the BLM should complete an initial staffing assessment while developing the resource management plan. In the interim, the following staff are necessary at a minimum to ensure the protection of Monument Objects:

- Monument manager,
- Two dedicated law enforcement officers from local field offices,
- Natural and cultural resource specialists in archaeology and wildlife,
- Recreation planner,
• Additional staff as required should be utilized from local field offices and the California Desert District Offices for Realty, Mine Safety, Wilderness Management, and associated topics.
• Two park rangers.

10.3 Mojave Trails DAC Subgroup
The California Desert District Advisory Council (DAC) advises the California Desert District Manager, as well as BLM officials for the Barstow, El Centro, Needles, Palm Springs, and Ridgecrest field offices.

The DAC consists of 10 to 15 members who represent stakeholder interests in public land management, such as conservationists, outdoor recreationists, ranchers, industry officials, Tribal leaders, state and local government officers, academics, environmental scientists, and members who can provide management representation for the Monument Objects.

Originally mandated in the FLPMA, the DAC remains the only Congressionally designated resource advisory council.

In the spring of 2017, the DAC voted to advise the California Desert District Manager to incorporate a subgroup of the DAC to help provide advice on the preparation of a resource management plan for Mojave Trails National Monument. This advice was reaffirmed by the DAC in December 2018.

Recommendation: Engage a broad array of public stakeholders and user groups in formulating resource management planning for Mojave Trails National Monument through the Desert Advisory Council.

Strategies:

• Activate the subgroup of the DAC for Mojave Trails National Monument planning to provide advisement on interim management before a Resource Management Plan is prepared, as well as provide advisement on the preparation of a Resource Management Plan.
• Strategy: Incorporate diverse and relevant representatives by seeking the following representation on the subgroup:
  1. A representative with expertise in natural science and research selected from a regional institution of higher education or research,
  2. A representative of the California Natural Resources Agency,
  3. A representative of the California Public Utilities Commission,
  4. A representative of the County of San Bernardino, California,
  5. A representative of each of the cities of Barstow, Needles, Twentynine Palms, and Yucca Valley, California,
  6. Tribal representation as outlined by the Mojave Trails National Monument Tribal Commission,
  7. A representative of the Department of Defense,
  8. A representative of The Wildlands Conservancy,
9. A representative of a local conservation organization,

10. A representative of an historical preservation organization,

11. A representative of organizations relating to each of the following recreational activities:
   A. Off-highway vehicles,
   B. Hunting,
   C. Rockhounding,
   D. Other Tourists (e.g., camping, hiking, birdwatching),

12. A representative of the Southern California Edison,

13. A representative of the Pacific Gas and Electric Company,

14. A representative of the Metropolitan Water District of Southern California,

15. A representative of the Chamber of Commerce,

16. A representative from local- and county-level destination marketing organization,

17. A student representative from a community college or university.

10.4 Diversity, inclusion, multi-lingual/all-access multiculturalism
Mojave Desert residents and visitors come from a wide variety of cultural, racial, and ethnic groups. Much of the population of Southern California is Hispanic or Latino or has Hispanic or Latino ancestry. According to the 2010 U.S. Census, 38.1% of California residents are Hispanic or Latino, and that percentage is expected to continue to rise. Parts of the Southern California desert are as much as 75% Hispanic or Latino. Spanish is the second most common language in California. Not only is Mojave Trails National Monument surrounded by diverse resident populations, but these desert lands attract visitors from all over the world. Visitors to our public lands speak many different languages and come from a wide variety of international cultures. There should also be a focus on climate change and its disproportionate effect on communities of color and low-income communities.

Presidential Executive Order 13166, “Improving Access of Services for Persons with Limited English Proficiency,” directs federal agencies to develop and implement systems to increase access to public services.

**Recommendation:** Improve opportunities for culturally, ethnically, racially, and linguistically diverse populations to experience the desert through inclusion and through multilingual interpretive signage.

**Strategies:**
- Develop a plan to increase services to people who do not speak English as their primary language. Monitor and update the plan.
- Develop interpretive, safety, and OHV signage in both English and Spanish. Consider including signs with globally common languages, such as German, Mandarin, Arabic, Hindi, French, Russian, and Japanese, for international visitors.
• Provide oral interpretation services and bilingual/multilingual staff and volunteer outdoor guides.
• Identify additional ways to provide interpretive assistance based on visitors’ backgrounds and needs.
• Train staff in how to implement the plan to increase access and provide multilingual services.
• Conduct social media campaigns in both Spanish and English.
• Ensure that monument facilities (picnic tables, covered seating areas, restrooms, grills, walking/hiking trails) are well maintained.
• Provide outreach to Latino communities through events like Latino Conservation Week and Hispanic Heritage Month.

From the City Project:

“In short, the message of effective Monument Diversity programs should be: Visit [Mojave Trails National Monument]. Have fun. Be healthy. Learn about the people and place. Save the earth and its people and protect against climate change. Get a job as a ranger.”

Recommendation: There should be a focus on accessibility of the monument for people who may not have adequate transportation. Improve access and transportation around and to the Monument.

Strategies:
• Provide a shuttle system to the Monument from Barstow, Needles, Twentynine Palms, and other desert communities.
• Provide literature and other informational materials containing transportation information, including information about the shuttle system.

The public should be provided with opportunities to learn about the values of the Monument, interacting with the land, and promoting healthy practices to prevent and work against climate change. Healthy practices that could be promoted include water conservation, respecting public lands, and interacting with history. Interpretive signage can highlight these values on certain hiking trails and pullouts. Government rangers or volunteer guides can teach visitors about values of the monument, such as the desert tortoise, for biological diversity. These interpretive materials could be catered towards different groups, such as children, families, bikers, rock hounds, etc. That way, user groups can more easily find ways to interact with the monument based on their interests. For example, hikers can be led towards the best trails and views while being shown how to respect natural resources and how to preserve cultural resource sites.

Recommendation: Teach the public how to respect and interact with the Monument. Teach all visitors how to interact with their environment after leaving the Monument.

Strategies:
• Utilize occasional programming focusing on conservation, historical connections to the area, respecting wildlife, understanding what wildlife to look for at home and at the park, etc.
• Create multilingual pamphlets and flyers to describe the values of the park and how to best enhance one’s experience. Create pamphlets for many groups (youth, young adult, urban, suburban, etc.)

• Create a volunteer trail guide program. Volunteers will aid visitors and teach them about the ecology of the national monument.

10.5 Use, access, interpretive signage

Many visitors to the area may be traveling through unaware that they have entered Mojave Trails National Monument. There is currently a lack of informational materials, signage, and interpretive opportunities available for visitors to the National Monument.

Additionally, many visitors to Mojave Trails National Monument may benefit from greater accessibility. Considerations may include blindness, deafness/difficulty hearing, use of wheelchairs or other mobility tools, etc. The Department of Interior website states, “Public lands are for everybody, regardless of ability.” By considering ways to increase accessibility to all visitors, Mojave Trails National Monument can become a more inclusive place.

The BLM’s accessibility programs are designed to comply with the Americans with Disabilities Act of 1990 (ADA) (42 U.S.C. § 12101), as well as the Architectural Barriers Act of 1968, and the Rehabilitation Act of 1973. The ADA affords equal rights to persons with disabilities, including the right to use public services.

Recommendation: Improve accessibility of Mojave Trails National Monument for a variety of abilities in the Community Alternative proposed Frontcountry zones, Passage zones, and permit areas. Use accessible signage at Backcountry portals and trailheads. Use accessible signage as suggested by advocacy organizations.

Strategies:

• Increase inclusion by using listening tours and podcasts, as well as Braille on interpretive, safety and OHV signs, and by labeling maps and signs for visitor areas and trails with their difficulty level and availability of accessibility services. For example, visitors should be able to look at a map to see whether trails, pullouts, and kiosks, recreation sites, and restrooms are ADA accessible before making a trip to the site.

Recommendation: Comply with BLM’s accessibility programs and actively participate in the key elements of the program. BLM’s website provides guidance for the BLM’s accessibility program. The following strategy is based on this guidance.

Strategies: (aligns with BLM’s accessibility program):

• Coordinate and cooperate with other federal agencies and partners.
• Conduct systematic accessibility evaluations of developed recreation sites.
• Seek technical assistance on accessibility issues.
• Develop action plans to increase accessibility on developed recreation sites.
• Attend accessibility training and education.
• Utilize media and communication activities.
10.6 Interpretation and Visitor Experience

**Recommendation:** In consultation with tribes, ensure visitors are aware of entry into Mojave Trails National Monument. A priority should be that monument roads and trails are well-signed and within line-of-sight to improve visitor awareness and safety.

**Strategies:**

- Install clearly visible entrance signs at all paved roads entering and exiting the National Monument (I-40, HWY 95, Amboy Road, Kelbaker Road, Afton Canyon).
- Provide maps of the national monument.
- Print “do not trust Google Maps” on the signage.
- Install signage on backcountry roads informing the public that Four-Wheel Drive high clearance vehicles are required and note to general public that cell phones and GPS devices may not work in remote locations.
- Routes that lead to marine bases/military areas are properly signed, “Stop Here.”
- Install signage and fencing as necessary at the boundary to Rasor Off-Highway Vehicle Recreation Area that clearly marks the boundary with Mojave Trails National Monument.
- Coordinate with California Department of Transportation (“Caltrans”) to place or replace signage along Interstate 40, Interstate 15, Highway 62, Amboy Road, Kelbaker Road, Route 66, and Highway 95 alerting drivers to entry portals into the new Mojave Trails National Monument and associated visitor use facilities.
- Coordinate with San Bernardino County Department of Public Works to place or replace signage along Highway 62, Amboy Road, Kelbaker Road, Route 66, and Highway 95 alerting drivers to entry portals into the new Mojave Trails National Monument and associated visitor use facilities.

10.7 Improve Transient Visitor Experience through Interpretive Signage and Media

**Recommendation:** In consultation with tribes, provide interpretive opportunities along most highly traveled routes of the National Monument.

**Strategies:**

- Install or improve interpretive signage where immediate opportunities exist (Desert Training Center camps, Sheephole Pass, Route 66 towns, Afton Canyon, Chemehuevi Valley/Sawtooth Mountains).
- Collaborate with local organizations and stakeholders to install or improve signage and interpretive opportunities through the National Monument (see section G. below).
- Seek opportunities for multimedia experiences (i.e., podcasts).

10.8 Visitor Center Siting Criteria

**Recommendation:** Where feasible, visitor centers will be coordinated or integrated with those of federal, state, Tribal and/or local agencies in the same geographic area.

**Strategies:**

- Analyze potential impacts to priority communities and underserved communities in removing barriers to accessibility to Mojave Trails National Monument.
• Analyze area infrastructure.
• Analyze existing and proposed interpretation and education programs, signage, kiosks, etc.
• Analyze existing area accommodations and facilities.
• Analyze visitor density within 100 miles.
• Analyze recreational facilities within 100 miles.
• Analyze cost and feasibility of the site.
• Analyze the ability of the location to meet Mojave Trails National Monument priority interpretation and education goals.
• Consider natural and cultural features within the proposed location.
• Consider potential safety hazards for the public.
• Analyze accessibility to persons with limited mobility and/or other disabilities.
• Analyze the potential to educate visitors about key resource management and recreation issues.
• Analyze stakeholder feedback and interest for proposed location.
• Conduct feasibility studies of using mobile visitor centers.

10.9 Formal Process for Stakeholder Engagement
To engage the various organized stakeholders in Mojave Trails in an equitable manner that seeks to improve partnerships and protect Monument Objects, BLM should formulate a standard process for collaborating with organized interest groups and tribes and seek opportunities to engage the next generation through youth participation.

Recommendation: Create a standard procedure to interface with various stakeholders while prioritizing management which protects Monument Objects.

Strategies:
• Assess priority areas for the interested stakeholder organization (club, association, NGO, etc.)
• Based on priority areas, assess opportunities to engage youth and to create interpretive materials/panels/signs, educational programs, and activities to conserve/protect/restore Monument Objects.
• Enter into cooperative agreements or memorandums of understanding with organizations to help formalize partnership on creation, funding, and maintenance of interpretive materials/panels/signs and similar materials.
• Develop a toolkit to streamline and standardize the process of engaging stakeholders.

10.10 Partnering and supporting organizations
Management decisions will be made through collaboration, cooperation, and coordination with partnering organizations. These organizations should include but not be limited to local municipalities, NGOs, water district agencies, etc.

The following is a draft list of known local stakeholder organizations that could serve as starting points for community engagement:

1. University of California Riverside
2. California State University San Bernardino
3. Copper Mountain College
4. Barstow Community College
5. Victor Valley College
6. San Bernardino County Museum
7. Mojave Desert Land Trust
8. California Trail Users Commission
9. General Patton Memorial Museum
10. International Dark Skies Association
11. Native American Land Conservancy
12. Mojave Desert Land Trust
13. California Wilderness Coalition
14. Conservation Lands Foundation
15. Route 66 Association
16. Local cities
17. Local chambers of commerce
18. Regional water boards
19. National Park Service
20. California State Parks
21. Hispanic Access Foundation
22. Vet Voice Foundation
23. UC System of Reserves - like Granite Mountains
24. United State Geological Survey
25. U.S. Fish and Wildlife
26. University Nevada Las Vegas
27. Friends of the Mojave Road
28. Does a Monument specific group need to be incorporated?
29. Mojave Desert Resource Conservation District

**Suggested Cooperating Agencies**

1. California Department of Fish and Wildlife
2. Tribal Bands
3. California Department of Water Resources
4. State Lands Commission
5. Local cities
6. Local counties

**11 Proposed Management Zones**

BLM should delineate management zones for the entire Monument that emphasize certain types of management and experiences for the Monument as allocated in the Resource Management Plan (RMP) based on Presidential Proclamation 9395 and the protection and restoration of the Monument Objects and resources. This is a good way of integrating recreation goals and experiences into the RMP, particularly for management plans for the National Conservation Lands, which have a visitor experience element throughout the entire planning area. Management zones are broadly defined landscapes that
describe the type of uses and experiences that will be expected in the specific areas. This allows for other management decisions, such as designated routes for travel, to be based on the criteria for that zone.

There are several examples where BLM has defined these types of management zones in RMPs. One is the Grand Staircase-Escalante National Monument Management Plan. There, BLM described four zones to “provide guidance to help define permitted or excluded activities and any stipulations pertaining to them.”

These zones included Frontcountry, Passage, Outback, and Primitive zones, and they describe the general purpose for visitor experience of each zone but also have management prescriptions, such as visual resource management, infrastructure or vegetation management, based on those purposes. As stated in the Grand Staircase-Escalante Management Plan, “Management zones are used in this Plan to display various management emphases and strategies that will best fulfill the established purposes of the Monument and the overall vision …” These zones, which are delineated by geographic area, provide guidance to help define permitted or excluded activities and any stipulations pertaining to them. In this context, zones are tools that guide decision-making on permitting visitor uses and other activities within the Monument.

Another example is the Craters of the Moon National Monument RMP, which included Frontcountry, Passage, Primitive, and Pristine zones for the entire planning area. (See, Craters RMP at 13-14). The plan describes zones as a useful way to guide decisions to meet desired conditions for each issue addressed in the plan.

Other management zones that BLM has used include titles like “Rustic” and “Wilderness” zones. They can also parallel labels for recreation management zones that are designated in Recreation Management Areas. There is currently no standard way to create management zones for a planning area; they are often based on the needs and uses of that particular area. However, once designated, zones can provide guidance for not only travel and transportation management decisions, but also for management of other resources and management prescriptions, such as visual resource management classifications.

In order to identify management zones for the Monument, we completed an analysis of the Monument Objects and overlaid this with known areas of recreation and areas of interest to delineate the following areas:

- Areas more appropriate for high visitor use (Frontcountry zone),
- Areas for reaching areas of high visitor use (Passage zone),
- Areas targeted to motorized backcountry use (Backcountry zone),
- Areas appropriate for moderate non-motorized use (Primitive zone) and,
- Areas more appropriate for a wilderness experience (Wilderness zone).
Mapping Methodology

In completing this zoning exercise, we also recommend management prescriptions for each zone that represent the purpose of that zone. BLM should designate the following management zones with prescriptions in the descriptions in the Table in Appendix F for Mojave Trails National Monument. Tribal participation may offer Cultural mapping which tribes could initiate and maintain as proprietary rights.

**Frontcountry Zone:** The focal point of the Frontcountry zone is visitation by providing infrastructure and visitor support services to popular day use areas. Access is easy and convenient, and the encounter rate is very high. High maintenance and intervention will be required to accommodate concentrated visitor use. Challenge and adventure are less important compared to other zones. Education and interpretation will focus on the Monument Objects of interest and resources or for public safety. NP

**Passage Zone:** The purpose of the Passage zone is to provide secondary travel routes which receive use as throughways and recreation designations where there is a need for recreational and passenger vehicles to travel through to access other zones, trail heads, or for administrative purposes. Rudimentary facilities will be provided as necessary to protect resources and educate visitors about Monument Objects and resources or for public safety. This may include parking, trailheads, primitive campsites, and information kiosks or signs.
**Backcountry Zone:** The Backcountry zone provides a less developed and self-directed visitor experience while accommodating motorized and non-motorized access on designated routes. Facilities are rare and provided only where essential for Monument object and resource protection. Administrative control will be at a moderate level, with trail and route markers and designated parking/staging areas. Density of routes may be medium to high in select areas to form loop experiences. Other non-motorized routes may exist in these zones at low densities. There will be a low to moderate chance for encounters with other people.

**Primitive Zone:** The purpose of the Primitive zone is to provide undeveloped, self-directed areas that serve quiet non-motorized recreation in a primitive setting. These areas generally have sensitive Monument Objects and resources; therefore, non-motorized trails in these areas will have a low to medium density. Trails will consist of low-standard multiuse trails with little or no maintenance. There will be a low chance for encounters with other people.

**Wilderness Zone:** The Wilderness zone will provide areas of naturalness, outstanding opportunities for solitude or primitive and unconfined recreation. This zone encompasses Wilderness and Wilderness Study Areas and other highly sensitive ecological areas containing dense Monument Objects and resources where there will be no motorized routes or travel permitted. Evidence of administrative control should be little to none. Non-motorized routes are generally undeveloped, and areas are generally accessed by foot or horseback.

**Summary of Alternative:** BLM should designate the management zones as proposed in this alternative to help guide management decisions and prescriptions in the RMP based on the protection of Monument Objects and resources. BLM should release preliminary maps of management zones for public comment prior to issuing the Draft RMP. The Table below provides a summary of objectives for management of each zone.

11.1 **Monument Object Management Recommendations**

The Presidential Proclamation that created Mojave Trails National Monument listed a variety of objects which are summarized here in Appendix B. Mojave Trails Objects Chart. The Monument was proclaimed to protect these Monument Objects and provide for their proper care and management. The following recommendations are made to provide for the proper care and management of the objects.

11.1.1 **Physical Environment**

**Sand Dunes and Sand Dune Transport Corridors**

About 48% of the entire area of the Mojave Desert has a less than 5% slope, and 8.3% has a less than 1% slope (Flanagan, 2017). For the lowest slope category, deposits underlying about 98% of the area are either mixed aeolian alluvial origin or fine-grained alluvial deposits and thus are susceptible to aeolian dust and sand transport, especially after soil disturbance (Flanagan, 2017).

The DRECP identifies 23 dry lakes within the planning area as important sand sources. Among them are Cadiz and Bristol Lakes in the Mojave Trails National Monument, which are important sources for sand transport corridors and dune systems (DRECP, 2016). Strong winds create great rivers of airborne sand
that flow across the Mojave Desert along predictable corridors. And it is this erosion, transport, and deposition of wind-blown sediments that shape the desert landscape.

Although sand dunes themselves make up a relatively small portion of the DRECP planning area, they still account for substantial acreage—more than 700,000 acres in total (DRECP, 2016). Dune systems form where winds are consistently strong enough to lift fine grains of sand just above the ground, especially where there is little or no vegetation to stabilize loose soil.

The Cadiz Dunes Wilderness contains a total of 19,935 acres and lies within Mojave Trails National Monument. These dunes are home to the Mojave fringe-toed lizard, which needs fine wind-blown sand for habitat to escape from extreme temperatures by burying or burrowing in the dunes. The dunes are sensitive to off-highway vehicle use and other types of disturbance. The shifting sands can be as much as 100 feet in depth, and a wide variety of unique plants and wildlife have evolved to call this dynamic landscape home. The area’s wildflower displays and the play of light on the ever-changing dunes makes it popular with photographers.

**Recommendations:** Protect and preserve sand transport corridors and dune systems, their unique processes, habitat, and species that call them home.

**Strategies:**

- Develop partnerships with other agencies, universities, and organizations to fully study sand transport processes and dune ecosystems within the newly established Mojave Trails National Monument.
- Protect dune ecosystems against illegal OHV incursions through education, monitoring, and law enforcement efforts.
- Create and implement strong wilderness character monitoring protocols for the Cadiz Dunes Wilderness, and monitor visitor use and impacts in this spectacular resource.
- Collaborate with air quality districts to install air quality monitoring devices throughout the monument and develop a robust air quality monitoring system with data made available to the public.
- Inventory sand source areas and ensure no management actions are taken that would harden or stabilize these sources.
11.1.1.2 Volcanoes and Lava Tubes

Mojave Trails National Monument has numerous significant geologic formations, and seismologists have studied this area for insight into faulting, tectonics, and magmatism. A number of young volcanoes and their associated lava flows in the area have been heavily studied by volcanologists.

Amboy Crater, a cinder cone that overlooks 70 square miles of basalt lava plains and which last erupted 10,000 years ago, was designated as a National Natural Landmark in 1973 (Bureau of Land Management, 2016). The Pisgah Lava Flows is a vast network of lava tubes that constitutes southern California's highest density of caves and is used by both speleologists and recreational cavers. The area's terrain and geology are home to biologically unique plants and animals that have adapted to living in lava caves. When it was active, the Pisgah Lava Flows also produced volcanic bombs, masses of molten rock (tephra) larger than 2.5 inches in diameter, formed when a volcano ejects viscous fragments of lava during an eruption. They cool into solid fragments before they reach the ground. The Pisgah Lava Flows have provided a surrogate for lunar and Martian landscapes, and many of the robotic and imaging technologies used to better understand volcanism and aeolian processes have been developed and tested in the Mojave Trails area.
**Recommendation:** Preserve Mojave Trails National Monument’s stunning volcanoes and lava tubes, such as Amboy Crater and the Pisgah Lava Flows, and protect biologically unique plants and animals that have adapted to these environments.

**Strategies:**

- Develop management policies that protect Amboy Crater, the Pisgah Lava Flows, and their associated unique plant and animal assemblages from the impacts of recreational use, vandalism, and climate change.
- Create interpretive materials that further highlight these unique areas and their fragility through online media, interpretive signs, apps, or other mediums.
- Inventory and monitor plant and animal species that reside in these unique geologic formations.
- Promote partnerships that lead to research, further understanding, and protection for the geology and plants and animals of Amboy Crater and the Pisgah Lava Flows.

11.1.1.3 *Groundwater and Seeps and Springs*
While seemingly dry and barren, the proposed Mojave Trails National Monument bursts with life around the region’s many desert springs. These springs provide critical water resources for wildlife, particularly for important mammals such as desert bighorn sheep and mountain lions. These springs are also of historical importance, as human settlement has concentrated near them for millennia, from the Chemehuevi and Mojave Indians to early Spanish explorers to travelers on Route 66.

Afton Canyon is one of only a small number of places where the Mojave River reaches the surface on its long journey from the San Bernardino Mountains in the southwest to Devil’s Playground in the Mojave National Preserve. This precious water source attracts the elusive desert bighorn sheep and a long list of migratory birds. Human habitation in the canyon extends back an estimated 8,000 years.

Afton Canyon is known for its magnificently colored rock formations carved by the draining of Lake Manix about 15,000 years ago and the continued action of the Mojave River. Underlying the entirety of the proposed monument, and feeding these springs, is a series of rather miraculous desert aquifers. With very little recharge in the form of precipitation, these aquifers primarily contain “fossil water”: water which fell as precipitation during the last ice age, a much wetter period. Even slight perturbations in the aquifer system can have catastrophic effects on spring discharge.

Another important ecological facet of these aquifers is the groundwater-dependent vegetation which grows around springs, in washes, and near the lake beds of the region. Groundwater-dependent vegetation relies on deep taproots which pull water up from the relatively shallow aquifers in the valley bottoms. Honey mesquite, desert willow, palo verde, smoke tree, cat’s claw acacia and other phreatophytic plants thrive in these areas and provide important habitat for nesting and breeding migratory birds.

In an area as arid as the central Mojave Desert, desert springs are the lifeblood of the ecosystem. Protecting these critical wetland ecosystems will assure the continued viability of the species which rely on them and will maintain the delightful experience for visitors of encountering lush green riparian zones.

**Recommendation:** Protect ground and surface water in Mojave Trails National Monument.

**Strategies:**

- Increase the understanding of desert hydrogeology to develop a scientifically accurate baseline analysis of ground and surface water systems in Mojave Trails National Monument.
- Prioritize the protection of ground and surface water resources by incorporating the latest scientific studies and analysis into all management decisions that could impact desert aquifers and surface waters.
- Develop a robust management and monitoring plan for groundwater and surface water resources focused on protecting and enhancing these water sources for plant and animal
life as well as to support the needs of the small communities within the monument.

- Prioritize spring and riparian habitat protection and restoration as a principal monument management action.
- Assess the impacts of water diversions and human uses on natural water sources and desert habitats, applying reasonable limitations on extractions and best management practices.
- Encourage partnerships with universities, research institutions, non-profit organizations, and agencies to study and monitor groundwater and seeps and springs.

11.1.1.4 Effects of Climate Change

Climate change and drought are important long-term threats endangering the Mojave Desert. Even small changes in climatic conditions may have drastic impacts on the plants and animals, leading to disastrous effects. Wildlife depends on consistent and healthy habitats, which depend on non-biological factors, such as temperature and humidity, and biological factors, such as competition and predation. The germination and reproduction of desert species depends on the consistent availability of resources, including annual rainfall. Predictions for the Mojave Desert suggest an increase of annual mean temperatures by 3-4 degrees Celsius and a decrease in annual precipitation of 5-15% (USFWS, 2014). Higher temperatures and less water will affect the sustainability of plants and animal species living in the area. Moderate predictions of the effects of climate change on the desert tortoise suggest suitable habitat will be reduced by nearly 66% (Barrows, 2011). As the climate changes and alters precipitation patterns, the impacts to sensitive species in the Mojave Desert will likely be drastic to wildlife survival and natural resources.

Recommendation: Prioritize monument related climate change research and management actions.

Strategies:

- Develop baseline data and monitoring for wildlife, water resources, ecosystem processes, and invasive species that can be used to analyze trends related to a changing climate.
- Partner with and prioritize climate change research within the monument conducted by research institutions and universities.
- Prioritize the protection of wildlife corridors, which will serve as conduits for animals and plants seeking suitable habitat in a changing climate.
- Prioritize the restoration of sensitive habitats that will buffer them from the worst impacts of climate change.
- Develop a suite of management actions that will enhance climate adaptation for species, habitats, and ecosystem processes within the newly established monument.
- Study and identify refugia for iconic desert wildlife and keystone species that reside in the monument.
11.1.1.5 Ecological Connectivity and Land Management Practices

A large portion of Proclamation 9395 is spent describing the various wildlife resources, their habitats, and ecological connectivity. As such, BLM should identify and protect wildlife corridors in the Monument to ensure that usable habitat and migration pathways will remain.

Reduction in habitat connectivity through increased fragmentation—due to roads, residential and commercial development, energy development, and OHV use—substantially decreases the amount of ecologically intact core habitat available for many wildlife species.

Ecologists have long recognized that the loss of core habitat and habitat connectivity poses the greatest threat to species persistence and overall biodiversity (Wilcove et al., 1998).

Secretarial Order 3308 states that "[t]he NLCS components shall be managed as an integral part of the larger landscape, in collaboration with the neighboring landowners and surrounding communities, to maintain biodiversity, and promote ecological connectivity and resilience in the face of climate change."

In addition, the 15-Year Strategy for the National Conservation Lands includes the following guidance:

"Use large-scale assessments, such as BLM's REAs, to identify areas where NLCS units are important for resource protection and conservation within a broader landscape context; such as providing for large-scale wildlife corridors and water-dependent resources (BLM, 2010)."

48
Maintain or increase habitat connectivity with other important habitat areas to provide for sustainable populations of native species.

Utilize existing large-scale assessments and maps, such as BLM’s REAs, wildlife corridor mapping effort, wilderness inventories, and other federal and state agency analyses to inform collaborative planning and land acquisition efforts.” (BLM, 2010)

BLM plans for the management of its lands at the landscape level through RMPs, which gives the agency the ability to designate and protect naturally occurring wildlife corridors. The BLM has the legal authority to implement protective management of wildlife corridors, and the legal obligation to address threats to wildlife and wildlife habitat as stewards of the western public lands. Protecting wildlife corridors through administrative designations is consistent with the BLM’s obligations under the Monument’s Proclamation, FLPMA, 42 U.S.C. § 1701, et seq., and NEPA, 42 U.S.C. § 4321, et seq.

Secretarial Order (SO) 3362, issued by then-Interior Secretary Ryan Zinke on February 9, 2018, represents the Department of the Interior’s most recent attempt to address large landscape connectivity and wildlife corridor protection. SO 3362 does the following:

- Acknowledges and directs federal agencies to take a leadership role on the issue. The political boundaries of states, private lands, and federal public lands cut through wildlife corridors, and recognition of the need for national leadership to fully protect and manage corridors is a positive step.
- Directs agencies to review “data regarding wildlife migrations early in the planning process.” This information is critical to landscape-scale planning and management. Incorporating this information early and often is the best way to ensure that wildlife corridor management isn’t an afterthought but is an integral component of plan development.
- Directs the U.S. Geological Survey to develop maps and tools to track movement, land use, and effectiveness of current habitat treatments. These important steps will help develop the body of science that will be important to understand the effectiveness of conservation actions.
- Includes direction for site-specific activities, including fencing modification, “avoiding development in the most crucial winter range or migration corridors,” and “minimizing development that would fragment winter range and primary migration corridors.” These steps, if undertaken consistently and appropriately, could significantly improve habitat function and protection across the West, benefiting other species as well.

**Recommendation:** Identify, maintain, and enhance ecological connectivity within and outside the Monument.

**Strategies:**

- Through GIS analysis and expert opinion, identify likely key movement corridors for various wildlife species and subsequently field verify their use through a series of wildlife camera trapping events over several years;
- Develop a management strategy that will ensure retention of the functionality of the identified wildlife corridors both within the monument as well as those leading outside the monument to other conserved lands;
Identify movement corridors that have been compromised by previous development (e.g., Interstate 40) and work with partner agencies re-establish those corridors;

Zoning: Wilderness, Primitive, Backcountry.

11.1.1.6 Carbon Sequestration

The global community is beginning to realize that deserts, in addition to forests, arctic tundra, and other ecosystems, may represent a larger carbon sink than previously thought (Lal, 2003). Recently, the rate of carbon sequestration was shown to increase as the level of atmospheric carbon dioxide (CO2) increases, which means that deserts like the Mojave could play a major role in the absorption of increased atmospheric CO2 resulting from current emissions (Evans et al, 2014). Furthermore, once the carbon enters the arid-land soil, it is stored deeply and often not released for quite some time. California deserts also have vast stores of carbon (C) stored as inorganic caliche, or CaCO3, of up to 8kg C/m2 (Schlesinger, 1985). These large stores become fragmented and exposed upon disturbance. Therefore, protecting California desert native vegetation types and riparian woodlands that have deep roots is important to preserve buried inorganic soil carbon stocks and carbon sequestration capacity (Allen et al, 2013).

It is also important to note that a significant amount of carbon has been released into the atmosphere due to land use practices that lead to desertification. Carbon is being cycled in complex ways and inorganic carbon may be lost from areas stripped of desert vegetation. The estimates of carbon sequestration in the Mojave Desert demonstrate the importance of keeping large blocks of it intact. Realization of this potential, however, requires a vigorous and coordinated effort towards protection of intact desert lands and the soils and plants that sequester carbon. The Monument can support this effort by protecting intact desert lands in perpetuity. This is especially significant in light of the need to implement strategies to address climate change.

Special attention should be given to Mojave Trails National Monument’s value as a landscape that sequesters carbon. Scientific research has recently documented the fact that arid ecosystems are significant and previously unrecognized carbon sinks for atmospheric CO2, and a recent National Park Service (NPS) study titled “Terrestrial Carbon Sequestration in National Parks” notes that desert ecosystems have the ability to store much more carbon dioxide that was previously thought. The NPS study, which is based on Evans et al., evaluated NPS units’ ability to sequester carbon, found that the Mojave National Preserve and Death Valley National Park ranked among the top ten NPS units for sequestering carbon (U.S. DOI, 2014). It is important to consider that the newly created Mojave Trails National Monument, at 1.6 million acres, is the same size as the Mojave National Preserve. The study shows that Mojave National Preserve sequesters 1 million tons of CO2/hectare per year, and it is, therefore, reasonable to assume that Mojave Trails National Monument sequesters a similar amount of CO2 (U.S DOI, 2014). Also noteworthy is that the social and economic value of carbon sequestration in the Mojave National Preserve is equal to more than $25 million per year.

**Recommendation:** Maintain and restore intact landscapes, soils, and plants in Mojave Trails National Monument to support carbon sequestration.

**Strategies:**
• Identify intact desert lands using The Mojave Desert Ecoregional Study by The Nature Conservancy and ensure they are zoned for Wilderness, Primitive, or Backcountry zones to maintain ecological intactness.
• Restore existing disturbances on public lands in the National Monument to restore the land’s natural ability to sequester atmospheric carbon.
• Support continuing research on carbon sequestration to better understand and quantify how arid lands interact with atmospheric carbon.
• Seek out and form partnerships with researchers studying carbon sequestration in arid lands.
• Utilizing existing USGS and other agency data to develop a study of carbon sequestration for the BLM’s National Conservation Lands, wilderness areas, and open lands. The study should also determine a social/economic valuation of these areas related to their ability to store atmospheric CO2.

11.1.1.7 Paleontological Resources

Fossils and Fossil Assemblages

Paleontological resources can be found throughout Mojave Trails National Monument. The Cady Mountains contain important fossil fauna assemblages dating to the Miocene Period. The Marble Mountain Fossil Bed area is over 550 million years old and contains one of the classic Cambrian trilobite fossil sites in the Western United States. The area, which includes the Trilobite Wilderness, is especially rich in the fossils of trilobites, extinct arthropods that are similar in appearance to today’s horseshoe crabs. It also contains the fossilized remains of brachiopods, mollusks, echinoderms, and algal bodies that are of great interest to paleontologists.

The southern Bristol Mountains contain Tertiary fossils such as camel tracks, invertebrates, and numerous plants; this fossil history has also been used to understand the climate history of the Mojave Desert.

Recommendation: Identify paleontological resources to establish baseline conditions; promote research; and establish management guidelines that protect these resources while honoring past uses.

Strategies:

• Encourage partnerships with research institutions and universities to accurately document and catalog baseline conditions for paleontological resources.
• Review existing laws related to fossil protection and collection, as well as management regulations from analogous paleontological rich areas throughout the United States.
• Establish management guidelines that promote research and protect resources, while honoring past uses of areas such as the Marble Mountains.

11.1.2 Archaeological, Historical, and Cultural Resources

Native American activities have occurred within Mojave Trails National Monument, spanning thousands of years and resulting in numerous significant archaeological resources including Native American village sites and culturally significant traditional areas. In more recent times, the Chemehuevi used the Mojave
Trail as their main trading route. Over one hundred archaeological sites were identified in the area, some containing remnants of ranching, mining, and railroad activities. The Mojave Trail was later used by explorers, such as Father Francisco Garcés, who sought to create Missions in California, and mountain man Jedediah Smith, a fur trapper who traversed the Mojave Trail along Father Garcés’s route. As traffic grew along the trail due to the creation of Missions, the use of the Army and increased trading during the Westward Expansion, much of the Mojave Trail was turned into a wagon road and subsequently used by automobiles and is currently known as the Mojave Road.

11.1.2.1 Cultural/Tribal Resource Areas

Cultural Landscapes

Mojave Trails National Monument includes a variety of cultural values, including sacred sites, trails, artifacts, and natural resources important for traditional practices. Objects listed in the Proclamation creating Mojave Trails National Monument that are landscape-scale include the Salt Song Trail, the Mojave Indian Trail, and various seeps and springs.

Recommendations and Strategies

**Recommendation:** Engage Tribal bands and Tribal community members in cultural resource management and monitoring.

**Strategy:**
- See Section above: “Potential Avenues for Tribal Engagement.”

**Recommendation:** Identify, preserve, and protect archaeological resources.

**Strategy:**
- Allocate areas of known archaeological importance to Backcountry or Primitive zoning to the maximum extent practicable to protect archaeological resources values in accordance with existing laws and policies.
- Inventory known cultural resource values to facilitate proper care and management of the Monument Objects.
- Develop management practices that also contribute to the preservation of cultural resources, such as the removal of non-native plants from sensitive cultural areas to protect culturally significant vegetation.
- Identify areas of sensitive cultural significance for Native American access.

**Recommendation:** Co-manage cultural resources on a landscape level.

**Strategies:**
- Preserve the existing character of the cultural and physical landscape, particularly in the areas associated with the Salt Song Trail and the Mojave Indian Trail.
- In close coordination with Tribes, identify and manage for cultural heritage values associated with cultural landscapes.

**Recommendation:** Accommodate traditional uses within Mojave Trails National Monument.
Strategies:

- Develop policies in close coordination with Tribes which specify how traditional uses will be accommodated within the Mojave Trails National Monument for traditional cultural practices.

Recommendation: Promote awareness of archaeological and cultural resource values in Mojave Trails National Monument

Strategies:

- In close coordination with Tribes and Tribal nonprofits, create visitor improvements and interpretive materials that appropriately share information with visitor such as signage, kiosks, brochures, and multimedia materials.
- Encourage cooperative projects for stewardship, interpretation, and management of Monument Objects in close coordination with Tribal bands and entities.

11.1.2.2 The Old Spanish Trail

The Old Spanish National Historic Trail winds its way through Arizona, California, Colorado, Nevada, New Mexico, and Utah. In 1829 Antonio Armijo left Abiquiu, New Mexico for California with men and pack mules and cobbled together routes of travel established by others that linked these two Departments of the Republic of Mexico.

The Old Spanish National Historic Trail Comprehensive Administrative Strategy states the following:

“Quite often, the physical evidence of the Old Spanish Trail has been obliterated or obscured by erosion, sedimentation, animals, and other natural factors, later use such as urban developments, agricultural activities, or other man-made changes. However, a remarkable number of landscape elements still survive in good condition and can provide visitors an excellent opportunity to experience the landscape of the trail as it was during the first half of the 19th century. In some areas, disagreements exist as to the specific routes of travel because investigations have often been inconclusive in identifying the exact routes the traders followed” (BLM, 2017).

The Comprehensive Administrative Strategy identifies 43 high-potential route segments that meet the criteria established in the National Trails System Act and include Afton Canyon within the Mojave Trails National Monument (BLM, 2017). The Old Spanish Trail was officially designated by Congress on December 4, 2002, and the entire trail covers 887 miles.

Recommendation: Encourage research focused on the Old Spanish Trail through the California desert to verify its presence within the newly created Mojave Trails National Monument.

Recommendation: Preserve the Old Spanish Trail while increasing public awareness of the importance the Trail played in the settlement of the western United States.

Strategies:

- Adopt the management recommendations from the Old Spanish National Historic Trail Comprehensive Administrative Strategy.
• Work with the NPS, Old Spanish Trail Association, Native American Tribes, universities, and other research institutions to determine Armijo’s route and develop interpretive messaging and materials that can increase the public’s awareness of the important role the Old Spanish Trail played in the settlement of the western United States.

• Collaborate with the NPS, Old Spanish Trail Association, Native American Tribes, universities, and other research institutions to identify, inventory, and monitor archaeological sites related to the Old Spanish Trail within the boundaries of Mojave Trails National Monument.

• Develop a plan to celebrate the 20th anniversary of the Congressional designation of the Old Spanish Trail, which would include collaboration with agencies, NGOs, Tribes, and communities throughout the desert region.

• Develop management guidelines for off road vehicle use and other forms of recreation that facilitate preservation of this important historical resource.
Certified in 1926, U.S National Highway 66, known as Route 66, runs 2,440 miles from Chicago to Los Angeles (Wilcox, 2015). Perhaps the most famous road in the world, Route 66 has clubs and associations in many countries across the globe. Mojave Trails National Monument contains an iconic and well-preserved section of Route 66 between Needles and Barstow. In fact, it holds the longest undeveloped stretch of Route 66 and is the best place to experience its significance in American history. As Route 66 travels through the Mojave Desert, it passes by numerous historic and cultural treasures. Part of Route 66 uses the Old National Highway, the first attempt at a national highway. The Old National Highway was built along the Santa Fe railroad line into the Mojave Desert; Route 66 existed along the same route.

From the prosperity of the Roaring Twenties to the economic collapse of the Great Depression in the 1930s, Route 66 became a national icon, emblematic of the American Dream. During a time of anguish and suffocation, this highway became a symbol of freedom, representing the idea that one could live...
life where one wanted, and that an individual wasn’t doomed to stay in the same city or town his or her entire life. Route 66 became the idealized American escape. In 1939, John Steinbeck wrote fondly of Route 66 in *The Grapes of Wrath*, “66 is the mother road, the road of flight” (p.108).

Steinbeck wasn’t the only one to help immortalize Route 66. As Route 66 became a cultural treasure, up sprang restaurants, attractions, souvenir shops, auto camps, and landmarks—everything needed for a trip to “see the sights.” In 1949, Bobby Troup wrote the song “Get Your Kicks on Route 66” after traveling the route, exemplifying why Route 66 wasn’t just a road—it was a destination unto itself.

In 1956, President Dwight Eisenhower signed the National Interstate and Defense Highway Act, which led to the slow cultural death of Route 66, as Interstate 40 was built and became the main throughway. The creation of Interstate 40 had a significant impact on the section of Route 66 running through the Monument. The attractions along Route 66, beloved as they were, struggled against the efficiency and convenience of fast continental travel, skirting city limits, and maintaining high speed. As traffic bypassed Route 66, many of the local towns were ultimately abandoned and overtaken by the desert, turning into ghost towns and leaving crumbling foundations. In 1985, the route was decommissioned, leaving only memories and remnants of the once famous road.

By driving east to west along the route, decayed evidence of once booming towns can still be found, all with the same story of desertion. The first town, Goffs, outside of Needles, contains little more than an old general store and a schoolhouse, renovated into a museum by the Mojave Desert Heritage and Cultural Association. Further along the route are the remnants of Fenner, which could be missed by blinking, and Essex, an oasis that provided free water to Route 66 travelers, which now looks mostly abandoned.

Halfway along the section of Route 66 lies Chambless, which began as a railroad station for the Santa Fe Railway, morphed into a popular motorist town, and disappeared in 1973. West of Chambless are a handful of dilapidated buildings called Danby and Bagdad, at one time home to roughly 200 people, but now virtually wiped clean from the map save for an old tree. Siberia lasted until 2001 before all traces were lost to the desert. The last town along Route 66 was Ludlow, a once booming town at a railhead, then a tourist spot for Route 66 travelers, and finally a collection of empty buildings, which lent its name to a new development in the 1970s.

The quiet section of road around Amboy, west of Chambless, used to be a major attraction along Route 66. Amboy is home to both the iconic Roy’s Motel and Cafe and Amboy Crater, a significant natural feature. Roy’s Motel and Cafe was a staple of Route 66 travel, the star in a bright town along Route 66. Amboy Crater is a volcanic cinder cone which rises above the desert on the town outskirts and remains a prominent research area for geologists and ecologists. Behind the 250-foot high crater walls are two symmetrical dry lava lakes, one which breached the western edge and spewed hot lava over 24 square miles.

Resting in the shadow of Amboy Crater and along Route 66 is Bristol Dry Lake, a natural deposit of 60 million tons of salt. The lake remains a repository for mountain storms washing down into the valley and holds standing water after heavy rain in the winter. The rest of the year, visitors can walk
across the surface of the lake and pick up crystals of salt formed by evaporating rainwater.

**Recommendation:** Partner with communities, nonprofit organizations, and local, state, and federal agencies to restore and preserve segments of Historic Route 66, and educate the public about the historic, cultural, and economic value of the historic route.

**Strategies:**

- Develop partnerships with local communities, nonprofit organizations, and local, state, and federal agencies to create plans to preserve and restore historic structures and sites along Historic Route 66.
- Prioritize Historic Route 66 submissions to the National Historic Register.
- Build partnerships with universities and research institutions, such as California State University San Bernardino, California State University Long Beach, and University of California Riverside, to leverage funds and resources to restore and protect historic places along Historic Route 66.
- Develop a comprehensive education and interpretive plan to teach the public about the historic, cultural, and economic value of Historic Route 66.
- Protect the visual resources along the Route 66 Corridor from Needles to Barstow to preserve the existing character of the landscape, given the aesthetic and historical significance of the corridor.
- Adopt recommendations of the Route 66 Corridor Study.
- When BLM assigns a Visual Resource Management (VRM) Classification(s) to the Route 66 corridor, BLM should keep in mind that the viewshed along this historic route is one of the key factors, if not the key factor, that this area receives visitors from all over the world each year.
11.1.2.4 Desert Training Center

The Iron Mountain Divisional Camp is located at the southern edge of the Iron Mountains, east of the Cadiz Valley and north of current-day State Highway 62. It served as a regional training headquarters and once held an impressive terrain model that measured 200 feet x 75 feet, depicting the entire training area (Dighera, 2015). It was one of the key places, no doubt, where General Patton worked to refine the aggressive tactics that would later benefit Allied armed forces in North Africa, Sicily, the Italian mainland, and northwestern Europe. Camp Iron Mountain is the most well-known and best-preserved of the Patton military camps. Despite harsh weather conditions and vandalism to many of
the camp’s original features, visitors to the camp can readily see two rock altars that were used for religious services at the camp, rock mosaics, remains of the large terrain model, and rock alignments marking pathways, parking areas, a flagpole circle, and other areas (BLM, 2013). Even in the late 1970s, artifacts could still be found in large numbers.

In 1973, portions of Camp Iron Mountain were recognized (BLM, 2013), and in 1980, BLM designated the area as an ACEC to protect its historical values (BLM, 2013). The BLM has made a concerted effort to preserve the remaining features, but lack of additional protection has left the camps vulnerable to vandalism. Much of the proposed Mojave Trails National Monument, especially the Cadiz Valley, contains scattered reminders of this military training in the form of ammunition belts, spent cartridges, practice tank rounds, and ration containers. Even the distinctive tracks of the Sherman tank can still be seen on some areas of hardpan soil.

**Recommendation:** Submit proposals as appropriate for National Register of Historic Places and develop partnerships to maximize historic preservation, as well as education and interpretation.

**Strategies:**

- Continue to work with the Department of Defense, as well as other federal, state and local agencies to develop and submit proposals for putting the Desert Training Center and specific sites on the National Register of Historic Places.
- Collaborate with the Department of Defense, as well as other federal, state, and local agencies to document and protect Desert Training Center archaeological and historic sites.
- Develop a monitoring plan to periodically assess the status of the Desert Training Center’s archaeological and historic sites. Partner with local universities and/or individual university students who would be interested in assisting with inventories of the camps and/or transcribing and scanning the handwritten letters from soldiers that are in BLM’s possession.
- Develop partnerships to design an educational and interpretation plan that highlights the important role of the Mojave Desert in military training and preparedness.
- Refer to and implement the recommendations that are highlighted for the Desert Training Center in the DRECP.
- BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values, while avoiding impacts to Monument Objects.
- BLM should also protect the nationally significant values for which some of these camps were included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects.
11.1.3 Biological Environment

11.1.3.1 Vegetation

**Rare Plant Documentation and Management**

**Recommendation:** Document populations of rare plants and manage them in perpetuity.

**Strategies:**

- Accurately map populations of rare plants that are ranked by the California Native Plant Society (CNPS).
- Monitor rare plant populations in order to detect long-term population trends. Following monitoring determine the factors that threaten their long-term persistence. Manage these same populations to ameliorate these identified threats.
- Survey areas with little history of botanical exploration in order to locate new rare plant populations.
• Search for and update information on occurrences of rare plants that are mapped in the California Natural Diversity Database, but are listed as historical. Historical occurrences are those that have not been updated in more than 20 years.
• In the light of global climate change, ensure that the environmental conditions and ecological processes necessary for future changes in the geographic ranges of rare plant populations are conserved. Specifically, ensure that habitat connectivity and the plant dispersal processes (e.g., the movement of animal species that transport seeds) are maintained.
• Identify populations of rare plants that may have become extirpated due to human actions. Initiate actions to restore extirpated plant populations.
• Promote and facilitate citizen science efforts (e.g., the CNPS Rare Plant Treasure Hunt to discover, document, and monitor rare plant populations.
• Promote recreation and management actions that are consistent with rare plant conservation. Prohibit recreation and management actions that are not consistent with rare plant conservation.
• Where appropriate, provide interpretation (e.g. interpretive signs, brochures) about rare plant resources.

Vegetation Mapping and Conservation of Rare Vegetation Types

Recommendations: Maintain a detailed catalog of vegetation resources and manage for the conservation of rare vegetation types.

Strategies:
• Produce a vegetation map consistent with the National Vegetation Classification System to the “association” level.
• Identify and map rare vegetation types that need conservation actions and proactive management.
• Identify rare vegetation types (aka “sensitive natural communities”) that are essential for maintaining wildlife populations (e.g., microphyll woodlands). Prioritize these habitats for conservation and management actions.
• Manage the environmental conditions (e.g., hydrologic function, aeolian sand transport) and ecological processes necessary for maintaining rare vegetation resources.
• Promote recreation and management actions that are consistent with the conservation of stands of rare vegetation. Prohibit recreation and management actions that are not consistent with the conservation of stands of rare vegetation.
• Where appropriate, provide interpretation to the public (e.g., interpretive signs, brochures) about rare vegetation resources.

Invasive Plant Management

Recommendation: Survey for, monitor, and manage populations of invasive plants.
Strategies:

- Identify and map existing populations of invasive plants that are included in the California Invasive Plant Council Inventory.
- Select populations of invasive plants that are high priority for management or eradication.
- Initiate an active effort to survey for new populations of invasive plants.
- Implement an early detection rapid response program to eradicate newly introduced invasive species.
- Produce interpretive materials that promote citizen scientist surveys to document and eradicate invasive plant populations.
- Prohibit recreation and management actions that promote the introduction and spread of invasive plants.

Celebrate and Manage for Seasonal Wildflower Displays

Recommendation: Map, promote, and manage areas with seasonal displays of annual wildflowers.

Strategies:

- Identify and map areas that host displays of annual wildflowers in years with adequate precipitation.
- Identify threats to these wildflower displays (e.g., invasive species) and manage for identified threats.
- Ensure that the ecological processes and environmental conditions responsible for maintaining wildflower displays are managed in perpetuity.
- Promote the appropriate public enjoyment of wildflowers including photography, observation, and exploration. Identify and prohibit actions that adversely affect wildflower populations.
- Where appropriate, provide interpretation (e.g., interpretive signs, brochures) about wildflower resources.

Promote Botanical Research

Recommendation: Promote botanical exploration and facilitate research relevant to maintaining biodiversity.

Strategies:

- Promote and facilitate the publication of a flora of the monument, which documents the area’s botanical diversity with specimens deposited in natural history collections (i.e., herbaria).
- Identify areas with limited history of botanical exploration and promote their exploration.
- Identify sensitive species and habitats that need research in order to inform management actions.
- Establish active relationships with partners in nonprofit organizations and at academic institutions interested in conducting research in the monument.
- Promote and facilitate botanical research.
**Jessica M. Orozco Memorial Trail**

**Recommendation:** Establish a Jessica M. Orozco Memorial trail.

**Strategies:**

- Identify a location for and establish an interpretive hiking trail in honor of botanist Jessica M. Orozco.
- Furnish the trail with appropriate interpretive materials (e.g., signs, brochures) that honor Jessica while providing information on botanical and ethnobiological resources.

**11.1.3.2 Migratory & Resident Birds**

Birds are integral to our lives and serve as a critical component of the Mojave Trails National Monument ecosystem. Consider that in 2016 more than 45 million Americans observed birds around the home and on trips (USFWS, 2016), according to National Survey of Fishing, Hunting and Wildlife-Associated Recreation. Simply put, birds add sound, color, and joy to our lives.

Recognized as one of the most important indicators of environmental functioning health, birds provide insect and rodent control, plant pollination, and seed dispersal. These functions, in turn, provide a myriad of tangible economic, environmental, and recreational benefits to people.

Neotropical migratory species are by far the most common avian species to travel through and/or nest within the Mojave Trails National Monument. This includes the migratory least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), Swainson's hawk (*Buteo swainsoni*), and western yellow-billed cuckoo (*Coccyzus americanus*)—all of which are dependent upon rare desert waters and streamside habitat, serve as indicators of functional habitat health, and are imperiled in the West.

Mojave Trails is also home to a number of spectacular birds of prey—from the diminutive, highly social Western burrowing owl (*Athene cunicularia hypugaea*) and solitary American kestrel (*Falco sparverius*) to the soaring red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), and golden eagle (*Aquila chrysaetos*). Most of the latter species nest and are migratory within the Monument to some extent, and a number of additional resident birds, such as the iconic Bendire’s thrasher (*Toxostoma bendirei*), Crissal thrasher (*Toxostoma crissale*), and Le Conte’s thrasher (*Toxostoma lecontei*) are also known from the Monument.

**Recommendation:** The BLM should establish baseline bird population habitat values via field surveys for the least Bell’s vireo, southwestern willow flycatcher, and Western yellow-billed cuckoo. Develop management policies to protect and recover state and federally listed avian species according to established recovery plans, where completed. Create a robust program to monitor authorized human uses and avian population trends, with an express objective of protecting and improving breeding/migratory bird habitat and minimizing human visitation use impact.

**Recommendation:** Maintain and enhance Monument habitat protection and facilitate appropriate land management to enhance wildlife habitat linkages benefitting neotropical migratory birds within the Monument.
Strategies:

- Ensure that applicable agency staff regularly schedule and monitor authorized human uses within the Monument and institute corrective actions in a timely fashion upon discovery to ensure Monument Objects are not unduly impacted.
- Collaborate with the United States Fish and Wildlife Service, United States Geological Survey (USGS), California Department of Fish and Wildlife (CDFW), Point Blue Conservation Science (formerly Point Reyes Bird Observatory), San Bernardino County Museum, Audubon California, and other research entities to conduct spring and fall bird surveys. Identify potential and occupied habitat supporting Least Bell’s vireo, southwestern willow flycatcher, and yellow-billed cuckoo in both migration and breeding seasons.
- Collaborate with the U.S. Fish and Wildlife Service (USFWS), CDFW, Point Blue Conservation Science, San Bernardino County Museum, Audubon California, and other research entities, as well as Student Conservation Association, and Los Angeles Conservation Corps to restore and improve the resiliency of riparian habitat throughout the Monument. Remove invasive plant species that threaten to replace native riparian plant communities and revegetate with native plant species in a timely manner. Augmented revegetation of disturbance-treatment (unauthorized soil disturbance, designated closed routes) and invasive plant removal areas, as opposed to “natural revegetation” is necessary within the Monument in order to efficiently and rapidly restore native plant community functions and wildlife habitat values in a timeframe benefitting local communities.
- Consider coordinating with the CDFW in establishing a robust brown-headed cowbird (*Molothrus ater*) trapping program throughout the Monument.
- Develop management policies to minimize human visitation impact upon breeding birds within the Monument.
- Collaborate with the USGS Patuxent Wildlife Research Center’s national Breeding Bird Survey and other avian tracking research entities to track trends of migratory bird species which breed in or travel through the Monument.
- Ensure all travel management planning considers potential impacts to nesting and migrating birds and minimizes such impact through specific avoidance planning.
- Integrate information describing Mojave Trails National Monument’s breeding and migratory bird species into educational and interpretation materials.
- Institute annual agency monitoring of neotropical migrants during spring and fall migration within the Monument; or alternatively solicit/contract a capable individual(s) from the local community to conduct avian monitoring.
- In conjunction with BLM’s annual proper functioning condition analysis and groundwater hydrological monitoring, evaluate the value of existing water sources to neotropical migratory birds, particularly with respect to long-term stability and resilience to climate change impacts;
- Coordinate with the NPS, CDFW, the Lahontan Regional Water Quality Control Board, San Bernardino County, and other agencies to maintain developed water sources within the Monument.
- Vehicle use does impact habitat suitable for birds and interrupts foraging and social activities. Vehicle use routes consequently designated for open vehicle travel should be
minimized in special status species or object bird species’ habitats within the Monument. Clear, concise Monument signage describing prohibitions and appropriate penalties for noncompliance are needed, as are regularly scheduled sign maintenance and law enforcement patrol. Rapid removal of evidence of unauthorized vehicle use upon discovery is also essential to ensure a spiraling of impacts does not occur from overnight proliferation of natural resource impacts in a remote area.

**Recommendation:** Establish baseline bird population surveys and robust monitoring of authorized human uses, and institute protection programs for bird of prey species, such as the Western burrowing owl, red-tailed hawk, golden eagle, American kestrel, and prairie falcon.

**Strategies:**

- Identify, protect, and restore historic nesting habitat. Conduct spring breeding and fall migration bird surveys.
- Collaborate with the USGS Patuxent Wildlife Research Station’s Breeding Bird Survey to ensure the Monument is sufficiently monitored and tracked as to national avian trends.
- Conduct site-specific visitor use zoning and travel management per Proclamation direction, with an emphasis on protecting this class of Monument Objects over the long term and facilitating climate change resilience and adaptation.

### 11.1.3.3 Reptiles

The Mojave Trails National Monument encompasses a region characterized as exceptional habitat for a wide variety of California desert reptiles. These include the Western zebra-tailed lizard (*Callisaurus draconoides rhodostictus*), Great Basin whiptail (*Aspidoscelis tigris tigris*), Great Basin collared lizard (*Crotaphytus bicinctores*), chuckwalla (*Sauromalus ater*), Western banded gecko (*Coleonyx variegatus*), Mojave rattlesnake (*Crotalus scutulatus*), sidewinder (*C. cerastes*), and speckled rattlesnake (*C. mitchelli*). The Monument also supports critical habitat for the state/federally listed threatened Agassiz’s desert tortoise (*Gopherus agassizii*), California’s official state reptile; the northeastern range extent of the southwestern pond turtle (*Actinemys pallida*), a state species of special concern; and much of the occupied habitat of the endemic Mojave fringed-toed lizard (*Uma scoparia*), designated as a BLM-sensitive species.

Tortoises occur throughout the Monument on bajadas, or alluvial fans, in washes and canyons, in creosote bush and saltbush plains, as well as within blackbrush scrub and Joshua tree woodland. Washes and ephemeral California streambeds are common travel corridors linking favored, disjunct tortoise habitat patches. Caliche wash banks, which exemplify one of the Mojave Desert’s carbon sequestering processes, are a preferred shelter site in the Monument, as are the bases of various shrubs.

Vehicle use impacts habitat suitable for Agassiz’s desert tortoise, occasionally traumatizes affected animals, interrupts foraging and social activities, and sometimes facilitates tortoise poaching, collection, vandalism, and common raven predation. Vehicle routes designated for open vehicle travel should be minimized in this species’ habitat within the Monument. Clear, concise Monument signage describing prohibitions and appropriate penalties for noncompliance are needed, as are regularly scheduled sign
maintenance and law enforcement patrol. Rapid removal of impacts from unauthorized vehicle use is essential to ensure that additional resource damage does not occur.

Three of the six recovery units for Agassiz’s desert tortoise designated by the USFWS come together within the Mojave Trails National Monument—the Western Mojave, Eastern Mojave, and the Colorado Desert Recovery Units. The monument connects the Mojave National Preserve to the north with Joshua Tree National Park to the south, contributing to a protected wildlife habitat corridor. The northern portion of the monument and Mojave Preserve are mostly within the Eastern Mojave Recovery Unit. The remaining portion of the Monument is within the Piute-Fenner Critical Habitat Unit (500,000+ overlap acres) and the Chemehuevi Critical Habitat Unit (236,000 overlap acres).

The USFWS (2011)\(^2\) has identified a critical need to protect habitat linkages between Mojave population desert tortoise critical habitat units. Over 220,000 acres of USFWS-identified Agassiz’s desert tortoise linkage habitat occurs within the Monument between the Chemehuevi Critical Habitat Unit and Joshua Tree National Park, in the southern portion of the Cadiz Valley.

The importance of the northern portion of the Chemehuevi Valley for Agassiz’s desert tortoise, which also occurs within the Monument, cannot be overstated. Scientists have noted that the Mojave Trails National Monument region has supported some of the highest tortoise population densities in the eastern Mojave Desert, with 115 tortoises per square-mile recorded in some tortoise habitat patches. (It should be noted that tortoise densities exceeding 100 animals per square mile are known to occur in only 2-8% of all Agassiz’s tortoise habitats throughout their range) (Grover, 1995). Areas located outside designated Agassiz’s desert tortoise critical habitat which support high population numbers and are considered at risk are known to occur within the Monument. These populations and their supporting habitat should be monitored closely on a regularly scheduled basis, with the data stored in local BLM offices with other Monument monitoring data and made available to the public upon request.

**Recommendation:** Protect Agassiz’s desert tortoise habitat and regional wildlife habitat linkages as identified in USFWS (2011) Desert Tortoise (Mojave Population) Recovery Plan.

**Strategies:**

- Conduct site-specific visitor use zoning and travel management per Proclamation direction, with an emphasis on protecting this Monument Object over the long term and facilitating climate change resilience/adaptation.
- Conduct annual monitoring of Agassiz’s desert tortoise populations within the Monument, within and adjacent to habitat designated as critical for the species, in coordination with the USFWS Desert Tortoise Recovery Office.
- Minimize surface-disturbing activities in desert tortoise habitat including redundant roads, unregulated camping/vehicle staging use, new transmission line installation, and livestock grazing/trailing, as well as those actions or activities that support tortoise predators.
- Recognize that while the Lazy Daisy Cattle Allotment is a perennial livestock use on our public lands authorized under the Monument Proclamation, every effort should be made to

retire this grazing lease when an opportunity arises, according to established agency procedures, by willing grazing lease owner agreement.

- Coordinate with the CDFW and NPS to ensure existing wildlife water guzzlers within the Monument are monitored on a regularly scheduled basis, using specific access authorization and maintained in a timely fashion to ensure proper functioning. All small-game water guzzlers should be examined in a timely fashion to determine if tortoises have previously become entrapped and/or which need to be modified to ensure tortoises do not become entrapped.

- In conjunction with NPS, USFWS, CDFW and other state/federal agencies, BLM should plan for and actively protect tortoise movement corridors outside the Monument to ensure population connectivity.

- Install specific entry portal, trailhead kiosk, open vehicle route and travel signs throughout the Monument. All such interpretive signing should emphasize protection of Monument Objects where feasible.

- Increase park ranger presence, law enforcement patrols, and agency presence throughout the Monument to prevent unauthorized use, particularly illegal OHV use on the high-use holidays and weekends that pose a high potential for Agassiz’s desert tortoise habitat impact and animal mortality. All violations of law adversely affecting Monument Objects of interest, where pursued by BLM in court, should include full surface disturbance reclamation costs and community service as restitution.

- Prioritize areas for Agassiz’s desert tortoise habitat restoration, using vertical mulching techniques (Egan, 2000) and native plant revegetation to prevent further unauthorized OHV incursions and associated surface disturbance. Aggressively pursue funding grant opportunities for on-the-ground surface disturbance reclamation work on an annual basis; and coordinate with the appropriate desert tortoise recovery implementation teams.

- Inventory and characterize all common raven (Corvus corax) nests within the Monument. Remove those nests found to support common raven predation of tortoises outside of the active nesting season. Ensure no new transmission lines are sited through the Monument to minimize the addition of common raven nesting substrate.

- Coordinate with the California Department of Transportation, CDFW, San Bernardino County Planning, and the appropriate USFWS recovery implementation team to map wildlife habitat linkages affecting the Monument, and ensure that funding to accomplish identified habitat and population protection measures (i.e., tortoise exclusion fencing on roadways, underpass/culvert modification to facilitate safe tortoise travel/passage) is rapidly pursued.

- Partner with the Desert Tortoise Council, CDFW, USFWS, U.S. Marine Corps Air Ground Combat Center, other state/federal agencies, research institutions, local Native American Tribes, and interested universities in promoting necessary tortoise research, surveys, monitoring, and hatchling/juvenile tortoise head-start programs which could potentially benefit management.

- Incorporate appropriate desert tortoise protection messages into Monument signage, media, and education and interpretive programs.

- In conjunction with monitoring native plant community functioning conditions on an annual basis, BLM should evaluate desert tortoise habitat conditions within the Monument on an annual basis. Where surface disturbance impacts are noted, corrective actions need to be
undertaken immediately upon discovery to limit the level of impacts, which can quickly spiral out of control in remote desert lands.

11.1.3.4 Desert Bighorn Sheep

Desert Bighorn sheep are the iconic large mammal of the California desert and have been identified as a Monument Object of interest in the Monument Proclamation. As a metapopulation in the California desert, the desert bighorn is at particular risk of genetic isolation which underscores the need to protect wildlife travel corridors connecting the Monument with other public and private lands. High value habitats for this Monument Object of interest should be identified within the Monument itself, and ongoing public land management should be modified to protect travel linkage corridors connecting Monument lands to suitable desert bighorn sheep habitat. Human safety and animal entrapment sources should also be removed within the Monument, particularly at high-value wildlife habitat locales such as watering locations and critical habitat linkage corridors.

The Cady Mountains Allotment fencing is one such example, where livestock management fencing was cut and piled in washes draining the north slopes of the Cady Mountains at the Mojave River by the authorized lease permittee in the 1990s, immediately south of the western Afton Canyon riparian restoration project area. In the late 1990s, the permittee, BLM, and the U.S. Army agreed to retire the Cady Mountains Allotment to benefit long-term desert tortoise and bighorn sheep conservation. Previous Cady Mountains livestock fencing, as opposed to vehicle use management fencing, is no longer needed. Other watering locations for desert bighorn are at risk from excess human visitation, camping, and vehicle parking and staging. Additionally, where removal of certain previous human use impacts (parking areas, fire rings, hill-climbs) and installation of hard limits to surface disturbance (i.e., end of route terminus signing, entering private land, hiking trailhead only signing) could facilitate appropriate bighorn sheep habitat management. Vehicle use impacts habitat suitable for desert bighorn sheep, occasionally traumatizes affected animals, and interrupts foraging and social activities.

Recommendation: Maintain and enhance habitat, health and population connectivity benefitting desert bighorn sheep within the Monument.

Strategies:

- Vehicle use routes designated for open vehicle travel should be minimized in this species’ habitat within the Monument. Clear, concise Monument signage describing prohibitions and appropriate penalties for non-compliance are needed, as are regularly scheduled sign maintenance and law enforcement patrol. Rapid removal of unauthorized vehicle use is also essential to ensure that additional natural resource impact in a remote area.
- Conduct site-specific visitor use zoning and travel management per Proclamation direction, with an emphasis on protecting the Monument Objects over the long term and facilitating climate change resilience and adaptation.
- Coordinate with CDFW, NPS, the Desert Bighorn Council, and the Society for the Conservation of Bighorn Sheep in annual monitoring of desert bighorn sheep populations within the Monument.
- Review previously authorized cattle grazing allotment (e.g., Cady Mountains Allotment) physical improvements and modify or remove to improve the proper care and management of desert bighorn sheep and its habitat.
• In conjunction with agency-contracted hydrological monitoring, and in coordination with CDFW, NPS, Defenders of Wildlife, the Desert Bighorn Council, and the Society for the Conservation of Bighorn Sheep, evaluate the presence of naturally occurring and developed water sources and evaluate their ability to sustain desert bighorn sheep and other wildlife, as well as minimize human use or wildlife conflicts.

• Collaborate with CDFW to encourage voluntary retirement of grazing allotments from willing lease permittees as previously expressed in BLM management plans for the area to benefit desert bighorn sheep populations. We note that the Cady Mountains-Cave Mountain desert bighorn sheep population increased from “approximately 25 desert bighorn sheep” in the late 1980s (BLM 1989) to an estimated 93 individuals on the Cady Mountains, excluding Cave Mountain (CDFW 2019). The population increase is believed to be a result of aggressively controlling OHV use in Afton Canyon with barrier installation and maintenance; removal of the invasive non-native plant salt cedar (*Tamarix ramosissima*); revegetation with native plant species from the western and central portions of Afton Canyon and other key watering areas in the Afton Canyon Natural Area ACEC; and the voluntary retirement of the Cady Mountains and Cronese Lakes cattle allotments, which formerly allowed for the perennial grazing and relatively unrestricted trailing of 200-400 cattle.

The Cady Mountains were surveyed by CDFW via helicopter in September 2015. The minimum population count was 67 individuals, and a simultaneous double count provided an estimate of 130 bighorn sheep, but with a wide 95% confidence interval of 67-223 (Table 5). As the Cady Mountains portion of the Monument stretches over a fairly vast area with varying habitat suitability, and the Cave Mountain portion of the Monument was not included in this survey, the population estimate is only applicable to the area surveyed and additional desert bighorn sheep are suspected to occur.

<table>
<thead>
<tr>
<th>Adult Ewes</th>
<th>Yearling Ewes</th>
<th>Adult Rams</th>
<th>Yearling Rams</th>
<th>Lambs</th>
<th>Minimum Count</th>
<th>Lamb: Ewe Ratio</th>
<th>Population Estimate</th>
<th>Confidence Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>6</td>
<td>20</td>
<td>2</td>
<td>8</td>
<td>67</td>
<td>26-100</td>
<td>130</td>
<td>67-223</td>
</tr>
</tbody>
</table>

• Collaborate with CDFW to prevent contact between desert bighorn sheep and domestic livestock within the Monument; as certain livestock are known to be vectors for contagious diseases (i.e., blue tongue, pneumonia, etc.) affecting desert bighorn sheep. Review existing water developments within the Lazy Daisy Cattle Allotment public land area to minimize the potential for contact between domestic livestock and desert bighorn sheep, ensuring that the protection of desert bighorn sheep as a Monument Object is a primary management consideration.

### 11.1.3.5 Sonoran Pronghorn

The critically endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*) once roamed portions of the Colorado Desert in southeastern California. Historically, this species may have traveled within the
Monument and was last reported from the Chuckwalla Bench of southeastern California, east of Palm Springs, in the 1940s prior to being declared extirpated from the State (Egan 2019).

In implementing the Sonoran Pronghorn Recovery Plan (USFWS 2016), the USFWS determined that the Chuckwalla Bench of southeastern California is the most recently occupied habitat of the Sonoran pronghorn in the state. A 2021 reintroduction effort has been proposed by a Sonoran pronghorn reintroduction working group. Under an Endangered Species Act Section 10(j) rule, the Service has proposed the establishment of a non-essential, experimental Sonoran Pronghorn population on the Chuckwalla Bench, with an initial reintroduction on the Chocolate Mountain Aerial Gunnery Range. The proposed experimental population area currently being explored would encompass lands extending northward from the Chuckwalla Bench through the Mojave Trails National Monument.

While a Sonoran pronghorn reintroduction, if approved, may not result in pronghorn reaching the Monument anytime soon, we suggest careful monitoring of the proposed reintroduction and its implementation. The Mojave Trails National Monument Resource Management Plan may need to be modified accordingly.

**Recommendation:** Evaluate Monument lands for Sonoran pronghorn habitat suitability and create maps accordingly. Consider associated habitat linkage lands outside the Monument that may be critical travel corridors.

**Strategies:**

- Identify Monument areas with appropriate Sonoran pronghorn habitat, as well as connecting habitat linkages outside the Monument, which may need to be addressed to facilitate future Sonoran pronghorn travel to, and within, the Monument.
- Actively participate in finalizing the proposed Sonoran pronghorn California reintroduction effort (Sonoran Pronghorn California Reintroduction Working Group, 2019).

### 11.1.3.6 Mojave Fringed-toed Lizard

A California species of special concern and a BLM-designated sensitive species, the Mojave fringed-toed lizard (MFTL) is an endemic Mojave Desert reptile closely associated with the shifting positioning of the Mojave River and associated sand transport corridors. This highly adapted lizard can be found within a considerable portion of the Monument, including within the Cadiz Dunes, the eastern portion of the Pisgah Lava Flow, and along the entire length of Afton Canyon.

While seldom discussed, OHV can result in MFTL mortality by outright crushing. More importantly, certain recreational vehicle use can quickly strip the limited vegetation that has taken years to become established to benefit MFTL, and which is essential for almost all wildlife dependent upon moving sand habitat.

Careful travel management specific to the Monument is necessary to ensure that habitat for this Monument Object, the MFTL, is efficiently, effectively and seriously managed. Vehicle use impacts habitat suitable for MFTL. Vehicle use routes designated for open vehicle travel should be minimized in this species’ habitat within the Monument. Clear, concise Monument signage describing prohibitions and appropriate penalties for non-compliance are needed, as are regularly scheduled sign maintenance, law enforcement patrol, and rapid removal of unauthorized vehicle use.
**11.1.3.7 Southwestern Pond Turtle**

Another California Species of Special Concern and a BLM-designated sensitive species, the southwestern pond turtle (SWPT) reaches its northeastern range extent along the banks of the Mojave River in Afton Canyon, within the northwest corner of the Monument. This native chelonian depends on water flow, as well as water ponding, wetland vegetation, minimal American bullfrog (*Lithobates catesbeianus*) numbers, and suitable adjacent uplands in which to winter. These same habitat areas are frequently in high demand by recreational vehicle users who ride through water and mud or in areas of adjacent upland suitable SWPT habitat.

Vehicle use impacts habitat suitable for SWPT. Vehicle use routes designated for open vehicle travel should be minimized in this species’ habitat within the Monument. Clear, concise Monument signage describing prohibitions and appropriate penalties for non-compliance are needed, as are regularly scheduled sign maintenance and law enforcement patrol. Rapid removal of unauthorized vehicle use indications is also essential to ensure a spiraling of natural resource impact does not occur from overnight proliferation of natural resource impacts in a remote area.

**Recommendation:** Protect the BLM-designated sensitive SWPT and its habitat throughout the Monument; specifically, the easternmost extent of the species’ range at Afton Canyon.

**Strategies:**

- Identify Monument areas with appropriate SWPT habitat, as well as connecting habitat linkages outside the Monument, which may need to be addressed to facilitate future SWPT travel to, and within, the Monument.
- Conduct site-specific visitor use zoning and travel management per Proclamation direction, with an emphasis on protecting this Monument Object over the long term and facilitating climate change resilience/adaptation.

### 11.2 General Resource Management Recommendations

#### 11.2.1 Military Installations

Mojave Trails National Monument plays an important role as a training facility in San Bernardino County, especially with the Marine Corps Air Ground Combat Center, which shares its northern and eastern borders with the newly created monument. Mojave Trails is also important to San Bernardino County’s
Department of Defense military installations which include the Naval Air Weapons Station China Lake, Marine Corps Logistics Base Barstow, Edwards Air Force Base, National Training Center at Fort Irwin, and Marine Corps Air Ground Combat Center/Marine Air Ground Task Force Training Command. These five military installations are not only the nation’s premiere military training facilities, but also collectively employ more than 52,000 military and civilian personnel.

Mojave Trails National Monument helps these installations fulfill their training mission by serving as a key facility for on-the-ground training operations, but also for the military’s air operations, as the skies above the monument are designated special use airspace and military operations areas. In fact, it is the realistic, unencumbered air and ground training that can be found nowhere else in the world at the Marine Corps Air Ground Combat Center, which prepares Marines to become unparalleled war fighters.

Routes of travel out of the Marine Corps Air Ground Combat Center serve as key conduits for circulation and connect it with other military installations within San Bernardino County. At the same time, trespass onto the Combat Center is a concern both for national security and safety reasons, as the Combat Center shares its northern and eastern boundary with Mojave Trails National Monument.

The Combat Center has invested heavily in Mojave Trails National Monument’s population of desert tortoise and has relocated tortoise from the Johnson Valley annexation to parts of Mojave Trails. These translocated tortoises are the subjects of a long-term study tracking their health and lifespans.

Finally, the military installations within San Bernardino County, especially the Marine Corps Air Ground Combat Center, have a vested interested in ensuring the protection of the Monument’s dark skies to facilitate continued night-time military training.

**Recommendation:** BLM should collaborate closely with the Marine Corps Air Ground Combat Center and other military installations on natural resource, safety, airspace, and security issues.

**Strategies:**

- Continue to forge partnerships with the military that protect and enhance the natural and cultural resources of Mojave Trails National Monument.
- Communicate and coordinate on the Marine Corps Air Ground Combat Center’s use of Mojave Trails for military training and operations.
- Limit OHV use in the Broadwell and Siberia areas of Mojave Trails National Monument to support the Marine Corps Air Ground Combat Center’s translocation of the federally threatened desert tortoise.
- Communicate and coordinate in a systematic way on OHV boundary incursions from the newly created monument onto military lands.
- Develop concepts, publications, interpretive signs, and outreach plans for sharing the incredible role Mojave Trails has played in national defense, particularly in regard to General Patton’s WWII Desert Training Center.
• Collaborate with military installations to protect key archaeological resources, such as Patton’s WWII Desert Training Center, through enforcement, restoration, education, and listing them on the National Register of Historic Places.
• Collaborate and communicate with the military to ensure that development projects within and around the vicinity of Mojave Trails National Monument do not become a threat to special use airspace.

11.2.2 Joseph Grinnell Resurvey Study

Joseph Grinnell was the founding director of the Museum of Vertebrate Zoology, and he realized that California was changing rapidly. He and his students conducted early inventories of terrestrial vertebrates throughout California and the western United States. Between 1904 and 1940, Grinnell’s teams documented birds, mammals, reptiles, and amphibians from 700 locations.

The Grinnell Resurvey efforts will, among other things, quantify the effects of climate change and land use on desert species and communities. Some of Grinnell’s original sites are located within the newly established Mojave Trails National Monument and they should be resurveyed. They are listed in the table below.

<table>
<thead>
<tr>
<th>Site</th>
<th>Dates on Site</th>
<th>Historic Notes*</th>
<th>Mammal Resurvey Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ludlow</td>
<td>20-24 October 2015</td>
<td>Alexander and Kellogg 1-4 Feb 1935 trapped in &quot;dry washes&quot; &quot;a mile north of town (Ludlow)&quot; and &quot;two miles east of Ludlow&quot; along the railroad; Alexander and Kellogg 15-18 Dec 1937 trapped &quot;2 1/2 mi east of town where the highway crosses the railroad&quot; and &quot;5 1/2 mi east of Ludlow&quot;; also visited by Storer 7-8 May 1917; Sibley and Chattin 1940</td>
<td>Plots were located just WSW of the town of Ludlow, along the railroad and adjacent to hills, out of the public eye</td>
</tr>
<tr>
<td>Amboy</td>
<td>18-21 November 2015</td>
<td>Alexander and Kellogg 17 May 1935 trapped 3 miles west of Amboy along the highway and &quot;crusty edges of flows&quot;; Lamb 5 Nov 1931 &quot;60 mouse and rat traps set in sandy soil among creosote&quot; 600 ft elev; also, Luke 1918, Willett 1931, and Lawrence 1956</td>
<td>3 plots were west of town between the railroad and lava flow, and 1 was just north of town in creosote</td>
</tr>
<tr>
<td>Essex, NW</td>
<td>17-21 March 2016</td>
<td>Johnson, Taber, Arvey 22 Dec 1937 trapped &quot;7 miles N Essex 2000 ft&quot; &quot;about 400 traps out, nearly all in soil of fine sandy texture among creosote bushes and small chollas&quot; and also &quot;in rocks&quot;; also, Russell 6 Oct 1945, and others in vicinity of Essex</td>
<td>Plots were located 7-8 miles NNW of Essex in similar habitat adjacent to the Blind Hills</td>
</tr>
</tbody>
</table>
*Not comprehensive, but a few examples per site.

Study Plots

**Grinnell Resurvey Plots**

<table>
<thead>
<tr>
<th>Site</th>
<th>Plot ID</th>
<th>Open Date</th>
<th>End Date</th>
<th>Latitude</th>
<th>Longitude</th>
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<tr>
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**Recommendation:** Work with other agencies and institutions to secure resources to resurvey Grinnell’s original locations within Mojave Trails National Monument for birds, mammals, reptiles and amphibians.

**Strategies:**

- Partner with other institutions to secure resources and field staff to conduct the Mojave Trails National Monument sites.
- Make the data available to the general public and research institutions.
- Interpret Grinnell’s important study as an important chapter in the story of the Mojave Trails National Monument.
- Ensure USFWS completes a biological opinion specifically for Mojave Trails National Monument.

**11.2.3 Visual Resource Management**

Various federal laws, including NEPA and FLPMA, require that public lands be managed in such a way as to preserve scenic and aesthetic values. The BLM has created and codified a Visual Resource
Management system that allows for the identification and classification of a variety of visual values (Manual 8400). Visual resources are inventoried based on scenic quality, public sensitivity to disturbance, and distance from viewer (Manual H-8410-1) and assigned a class (I-IV) defining the level of permissible surface disturbance. In all cases where surface disturbance is to take place, effort should be taken to make the disturbance as low contrast as possible (Manual 8431), although the degree of contrast preferred will ultimately depend on the class of the resource being maintained.

**Objective:** Inventory visual resources within the Monument by following the process outlined in BLM Manual H-8410-1 (1986).

**Recommendation:** Generally, land with pre-existing management requirements, like wilderness areas or ACECs, automatically receive a Class I designation, allowing only minimal, if any, surface disturbance. Given that a significant portion of the Monument falls within an ACEC, NCL, or Wilderness designation, resource managers should instead determine visual resource classes via the proposed Wilderness, Primitive, Backcountry, Frontcountry, and Passage zones identified earlier in this document.

**Recommendation:** Visitor infrastructure at points of interest should maintain a low contrast to the surrounding landscape while complimenting the ecological, geologic, or historical nature of the site, regardless of the VRM classification of the surrounding terrain.

### 11.2.4 Soundscapes

Soundscapes are managed by the BLM as part of their air resource management plan (Manual 7300), authorized through FLPMA’s requirement to, “maintain an inventory of all public lands and their resources.” FLPMA makes specific mention of noise as a source of pollution in directing the agency to, “provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standards...” The agency’s air resource management plan requires the impacts of noise be considered when development may affect sensitive resources such as wildlife, heritage resources, and special value areas like wilderness, ACECs, or NCLs. However, there is no systematic process by which BLM evaluates the impact of noise or through which the agency can promote natural soundscapes.

The NPS has robust management practices for measuring and administering soundscapes and noise pollution that can serve as a starting point for developing a sound management practice in the Monument.

**Objective:** Inventory the Monument’s soundscape and define allowable levels of noise pollution.

**Recommendation:** Identify priority sites for natural and cultural resource preservation and create a sound-map of the Monument. Sites may include wildlife hotspots, popular recreation areas, and cultural sites.

**Recommendation:** Utilize the land use and zoning designations (Backcountry, Frontcountry, etc.) to describe the maximum allowable amount of noise pollution in each subdivision.

**Objective:** Promote and protect natural soundscapes through regulating vehicle access.

**Recommendation:** Where possible, limit commercial aviation (overflights, air tours, etc.) and recreational drone use to Frontcountry and Passage zones.
**Recommendation:** Limit off-highway vehicle access, to the extent possible, in Backcountry and Primitive zones.

### 11.2.5 Night Skies Management

Protecting this spectacular resource is of paramount importance. Pristine, dark night skies are important to wildlife, human health, and visitor enjoyment. At the same time, preventing light pollution saves residents and business owners money and prevents wasted energy.

The newly established Mojave Trails National Monument is eligible for the International Dark-Sky Association’s Dark Sky Sanctuary designation, its highest form of protection. Moving forward, management actions should prioritize obtaining this designation and preventing light pollution and glare that could damage this incredible resource.

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3 Please see Light Pollution Map at https://www.lightpollutionmap.info/#zoom=4&lat=5759860&lon=1619364&layers=B0FFFTFFFF

4 Please see https://www.darksky.org/our-work/conservation/idsp/sanctuaries/
**Recommendation:** Work to obtain the Dark Sky Sanctuary designation from the International Dark-Sky Association while developing policies to minimize or avoid light pollution and glare within Mojave Trails National Monument.

**Strategies:**

- Build partnerships with local, state, and federal agencies, as well as universities, research institutions and nonprofits to leverage research, management, monitoring, materials, and equipment that supports the application for the Dark Sky Sanctuary designation for the Monument.
- Work with San Bernardino County and local communities to develop policies and actions that minimize or avoid light pollution and glare within the newly established Monument.
- Ensure that Monument facilities obtain lighting that is recommended by the International Dark-Sky Association and avoids or minimizes glare and light trespass.

**11.2.6 Quiet Recreation**

**11.2.6.1 Camping**
Camping provides various health benefits and is part of an American tradition of spending time in our nation’s outstanding public lands. The popularity of camping has grown tremendously. More people are camping, with over six million new camping households since 2014 (Houghton, 2018). This is certainly true in the California desert, where visitation to public lands has doubled in many areas. Camping provides an outstanding opportunity to communities, families, businesses, visitors, and organized groups to experience the California desert and continue to raise the profile of protected public lands in the area.

**Overall Objective** - Improve opportunities for individuals, families, and organized groups to experience the desert environment through a range of overnight camping experiences, from developed campgrounds to dispersed primitive camping.

**Strategies:**

- Update recreational materials to show allowed camping zones and where developed campsites on printed maps, BLM’s online recreation map, and distribute printed materials through local businesses and partner organizations.
- Implement a monitoring program to measure camping impacts. Dispersed camping locations may need to be regulated or restricted if impacts from camping begin to negatively affect Monument Objects.
- Partner with organized groups from across southern California to provide interpretive programs during the high-use season at each campground.

**Objectives and Strategies by Management Zone**

**Passage Zone:** The purpose of the Passage zone is to provide secondary travel routes which receive use as throughways and recreation designations where there is a need for recreational and passenger vehicles to travel through to access other zones, trail heads, or for administrative purposes. Rudimentary facilities will be provided as necessary to protect resources and educate visitors about Monument Objects and resources or for public safety. This may include parking, trailheads, primitive campsites, and information kiosks or signs.

**Objective:** Reduce camping impacts from highway traffic and improve visual aesthetic along highway corridors within the Monument.

**Strategy:**

- Install signage to direct visitors to developed campgrounds in Frontcountry zones or dispersed camping areas in Backcountry and Primitive zones.

**Frontcountry Zone:** The focal point of the Frontcountry zone is visitation by providing infrastructure and visitor support services to popular day use areas. Access is easy and convenient, and the encounter rate is very high. High maintenance and intervention will be required to accommodate concentrated visitor
Objective: Improve developed camping opportunities across the Monument for families and organized groups.

Strategies:

- Increase the number of developed campgrounds to five, spread across different portions of the Monument. Each site should contain around 25 sites and be accessible by 2-wheel drive vehicles.
- Restrict dispersed camping in Frontcountry zones to promote use of developed campgrounds and protect sensitive resources.

Backcountry Zone: The Backcountry zone provides a less developed and self-directed visitor experience while accommodating motorized and non-motorized access on designated routes. Facilities are rare and provided only where essential for Monument object and resource protection. Administrative control will be at a moderate level, with trail and route markers and designated parking/staging areas. Density of routes may be medium to high in select areas to form loop experiences. Other non-motorized routes may exist in these zones at low densities. There will be a low to moderate chance for encounters with other people.

Objective: Provide primitive vehicle camping opportunities at designated sites within Backcountry vehicle camping zones.

Strategy:

- Identify and designate Backcountry camping zones that minimize risk of impact to Monument Objects. Designate campsites within each zone to provide a semi-primitive experience for motorized camping.

Primitive Zone: The purpose of the Primitive zone is to provide undeveloped, self-directed areas that serve quiet non-motorized recreation in a primitive setting. These areas generally have sensitive Monument Objects and resources; therefore, non-motorized trails in these areas will have a low to medium density. Trails will consist of low-standard multiuse trails with little or no maintenance. There will be a low chance for encounters with other people.

Objective: Provide for self-directed and self-contained primitive vehicle camping opportunities within camping zones.

Strategy:

- Maintain existing dispersed camping rules for BLM lands within the Monument. Limit camping to existing disturbed areas.
Wilderness Zone: The Wilderness zone will provide areas of naturalness, outstanding opportunities for solitude or primitive and unconfined recreation. This zone encompasses Wilderness and Wilderness Study Areas and other highly sensitive ecological areas containing dense Monument Objects and resources where there will be no motorized routes or travel permitted. Evidence of administrative control should be little to none. Non-motorized routes are generally undeveloped, and areas are generally accessed by foot or horseback.

Objective: Provide for primitive, non-mechanized camping opportunities

Strategy:

- Designate day-use only areas around sensitive Monument Objects.
- Install backcountry boards at popular trailheads with positive messaging about appropriate behavior for wilderness areas.

Hiking

Hiking is a healthy activity that is part of the American tradition of enjoying public lands. Hiking provides visitors with a connection to prehistoric and historic use of the Monument as they hike alongside the trails and roads that provided the earliest and easiest access to and through the Mojave Desert.

Overall Objective - Provide opportunities for multiple classes of hiking within Monument that enable visitors to learn about desert travel and share experiences with previous human travelers.

Strategy:

- Update recreation materials to show trailheads and hiking trails on printed maps, BLM’s online recreation map, and distribute printed materials through local businesses and partner organizations.
- Implement a monitoring program to measure hiking impacts. Trails may need to be reevaluated periodically to determine whether hiking impacts are adversely impacting Monument Objects, and management actions may be needed to remedy the impacts.

Objectives and Strategies by Zone

Passage Zone Objective: Minimize hiking within Passage zones and highway corridors within the monument to provide the most enjoyable hiking experience.

Strategies:

- Close and rehabilitate hiking trails within the Passage zones and within highway rights-of-way.
- Install signs and barriers to discourage formation of social trails within Passage zones

Frontcountry Zone Objective: Provide easy to moderate accessible trails at high visitation areas that enable exploration and enjoyment of the desert in a safer, more controlled manner for visitors while protecting Monument Objects.
Strategies:

• Maintain existing trails or develop new trails as needed to protect resources.
• Restrict hiking to designated trails only to minimize impacts to resources from redundant or parallel trails.
• Close and rehabilitate social trails as they form to minimize future impacts or restore already disturbed areas.
• Upgrade trails to match USFS standards for Trail Class 3 or Trail Class 4 depending on the level of accessibility that is appropriate or desired at the recreation site (FSH 2353, Section 14.2, Exhibit 01).

Backcountry and Primitive Zone Objective: Provide for a mix of on- and off-trail travel to allow visitors to experience desert travel in a similar way as prehistoric and historic travelers, while protecting resources and monument objects.

Strategies:

• Encourage use of existing trails, but do not restrict travel to them.
• Emphasize Leave No Trace ethics and principles for desert travel at major trailheads and access points.
• Maintain existing trails as needed to protect resources.
• Close and rehabilitate social trails as they form.
• Trails should not exceed USFS standards for Trail Class 2 (FSH 2353, Section 14.2, Exhibit 01).

Wilderness Zone Objective: Allow self-directed hiking through the desert landscape where self-directed hiking is not in conflict with management of Monument Objects.

Strategies:

• Emphasize Leave No Trace ethics and principles for desert travel at major trailheads and access points.
• Close and rehabilitate heavily eroded trails as they form; a formal trail may need to be constructed to protect monument and wilderness resources. Trail construction should be the last resort to minimize human developments within legislatively protected wilderness areas.
• Limit trails to match USFS standards for Trail Class 1 trails (FSH 2353, Section 14.2, Exhibit 01).

11.2.6.2 Equestrian use

Horseback riding and pack stock use are traditional activities and are historic methods of travel along the namesakes of the Mojave Trails National Monument.

Overall Objective - Provide opportunities for pack stock use within the Monument that enable visitors to learn about desert travel and share experiences with previous travelers within the Monument.
Strategies:

- Update recreation materials to show trailheads and equestrian-friendly trails on printed maps and BLM’s online recreation map, and distribute printed materials through local businesses and partner organizations.
- Implement a monitoring program to measure equestrian impacts. Trails or impacts may need to be reevaluated periodically to determine whether hiking activities are adversely impacting Monument Objects. Management actions may be needed to remedy the impacts.

Objectives and Strategies by Zone

Passage Zone Objective: Minimize within Passage zones and highway corridors within the Monument to provide the most enjoyable equestrian experience.

Strategies:

- Close and rehabilitate pack and stock trails within Passage zones and within highway rights-of-way.
- Install signs and barriers to discourage formation of social trails within Passage zones.

Frontcountry Zone Objective: Provide easy to moderate difficulty trails at high visitation areas that enable exploration and enjoyment of the desert in a safer, more controlled manner for visitors while protecting Monument Objects.

Strategies:

- Maintain existing or develop new trails as needed to protect resources.
- Restrict stock use to designated trails only to minimize impacts to resources from redundant or parallel trails.
- Close and rehabilitate social trails as they form and restore disturbed areas to minimize future impacts.
- Upgrade trails to match USFS standards for Trail Class 3 or Trail Class 4 depending on level of accessibility that is appropriate or desired at the recreation site (FSH 2353, Section 14.2, Exhibit 01).

Backcountry, Primitive, and Wilderness Zones Objective: Provide for a mix of on- and off-trail travel to allow visitors to experience desert travel in a similar way as prehistoric and historic travelers, while protecting resources and key monument objects.

Strategies:

- Encourage use of existing trails, but do not restrict travel to them.
- Emphasize Leave No Trace ethics and principles for desert travel at major trailheads and access points.
- Maintain existing trails as needed to protect resources.
- Close and rehabilitate social trails as they form.
- Trails should not exceed USFS standards for Trail Class 2 (FSH 2353, Section 14.2, Exhibit 01).
- Close and rehabilitate heavily eroded trails as they form; a formal trail may need to be constructed to protect Monument and wilderness resources. Constructing a trail should be
the last resort to minimize human developments within legislatively protected wilderness areas.

11.2.7 Other Recreation

Rockhounding and Casual Collection

Objective: Allow casual collection of gems and minerals while protecting Monument Objects.

Strategies:

- Review and summarize applicable existing laws and regulations for gem and mineral collection.
- Identify casual collection areas that are important to community members and organized groups.
- Complete surveys of collection areas to gauge the impact to Monument Objects from collecting activities and related access routes. Create monitoring and adaptive management for collection areas to preserve Monument Objects.
- Develop guidelines for distribution to local organized clubs and individuals outlining best practices for casual collection, guidelines and process for commercial collection, and existing rules and regulations.
- Identify opportunities for collaboration with rock hound organizations to develop interpretive materials and displays to educate the general public and provide avenues for youth engagement.

11.2.8 Drones

There are now more unmanned aircraft systems (UAS) in the United States than manned aircraft. Recreational drone use is increasing, and standards are needed to ensure the protection of wildlife and resources, as well as public and agency safety. Flying UAS is permitted on some BLM lands across the nation, but this topic may require additional scrutiny in future monument management discussions. The following guidelines are recommended to ensure both safety and the protection of resources in the Monument.

Recommendations:

- No UAS should be permitted over Congressionally designated wilderness areas or primitive areas.
- No UAS should be permitted near wildlife, as this can create stress leading to significant harm and even death. Intentional disturbance of animals during breeding, nesting, rearing of young, or other critical life history functions is not allowed.
- Follow state wildlife and fish agency regulations on the use of UAS to search for or detect wildlife and fish.
- Launch your UAS more than 100 meters (328 feet) from wildlife. Do not approach animals or birds vertically with your UAS.
- Never fly your UAS over or near any fire (wildfire or prescribed) or search and rescue operation. UAS flights over fire operations disrupt aerial firefighting operations and create hazardous situations.
11.2.9 Overflights

Overflights over Mojave Trails National Monument are permitted for the following purposes, which are consistent with the Proclamation.

- The operation or maintenance of, or with the replacement, modification, or upgrade within or adjacent to an existing authorization boundary of, existing flood control, utility, pipeline, or telecommunications facilities that are located within the Monument in a manner consistent with the care and management of the Monument Objects.
- The expansion of existing flood control, utility, pipeline, or telecommunications facilities located within the Monument, as well as new facilities that may be constructed within the Monument, but only to the extent consistent with the care and management of the Monument Objects.
- Low-level overflights of military aircraft, the designation of new units of special use airspace, the use or establishment of military flight training routes over the lands reserved by this Proclamation, or related military uses, consistent with the care and management of the Monument Objects.
- Restricted airspace established by the Federal Aviation Administration. Further, nothing in this Proclamation shall preclude (i) air or ground access for existing or new electronic tracking and communications; (ii) landing and drop zones; and (iii) readiness and training by the U.S. armed services, joint and coalition forces, including training using motorized vehicles both on and off road, in accordance with applicable interagency agreements.
- Emergency response activities within the monument, including wildland fire response.

11.2.10 Shooting

11.2.10.1 Hunting

Objective: Maintain hunting access in Mojave Trails National Monument.

Strategy:

- Work with local wildlife and sportsmen’s groups to identify relevant issues related to access for hunting (i.e., water for wildlife, migration corridors, vehicle access routes).

Objective: Formalize a monitoring and management program to maintain healthy wildlife populations.

Strategy:

- Coordinate with the California Department of Fish and Wildlife

11.2.10.2 Target

Objective: Assess impacts of target shooting on Monument Objects.

Strategy:

- Review and summarize applicable existing laws and regulations for target shooting (CA-BLM Information for shooting).
Restrictions by County or Other Locality

**California Condor Range:** Since July 1, 2008, the use of projectiles containing lead when hunting big game and nongame species in an area designated as the California condor range have been prohibited by the California Fish and Game Commission.

**Riverside County:** Shooting is restricted in any developed recreational area; within 300 yards of any building, house, dwelling place, corral, feed yard, park, public campground, state riding and hiking trail, or public road; within 1 mile of any incorporated city; between one-half hour after sunset to one-half hour before sunrise. (See RC Ord. 514.10 for closed areas, exceptions, and additional details).

**San Bernardino County:** It is unlawful to shoot or discharge any firearms between one-half hour after sunset and one-half hour before sunrise of the following day in all areas of San Bernardino County described in §22.0101 through §22.0105 (§22.0108 Prohibition of Night Shooting). ([San Bernardino County Recreation Shooting Regulation Map](https://example.com)).

**Other:** BLM permanent closure order and other regulations prohibit target shooting in the following areas:

- Santa Rosa & San Jacinto Mountains Natl. Monument—lands within the monument boundary,
- Dos Palmas Preserve—lands within the developed recreational area boundary,
- Big Morongo Canyon Preserve—lands within the developed recreational area boundary.

**Strategies:**

- Identify areas previously used for target shooting.
- Complete surveys of target shooting areas to gauge the impact on Monument Objects from shooting activities and related activities. Adjust closures to target shooting as needed to protect Monument Objects.

### 11.2.11 Fire Management

The entire monument is currently managed under the [2018 Strategic Fire Plan for the San Bernardino Unit](https://example.com). This is a joint management plan that enables and guides joint agency fire management efforts within Inyo, Kern, and San Bernardino counties.

Fire management within the monument would be closely tied to invasive grass management, as that is one of the primary causes for increases in fire frequency and magnitude. ([Brooks, M.L. & Matchett, J.R., 2006](https://example.com)). Brooks & Matchett found that the majority of fires in the Mojave Desert occur within blackbrush vegetation communities, which have a higher species richness than the plant communities that form during post-fire recovery. The following recommendations are limited to blackbrush communities within the monument, but the principles likely correlate to other plant communities given the desert’s generally long recovery time.

The federal Joint Fire Science Program released a report with management implications and recommendations for fire management based on three conditions within blackbrush communities:
**Condition Class 1:** Plants and fire regime are within historic ranges. The fire return interval may be greater than 100 years.

**Recommendation:** Suppress “human-caused fires but encourage managers to let wildfires ignited by lightning to burn, unless large populations of non-native grasses are present. Prescribed fires should not be set, except for research purposes” (Fire Science Brief, Issue 53, June 2009, pg. 4).

**Condition Class 2:** Plants and fire characteristics are moderately altered from their historic range; this can include overgrazed, prescribed burned, or other lightly disturbed areas.

**Recommendation:** “Exclude all wildfires and using prescribed fire only for research. Livestock grazing and an array of other disturbances should be limited as much as possible on stands where early, or mixed early and late stage plant communities are growing” (Fire Science Brief, Issue 53, June 2009, pg. 5).

**Condition Class 3:** Plants and fire regime are significantly altered from historic ranges. Multiple burns have occurred within the last century, and the landscape is dominated by non-native annuals and early succession perennials.

**Recommendations:** “Suppress wildfires and using prescribed fire only for research” (Fire Science Brief, Issue 53, June 2009, pg. 5).

### 11.2.11.1 Travel Management General Approach/Overarching Framework

In developing an approach to travel management for the Mojave Trails National Monument, BLM must focus on its overarching obligation to protect Monument Objects, as required by the Monument Proclamation (Proclamation 9395), the Antiquities Act of 1906 (16 U.S.C. §§ 431-433) and the Federal Land Policy and Management Act (42 U.S.C. § 1701). In addition, when considering how to manage motorized use in the Monument, BLM is further guided by the Proclamation’s specific direction to “prepare a transportation plan that designates the roads and trails where motorized or non-motorized mechanized vehicle use will be permitted.” Finally, BLM must also comply with applicable executive orders and regulations, which require the agency to designate areas and routes for motorized use in a manner that minimizes: (1) damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability; (2) harassment of wildlife or significant disruption of wildlife habitats, especially endangered or threatened species and their habitats; and (3) conflicts between OHV use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors (43 C.F.R. § 8342.1; Executive Order No. 11644, Feb. 8, 1972, 37 F.R. 2877, as amended by Executive Order No. 11989, May 24, 1977, 42 F.R. 26959).

Overall, this requires the BLM to ensure that travel planning will best fulfill the purposes of managing the Mojave Trails National Monument for protection and preservation of its natural, cultural, historic, and scientific values by first considering the presence of the Monument Objects and bearing in mind that travel should be permitted as it best supports protection of those values, not presumed to continue merely because it previously existed at some point or in some way. A key example to avoid in this regard would be the existing Western Mojave Travel Plan and ongoing Western Mojave Route Network Project, which overlap with a portion of the Mojave Trails National Monument. This effort is fraught with
undocumented, user-created routes, as well as routes that the BLM has been unable to show meet the minimization criteria. These routes should not be a starting place for the travel plan for a national monument. In this monument, the BLM should start from Proclamation 9395.

This is an opportunity to design a route system that identifies where, when, and how travel should be authorized to provide the minimum route network necessary to support enjoyment of the Monument while minimizing impacts and risk of harm to Monument Objects, and to be sustainable in terms of a size BLM can monitor and manage.

11.2.11.2 Process for Developing Minimum Route Network

A “minimum route network” is defined as the smallest system of routes designed to provide for the enjoyment of the designated area without compromising the conservation, protection, and enhancement of the resources that the area was established to protect. BLM uses the term “route” to include roads, primitive roads, and motorized trails.5

Mojave Trails National Monument prohibits the use of motorized vehicles not on “roads.” According to BLM policy, a “road” is 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.”6

Since impacts from motorized use are associated with roads, primitive roads, and trails, the term “minimum route network” best encompasses the types of features and use that need to be limited.

The use of designated routes can conflict with the resources and other users of national monuments and national conservation areas. The 15-Year Strategy for National Conservation Lands states, “BLM will only develop facilities, including roads, on NLCS lands where they are required for public health and safety, are necessary for the exercise of valid existing rights, minimize impacts to fragile resources, or further the purposes for which an area was designated” (NLCS Strategy, Goal 1F(2)) (emphasis added).

The BLM considered an alternative for a minimum route network in the Ironwood Forest National Monument Resource Management Plan.7 This alternative provides the minimum route network necessary for the management of the monument, including administrative and other access needs.8

The Draft RMP/EIS for San Juan Islands National Monument includes an alternative for a minimum trail network (Draft RMP/EIS, p.35). Other existing transportation plans that incorporate similar concepts and could be readily updated to comply with a minimum route network policy are those for the Carrizo Plain National Monument and the Grand Staircase-Escalante National Monument.

5 65 Fed. Reg. 77,698, 77,715 (Dec. 12, 2000); (Advisory Council on Historic Preservation describing inventory requirement); see also SUWA, 981 F. Supp. 2d at 1109-10 (where BLM failed to conduct a reasonable and good faith inventory effort, its “finding that there were likely no adverse effects . . . was arbitrary and capricious”).

6 (MWA, 725 F.3d at 1006-09); (“BLM is required to conduct Class III inventories for roads, ways and airstrips that have not been surveyed previously or were surveyed decades ago”); SUWA, 981 F. Supp. 2d at 1108-10 (“BLM’s failure to conduct a Class III survey of the designated routes . . . fails to meet the requirements of NHPA.”).

7 See, e.g., Hartley et al., Ecological Effects of a Transportation Network on Wildlife, at 15: “Transportation access...increases vandalism, theft, and damage to archaeological and cultural sites.”
As described above, the Monument can be separated into zones that will reflect levels of protections, BLM’s management of travel needs, and visitor experiences. These zones, reflected in proposed management zones on the corresponding maps are referred to as Wilderness, Primitive, Backcountry, Passage, and Frontcountry zones. For completing travel planning, travel management will be guided by protection of Monument Objects and management goals of the zones. In addition, BLM should focus travel planning in key decision areas. Key decision areas are defined as those areas most important for travel planning decisions because they are:

1. Places where the public already has a history or pattern of visiting, where there have already been resource conflicts;
2. Places the public already has a history or pattern of visiting, where there have not yet been any apparent resource conflicts, but where there could be if usage/visitation increased;
3. Places at which there will likely be an increase in visitation, due to the implementation of the management plan (i.e., visitor center/kiosk, interpretive signage, etc.);
4. Places that are readily accessible and extremely sensitive such that they require proactive protection regardless of current/expected visitation.

For key decision areas, BLM will further focus on a core set of planning actions and principles, in addition to the overall priority of protecting Monument Objects, including:

- Take care not to designate redundant routes.
- Re-route or close existing routes where they are harming Monument Objects or other sensitive resources (e.g., cultural resources, wilderness characteristics, habitat) or likely to lead to off-route exploration.
- Prohibit driving in navigable washes and develop education and outreach materials related to this planning principle.
- Identify impacts to private land where routes cross private lands.
- Identify routes that are available for mountain bikes/mechanized use separately from motorized use. While these routes are not technically subject to the minimization criteria that apply to motorized use, they are still subject to Proclamation’s direction to prepare a transportation plan and to ensure that all routes are designated in a manner that protects Monument Objects. Accordingly, all designations for mountain bikes or other mechanized use must also show how they meet these criteria.
- Manage California Desert National Conservation Lands that are within the Monument boundaries to protect the nationally significant values for which they were designated, if they are distinct or supplemental to Monument Objects. Multiple uses should be prohibited if they conflict with those values.
- Manage lands with wilderness characteristics that the Desert Renewable Energy Conservation Plan (DRECP), Land Use Plan Amendment (LUPA) identified should be managed to protect those characteristics (DRECP LUPA, at 152-153).
- Create and post signage, as well as flyers to be made available in all field offices, to educate the public that motorized use is not permitted in washes (to address the change from historic practices).
• Prepare and implement closure and rehabilitation plans for unnecessary routes.
• Ensure a robust monitoring plan is in place that provides for tracking whether management actions are succeeding and outlining a method for adjusting management actions if they are not.
• Address enforcement capacity and identify approaches to supplement agency capacity (such as volunteers).
• Prepare and make available in all field offices educational flyers regarding key elements of these principles and decisions to highlight different standards for motorized and mechanized use in the Monument.

Objective:
Permit enough access via routes in the Monument while protecting the qualities for which the Monument was designated by designating a minimum route network. Designating a minimum route network in the Monument will not only help curtail the direct impacts of routes but will also help alleviate problems associated with other threats to conservation values, such as the spread of invasive species and damage to cultural resources.

Strategy:

• **Step 1:** The first step in identifying a minimum route network is to perform a spatial analysis for the inventoried route network that evaluates route densities of the area and the impacts of alternatives on the conservation values for which the designated area was established. An excellent example of this effort can be seen in *Protecting Northern Arizona’s National Monuments: The Challenge of Transportation Management*. This report documents route densities for five key species in the Grand Canyon-Parashant and Vermilion Cliffs national monuments and makes recommendations for lessening the impact of routes in these monuments without compromising access opportunities.

• **Step 2:** The second step is to apply criteria for designating a minimum route network to the planning area. This criterion appears in Goal 1F (2) of the 15-Year Strategy for BLM Conservation Lands and states that BLM would only designate roads that:
  1. Are required for public health and safety;
  2. Are necessary for the exercise of valid existing rights;
  3. Minimize impacts to fragile resources; or
  4. Further the purposes for which an area was designated.

• **Step 3:** BLM would then use the results of its analysis to update transportation management plans to designate the minimum route network for the Monument.

While transportation routes are helpful to access the many values of the national conservation lands, they can also lead to wildlife habitat fragmentation, fugitive dust, erosion, noise, conflicts with other users, and damage to other conservation values. Current BLM policy regarding management of the National Conservation Lands favors creating a system of roads that is just enough to provide access to each unit of the National Conservation Lands, but also to protect their resources and values. In order to strike the right balance of access to BLM’s conservation lands, BLM should designate a minimum route network for the Monument.
11.2.12 Minimum Route Network and Key Decision Areas

11.2.12.1 Minimum Route Network

We have prepared a preliminary minimum route network. Discussion of some of the proposed routes that should remain open, where visitor use can be actively directed and managed to support enjoyment of the monument, as well as certain routes that require closure or other changes in management due to the risks they currently pose to Monument Objects, are set out below.

The minimum route network should consist of the following roads and routes:

1. U.S. Highway 62;
2. U.S. Highway 95;
3. National Trails Highway (Historic Route 66);
4. Afton Canyon Road;
5. Amboy Road;
6. Bagdad Chase Road;
7. Basin Road;
8. Cadiz Road;
9. Crucero Road;
10. Danby Road;
11. Eagle Pass Road;
12. East Mojave Heritage Trail;
13. Essex Road;
14. Goffs Road;
15. Kelbaker Road;
16. Mojave Road;
17. Mountain Springs Road;
18. Ship Mountain Road;
19. Skeleton Pass Road;
20. Powerline Road (through the Chemehuevi Valley);
21. Water Road;
22. Roads and routes necessary to access existing pipelines, powerlines, and other utilities;

11.2.12.2 Key Decision Areas

We have identified the following key decision areas as follows.

Afton Canyon Natural Area

Known locally as "The Grand Canyon of the Mojave" for its dramatic geological formations, the Afton Canyon Natural Area is one of the only places where the Mojave River flows aboveground year-round, providing significant riparian wildlife habitat amid the desert. The area is located within California Desert National Conservation Lands. It also includes a large roadless area adjacent to the northern boundary of the Cady Mountains Wilderness Study Area (WSA), which the DRECP LUPA identified should be managed.
to protect wilderness characteristics. The area also provides landscape connectedness with adjacent wilderness and the WSA.

Since prehistoric times, the natural bounty created by this water source has made Afton Canyon a focus for people, animals, and plants. Today, people enjoy camping and picnicking at Afton Canyon Campground and rockhounding in the canyon.

There are two entrances to the portion of Afton Canyon that is within the Monument—Dunn Road and Rasor Road. The entrance most frequently used by RV/car campers and rock hounds is the Afton Canyon Road entrance, which leads directly to the developed campground. Afton Canyon Campground is also frequently used as an overnight camp for users of the Mojave Road. Those groups often camp at the two other undeveloped campgrounds.

**Zoning:** Frontcountry (campgrounds) and Backcountry

**Recommendations:** BLM should maintain recreational opportunities, focused on enjoyment of the area’s resources and values, while avoiding impacts to Monument Objects. BLM should protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. The roadless portion of the area should be managed to protect wilderness characteristics. The Afton Canyon “horseshoe” should once again be barricaded on the east and west ends so that users of the Mojave Road or other OHV users are kept from traveling in this area. An unfortunate result of the tamarisk removal in this is that the “horseshoe” has become more visible and inviting to OHV users and off-roaders.

**Amboy Crater**

Designated a National Natural Landmark in 1973, this 6,000-year-old, 250-foot high crater is one of the best examples of a volcanic cinder cone in the Mojave Desert. The lava field surrounding the cinder cone covers 24 square miles. The area has been included in the California Desert National Conservation Lands. The area is also habitat for an unusual plant assemblage, the largest known creosote rings on public lands administered by the federal government. The rings of creosote in the area have also been identified as among the world’s oldest living plants. In the spring, blankets of pink, purple, and yellow wildflowers provide a stunning contrast to the blacks and browns of the cone.

The area is accessed by a short paved road that connects to Historic Route 66. A BLM-identified trailhead begins at the parking lot. The 1.1-mile hiking trail is accessed on the west side of the crater and travels up the side into the cinder cone. There are also covered picnic tables and an ADA-compliant area for viewing the crater and surrounding landscape. Amboy Crater also includes a large roadless area.

**Zoning:** Frontcountry

**Recommendations:** BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values (such as developing a primitive campground between the trailhead parking lot and National Trails Highway) while avoiding impacts to Monument Objects. BLM should protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. The roadless portion of the area should be managed for non-motorized recreation and to retain and restore natural
values. BLM should manage the area to protect the unusual plant assemblage in this area from intensive recreation uses.

**Bigelow Cholla Garden Wilderness**

The densest concentration of Bigelow cholla cactus in the California desert is found within this wilderness and the surrounding area. Most visitors access the area by exiting I-40 at Camino and turning south to follow a dirt powerline road southeast along the boundary of the wilderness.

**Zoning:** Wilderness

**Recommendations:** BLM must continue to manage this area in accordance with the Wilderness Act, 43 CFR § 6301–6305, BLM Policy Manual 6340, and all other applicable statutes and regulations pertaining to wilderness. Fencing and/or wilderness boundary signs should be installed at the boundary of the powerline road and the wilderness to inform travelers of the boundary and to impede vehicle entry into the wilderness. Interpretive signage at I-40 and the powerline road should be installed to inform visitors of the area’s significance. Wilderness boundary signage and/or fencing should be installed to prevent entry with motorized and mechanized vehicles.

**Bonanza Spring Watchable Wildlife Area**

One of the few natural watering areas for wildlife within the Mojave Desert, the spring is the largest within 1,000 square miles. The spring is tucked into a beautiful small canyon of yellow and white limestone and provides habitat and water for a myriad of plants and animals, including migratory birds. The area can be reached by traveling on Historic Route 66 and then heading north on Danby Road.

**Zoning:** Frontcountry

**Recommendations:** BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values while avoiding impacts to Monument Objects. BLM should protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. BLM should install signage at the intersection of Route 66 and Danby Road that identifies the turnoff for Bonanza Spring Watchable Wildlife Area and warns that a 4x4 vehicle is needed. Alternatively, BLM should close the southern part of Danby Road between Route 66 and the pipeline route and have people who wish to drive to the area access it from the gas line route or by hiking from Route 66. BLM should also install signage at the viewing areas to direct overnight camping to the viewing areas rather than dispersed camping immediately next to the spring and limit the number of vehicles/people who stay overnight.

**Cadiz Dunes Wilderness (North and South Trailheads)**

The Cadiz Dunes are an extensive group of low-lying sand dunes. The highest dunes are in the northern portion and rise to about 100 feet. The area is primarily used for photography, wildlife studies, hiking, and dispersed camping. The area is accessed by using Cadiz Road and then separate dirt routes that access the north and south trailheads.

**Zoning:** Wilderness

**Recommendations:** BLM must continue to manage this area in accordance with The Wilderness Act, 43 CFR § 6301–6305, BLM Policy Manual 6340, and all other applicable statutes and regulations pertaining
to wilderness. BLM has done a good job of fencing and signing the wilderness boundaries where the dirt routes meet wilderness and trailheads. BLM should monitor these trailheads to ensure they remain intact and in good condition.

Cady Mountains (and hiking trail)

The Cady Mountains are part of the California Desert National Conservation Lands. The area provides important habitat for desert bighorn sheep, prairie falcons, golden eagles, and Mojave fringe-toed lizards. The area is also beloved by rock hounds, who often identify these mountains as the premiere location for rockhounding in the California desert. There are approximately six collecting sites, all of which are reached by exiting at the Ludlow exit from I-40 and then traveling on National Trails Highway.

Zoning: Primitive

Recommendations: BLM must manage this area to protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. The hiking trail should be formally designated for non-motorized and non-mechanized use. BLM should address a range-wide plan for bighorn sheep. BLM should seek to expand quality access to this area while also addressing private property impacts to the area (e.g., signage at boundaries with private lands, gate/fence to stop public access on private lands).

Chambless Rock Collecting Area/Trilobite Wilderness

This rock collecting area is located immediately adjacent to the Trilobite Wilderness. It is also located in the California Desert National Conservation Lands. It is a popular rock collecting area, where rock hounds search for hematite, magnetite, and epidote. Many interesting fossils can be found in the gray ridge of limestone in the area. One can access the area in Chambless by driving north from Route 66 onto Mactull Avenue.

Zoning: Frontcountry (outside of wilderness); Wilderness (inside wilderness boundaries)

Recommendations: BLM must continue to manage the Trilobite Wilderness Area in accordance with the Wilderness Act, 43 CFR § 6301–6305, BLM Policy Manual 6340, and all other applicable statutes and regulations pertaining to wilderness. BLM must manage and protect fossil resources consistent with the Paleontological Resources Preservation Act, 43 CFR 8365.1-5, and BLM Instruction Memorandum 2012-140. BLM should protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values (such as rockhounding) while avoiding impacts to Monument Objects.

Chemehuevi Valley

The Chemehuevi Valley offers outstanding camping, hiking, scenic driving, and other recreation opportunities with ample access for standard passenger vehicles off State Highway 95 and several well-maintained utility roads. Despite this excellent access, most of the area is roadless. This rare combination offers terrific opportunities for primitive recreation and solitude. The area is part of the California Desert National Conservation Lands and provides connectivity between the Stepladder Mountains Wilderness and Chemehuevi Mountains Wilderness.
**Zoning:** Frontcountry along Highway 95 and major roads; Backcountry in the vast roadless areas

**Recommendations:** BLM should protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values while avoiding impacts to Monument Objects. BLM should manage the roadless area for non-motorized recreation and to retain and restore natural values. Little-used spur roads should be closed in Backcountry zones. The Frontcountry site known as Snaggletooth deserves special attention to prevent vandalism and illegal dumping.

**Crucero Road (including Tonopah and Tidewater Railroad remains)**

Crucero Road provides a scenic method to travel between I-40 and I-15 and many places in between. Remnants of the Tonopah and Tidewater (T&T) Railroad run adjacent to Crucero Road and can be seen and visited as one drives on Crucero Road. One of three railroads built to cross the Death Valley region to transport borax and other mined products, it operated from 1907 to 1940. Most of the rails and ties were salvaged during World War II. This area is part of the California Desert National Conservation Lands. The railroad remains are in an area known as Sleeping Beauty, which the DRECP LUPA specified should be managed to protect wilderness characteristics. (See discussion of Sleeping Beauty below.)

A high clearance 4x4 vehicle is necessary for travel on Crucero Road. Primary access points are from the Ludlow exit on I-40, The Mojave Road, and the exits used to access Afton Canyon (see above).

**Zoning:** Passage

**Recommendations:** BLM should protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values while avoiding impacts to Monument Objects. Interpretive signage should be installed at the most intact segment(s) of the T&T Railroad. Illegal motor vehicle travel frequently takes place on Broadwell Dry Lake. Barriers should be installed along the border of Crucero Road and Broadwell Dry Lake to impede vehicle traffic on the lake. Signage should also be installed to inform travelers that travel on the lake is prohibited and to clearly mark the western boundary of the Kelso Dunes Wilderness along Crucero Road.

**East Mojave Heritage Trail/Tan Tan Spring**

Tan Tan Spring, located in the Sacramento Mountains, is an area that is sacred to local Native American tribes. This riparian area is located within California Desert National Conservation Lands. It is currently being vandalized and destroyed. Numerous illegal user-created trails that have been created as unnecessary offshoots to the East Mojave Heritage Trail are exacerbating damage to this important riparian area.

**Zoning:** Passage (Trail, only)

**Recommendations:** BLM should protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values while avoiding impacts to Monument Objects. BLM needs
to close all motor vehicle access to the spring with hard barricades and signage and monitor the area to ensure the barricades and signs remain intact and in good condition. The East Mojave Heritage Trails should be re-routed to bypass the barricaded area around the spring.

**Goffs Cultural Center (Schoolhouse)**

The center features a restored schoolhouse, which is listed on the National Register of Historic Places. The schoolhouse served families of railroad employees, miners, and other settlers in the 1800s. The center houses a library with an extensive collection of historical materials. The surrounding grounds and gardens provide a display of mining and homestead relics. A Desert Training Center airstrip is also located in Goffs. This area is part of the California Desert National Conservation Lands, although it sits on private lands. The center is accessed by traveling north on Mountain Springs Road from I-40 or traveling north on Goffs Road from Route 66.

**Zoning:** N/A

**Recommendations:** BLM should install signage at the boundary of the Monument and the private lands to inform Monument visitors of that boundary and to protect against trespass onto private lands.

**Marble Mountain Rock Collecting Area**

This rock collecting area is part of the California Desert National Conservation Lands. In addition to the many trilobite fossils found here, this area yields green epidote, dolomite, chalcedony, marble, garnet, geodes, and gold. One can access the collecting sites in the northern Marble Mountains by way of Kelbaker Road and a pipeline road which runs along the northern border. The southern sites are accessed by using any of several dirt routes along National Trails Highway before and after Chambless.

**Zoning:** Frontcountry

**Recommendations:** BLM must manage and protect fossil resources consistent with the Paleontological Resources Preservation Act, 43 CFR 8365.1-5, and BLM Instruction Memorandum 2012-140. BLM should install adequate signage to differentiate between the southern collecting area and the Marble Mountain Fossil Bed ACEC to protect important paleontological resource values such as the Marble Mountain trilobite site, Latham Shale, and any others within the ACEC. BLM should also protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. BLM should maintain recreational opportunities focused on enjoyment of the area’s resources and values (such as rockhounding) while avoiding impacts to Monument Objects.

**Mojave Road/Old Spanish National Historic Trail**

Formerly the Mojave Trail, this is a historic route and present-day dirt road across what is now the Mojave National Preserve and Mojave Trails National Monument. The road once ran from Fort Whipple, near Prescott, Arizona, to Drum Barracks, just south of Los Angeles. For thousands of years, Native Americans traveled by foot between California’s coast and the Colorado River region. This trail later became a trade route used by Spaniards and Mexicans. It essentially overlaps The Mojave Road in the Monument. Today, 130 miles of it remain, beginning at Ft. Mojave Indian Reservation on the Colorado River and ending near Camp Cady about 30 miles east of Barstow. The rough road is traveled by hundreds of OHV enthusiasts, history buffs, and desert explorers every year.
Access to the portion of Mojave Road that is within the Monument is obtained by either driving on Mojave Road from outside of the Monument, or by exiting I-15 at either Dunn Road, Afton Canyon Road, Basin Road, or Rasor Road.

**Zoning:** Passage

**Recommendations:** BLM should install signage that informs travelers of the Mojave Road to know when they are entering and leaving the Monument. BLM needs to work with the NPS to appropriately co-manage the Mojave Road with the Mojave National Preserve, especially to keep this historic trail in historic alignment. BLM should install signage to discourage entry at Afton Canyon Road to reduce motor vehicle entry into the Mojave River.

**National Trails Highway (Historic Route 66)**

The longest stretch of undeveloped Route 66 lies within Mojave Trails National Monument. This route, established and designated in 1926 as Route 66, was decommissioned in the 1970s after the completion of Interstate 40 made it obsolete. Each year, numerous visitors from all over the world come to travel Route 66, especially this stretch of the historic route. Car rallies and other Route 66 events are often held here.

When BLM assigns a Visual Resource Management (VRM) Classification(s) to the Route 66 corridor, BLM should keep in mind the fact that the viewshed along this historic route is one of the key factors, if not the key factor, that this area receives visitors from all over the world each year. The stretch of Route 66 between Ludlow and Essex is the longest undeveloped section of Route 66 in existence. As stated in the Proclamation, it offers, “a glimpse into what travelers experienced during the peak of the route’s popularity in the mid-20th century.” The route easily fits within the definition of an “All-American Road” given its outstanding scenic and historic attributes.

**Zoning:** Passage

**Recommendations:** Despite the fact that Route 66 is a paved and primary road that traverses the Monument, it would be appropriate for BLM to classify as Class I all natural features in all units that are in the foreground and middle ground of visibility of travelers on Route 66, and perhaps all units that are within the background of visibility as well. This is true regardless of whether those units are in a Wilderness or Primitive zone. Should any man-made structures of historical interest be located on federal lands within the viewshed of Route 66, BLM should classify those as Class II, allowing for restoration with minimal impacts on the viewshed. It is imperative that BLM’s management of the Route 66 corridor preserve the existing character of the landscape, given the aesthetic and historical significance of the corridor.

The scenic quality along that stretch of Route 66 is outstanding. The Proclamation states that it offers “spectacular and serene desert vistas.” Multi-colored mountains, shifting sand dunes, cinder cones and lava flows, ghost towns, and wide-open desert expanses tantalize the minds and experiences of those who travel along this route.

In addition, public concern for this scenic quality is very high. As previously stated, this scenic viewshed is the primary draw for out-of-state and foreign visitors. Local businesses and economies thereby derive
great benefits from this tourism, thus increasing the concern among local residents for maintaining and protecting this important and special viewshed.

In order to more readily allow for repairs of washed out bridges along Route 66, the rights-of-way should be expanded around all bridges.

**Pisgah Lava Flow**

Research at Pisgah Lava Flow has provided significant information about the formation of lava tubes and the subsurface geology of the area. As such, Pisgah is a frequent destination for geology students and other classroom groups. Numerous cultural resources are located in this area. Access to the area is off of Historic Route 66 (numerous trailheads), just east of Newberry Springs. An eastern portion of the lava flow is located within California Desert National Conservation Lands. The same portion of the flow has also been designated as the Pisgah Research Natural Area and Area of Critical Environmental Concern due to its important biological values, including habitat quality, populations of sensitive species, and landscape connectivity.

**Zoning:** Frontcountry and Backcountry

**Recommendations:** BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values while avoiding impacts to Monument Objects. BLM should also protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. BLM should address issues with adjacent private property owners.

**Ragtown Historic Mining Area**

Ragtown was a mining town in the late 1800s. John Sutter found gold in the area in about 1898. It is now a ghost town. Access to this area is made by traveling south from Historic Route 66 on Bagdad Chase Road.

**Zoning:** Frontcountry

**Recommendations:** BLM should maintain and improve recreation opportunities focusing on the enjoyment of the area’s historical character while preserving Monument Objects. Ragtown would be an appropriate area to consider for camping, trailhead, and interpretive activities.

**Rasor Off-Highway Vehicle Recreation Area (Boundary with Mojave Trails National Monument)**

This 22,500-acre open OHV area is reached by three primary entry points: by traveling into the area from the Mojave Road or by exiting at Basin Road or at Rasor Road on Interstate 40. This area holds the Mojave River and the Old Spanish National Historic Trail. The area abuts the Mojave National Preserve on its eastern boundary and the Mojave Trails National Monument at or near its southern boundary. In addition, the Mesquite Hills Crucero Hills ACEC and Mojave Fringe-toed Lizard ACEC currently exist at or near the area’s southern boundary.

**Zoning:** N/A

**Recommendations:** BLM should install as much fencing as possible along the northern border of the Monument that abuts the OHV area, with a limited number of entry points into the Monument, so that
riders are aware that they are no longer in the open OHV area and are directed to enter the Monument at a few specific locations. In addition, BLM shall install signage at all entry points from the OHV area into the Monument, advising riders that they have left the open area and are now within a limited use area within the monument.

BLM should also prioritize the completion of a management plan for the Rasor OHV area.

Sheep Hole Mountain Trailhead

This trailhead is accessed from Amboy Road.

Zoning: Frontcountry

Recommendations: BLM should maintain and improve recreation opportunities focusing on the enjoyment of the area’s scenic vistas and hiking opportunities while preserving Monument Objects. Sheep Hole Pass would be an appropriate area to improve a parking lot, trailhead, and picnic area, which would be easily accessible by the general public travelling along Amboy Road.

Sheep Hole Valley Wilderness

The vast Sheep Hole Valley Wilderness offers visitors extremely varied terrain ranging from rugged granite mountains to sweeping valleys and bajadas. The area is most frequently accessed from Amboy Road or State Highway 62. Backpackers have been known to hike from one road to the other with a car shuttle. The wilderness is experiencing moderate vehicle trespass.

Zoning: Wilderness

Recommendations: BLM must continue to manage lands within the boundaries of the Sheep Hole Valley Wilderness in accordance with the Wilderness Act, 43 CFR § 6301–6305, BLM Policy Manual 6340, and all other applicable statutes and regulations pertaining to wilderness. BLM should work with volunteers and others to monitor fencing and other vehicle barriers and to maintain signage. BLM should identify problem areas for vehicle trespass and work with partners to install signage and/or barriers or take other appropriate steps to protect this wilderness.

Sleeping Beauty

Sleeping Beauty is west of Crucero Road, south of the Cady Mountains WSA. The area provides connectivity between the Cady Mountains WSA and the Kelso Dunes and Bristol Mountains Wilderness areas. The area has some of the best tortoise habitat in the southeast Mojave Desert. Because this area spans a transition between the lower Sonoran Desert environments to the south and the higher Mojave Desert to the north it includes prehistoric trails and evidence of trading, habitation, and migration of various Native American tribes. The area is part of the California Desert National Conservation Lands and consists of a roadless area which the DRECP LUPA specified should be managed to protect wilderness characteristics. Sleeping Beauty offers easy hiking, backpacking, and camping opportunities with sweeping vistas that provide opportunities for solitude. Several little-used vehicle routes, many of which were originally constructed to access mines (which are no longer in operation) still intrude into the area.

Zoning: Mostly Primitive, with Backcountry zoning at rock collection areas and Frontcountry zoning along Route 66
**Recommendations:** BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values while avoiding impacts to Monument Objects. BLM should protect the nationally significant values for which this area was included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects. The roadless portion of the area should be managed to protect wilderness characteristics.

**World War II Patton Training Camps**

In 1942 and 1943, much of the Mojave Desert was used for training U.S. troops for World War II combat in North Africa. General George Patton chose the Mojave Desert as the location for the Desert Training Center, located in the California and Arizona deserts, and established a total of 11 training camps. Five of the training camps are located within the Monument, Camp Iron Mountain having the most intact and largest artifacts—two altars and a large topographic map. All of these camps are living museums where one can explore on foot and imagine the harsh climate and other challenges that the soldiers had to endure. Some of the camps located within the Monument boundaries are also located in California Desert National Conservation Lands.

Access to Camp Iron Mountain and Camp Granite are from dirt routes that intersect with Highway 62. Access to Camp Clipper and Camp Essex are from dirt routes that intersect with Highway 40. Camp Ibis is accessed from Highway 95.

**Zoning:** Frontcountry and Backcountry

**Recommendations:** BLM should maintain recreational opportunities focusing on enjoyment of the area’s resources and values while avoiding impacts to Monument Objects. BLM should also protect the nationally significant values for which some of these camps were included in the California Desert National Conservation Lands, if those values are distinct or supplemental to Monument Objects.
This map shows the location of BLM livestock grazing allotments within the boundaries of Mojave Trails National Monument. Grazing may impact resources and Monument Objects.

**Recommendation:** Reduce resource and Monument Object impacts from grazing allotments.

**Strategies:**

- Allow for voluntary permanent relinquishment of the Lazy Daisy allotment.
- Ensure allotments are managed under an up-to-date allotment management plan.
- Protect local springs with fencing and water improvements to protect spring vegetation and riparian resources.
- Monitor impacts from allotment use on desert tortoise critical habitat.
- Adaptively manage public lands in the Monument where impacts are occurring to prioritize desert tortoise and other Monument Objects.
Rights-of-Way, Utility Corridors and Communication Sites

Rights-of-way (ROWs) for utilities and communication sites are essential developments for modern civilization in the U.S. The California desert has traditionally been utilized heavily and has had its landscapes and valleys fragmented by parallel ROWs.

Objective: Strategically plan utility corridors and ROWs to minimize cumulative impacts to Monument Objects and visual resources.

Strategies:

- Combine utilities into single corridors.
- New utilities should be incorporated into existing rows.
- Do not allow new rows/corridors in Backcountry and Wilderness zones.

References


California Department of Fish and Wildlife. 2018. Natural Communities. Available online at https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities


Grover, Mark, C. Desert Tortoise: Status of Knowledge Outline with References, USDA-USFS, July 1995


GIS Analysis completed by Kurt Menke of Bird’s Eye View GIS for the California Wilderness Coalition on 12/10/13


Kaldenberg, Russell. 2015. Mojave Trails National Monument Proposal- Appendix B.


Northwestern Defense Center v. Bonneville Power Admin., 117 F.3d 1520, 1538 (9th Cir. 1997)


von Till Warren and Ralph J. Roske 1981 Cultural Resources of the California Desert, 1776-1980:


LEGISLATION, LEGAL CASES, FEDERAL REGISTER NOTICES AND EXECUTIVE ORDERS


National Environmental Policy Act (NEPA), 42 U.S.C. § 4321


Ore. Natural Desert Ass’n v. BLM, 625 F.3d 1092, 1122 (9th Cir. 2008)


13 Appendices


ESTABLISHMENT OF THE MOJAVE TRAILS NATIONAL MONUMENT

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA A PROCLAMATION

The Mojave Trails area of southern California is a stunning mosaic of rugged mountain ranges, ancient lava flows, and spectacular sand dunes. It is a landscape defined by scarcity and shaped by travel. The area exemplifies the remarkable ecology of the Mojave Desert, where the hearty insistence of life is scratched out from unrelenting heat and dryness. This punishing environment has also forged the unique human history of the area, from ancient settlements uprooted by a changing climate to the armies of General George S. Patton, Jr., as they trained for battle in North Africa. With historic American trading routes, trails followed by Spanish explorers, a transcontinental rail line, and the Nation's most famous highway, the Mojave Trails area tells the American story of exploration, migration, and commerce. The Mojave Trails area is an invaluable treasure and will continue to serve as an irreplaceable national resource for geologists, ecologists, archaeologists, and historians for generations to come.

The Mojave Trails area has been a focus of geological research for decades. This unique landscape contains a stunning diversity of lava flows, mountains, playas, sand dunes, bajadas, washes, and other features. The area contains a number of significant sand dune features, most notably the stunning Cadiz Dunes, which have been extensively studied. The mountains of the Mojave Trails area include several significant formations, and seismologists have studied this area for insight into faulting, tectonics, and magmatism. A number of young volcanoes and their associated lava flows in the area have been heavily studied by volcanologists. Amboy Crater, designated as a National Natural Landmark in 1973, has been the focus of research on a number of volcanic phenomena. The Pisgah Volcano lava flow's vast network of lava tubes constitutes southern California's highest density of caves and is used by both speleologists and recreational cavers. The area's terrain and geology have provided a surrogate for lunar and Martian landscapes, and many of the robotic and imaging technologies used to better understand volcanism and Aeolian processes have been developed and tested in the Mojave Trails area.
Outstanding paleontological resources can be found throughout the Mojave Trails area. The Cady Mountains contain important fossil fauna assemblages dating to the Miocene Period. The Marble Mountain Fossil Bed area contains one of the classic Cambrian trilobite fossil sites in the Western United States. Set in the green-brown lower Cambrian Latham Shale, the fossil beds also contain the fossilized remains of brachiopods, mollusks, echinoderms, and algal bodies that are of great interest to paleontologists. The southern Bristol Mountains contain Tertiary fossils such as camel tracks, invertebrates, and numerous plants; this fossil history has also been used to understand the climate history of the Mojave Desert. Significant vertebrate fossils and other fossil resources have also been identified in Piute Valley and Cadiz Valley as well as the Ship Mountains, Little Piute Mountains, and Sacramento Mountains.

The Mojave Trails area has been important for ecological research, including studies on the effects of climate change and land management practices on ecological communities and wildlife. It provides opportunity for further research on ecological connectivity in the Mojave Desert region, as it is among the most ecologically intact areas in southern California. The species that have managed to thrive here are specialists in perseverance and resourcefulness and are remarkable for their ability to withstand the desert extremes. The area's scarce springs and riparian areas such as Afton Canyon, Chuckwalla Spring, Hummingbird Spring, Barrel Spring, and Fenner Spring provide refuges for a wide variety of plants and animals. The complex network of groundwater underlying the Mojave Trails area has been the subject of past and ongoing hydrological study. Underground aquifers feed springs and seeps that are important for sensitive ecosystems and wildlife, though specific connections are not yet well understood.

Rare plant species such as the scrub lotus, rosy two-tone beardtongue, whitemargin beardtongue, Emory's crucifixion-thorn, small-flowered androstephium, white-margined penstemon, and Borrego milkvetch rely on the specific habitat types found in the Mojave Trails area. The Piute Valley area in the northeastern part of the Mojave Trails area is home to the northernmost occurrences of smoke trees in the California desert, as well as the Homer Mountain Ocotillo Assemblage. The lowlands and middle elevations are also home to other unique or ecologically significant plants such as the endemic Orocopia Mountains spurge. Numerous cactus species are also found here, including the densest concentration of Bigelow cholla cactus in California. Ongoing research in the Mojave Trails area has identified other plant species that are new to science, many of which have not yet been described.

Birds including the endangered Least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo depend on this area, as do raptors such as the burrowing owl, red-tailed hawk, golden eagle, American kestrel, and prairie falcon. Fragile desert fish species such as the bonytail chub rely on the scarce waters of the desert riparian ecosystems. A wide variety of fascinating native mammal species
can be found in the Mojave Trails area, including the kit fox, ringtail, American badger, mountain lion, and bighorn sheep. Reptiles and amphibians, including the Mojave Desert's largest lizard, the chuckwalla, have been extensively studied in the Mojave Trails area. The area contains some of the Mojave Desert's best habitat for the threatened desert tortoise and provides important dispersal corridors for that fragile species. An unusual community of invertebrates associated with lava tubes in the Pisgah area offers an ongoing opportunity for entomological research.

Humans have lived in and moved through the Mojave Trails area for more than 10,000 years. The archeological record tells of a human existence shaped by a changing climate. During the Paleo-Indian period, now-dry lakes provided fresh water to small groups of nomadic people and the animals they hunted. From around 7,000 to 2,000 BC, rising temperatures resulted in a change from wet to dry conditions. Associated ecological changes in the region led to new patterns of subsistence for native peoples. Although people remained closely tied to water sources following the temperature increase, desert inhabitants adjusted their diets to rely more heavily on plants and fish, invented new tools, and expanded the sizes of their social groups. During the Formative Period (2,500 to 1,500 BC), dry conditions meant the inhabitants of the Mojave Desert remained in small groups. They relied heavily for their survival on the Mojave River, a name derived from the traditional name for these people, Pipa Aha Macav ("the people by the river"). The Mojave people left their mark on the landscape through petroglyphs, pictographs, old trails, and stonework, some of which can still be found today, especially near springs and rivers and along the shores of now-extinct lakes.

The Mojave were not the only people to use or pass through this landscape. Ancestors of the Chemehuevi Indian Tribe, a branch of the Southern Paiute, have been persistent occupants of the Mojave Desert for thousands of years. Sacred Chemehuevi trails are often tied to traditional and ceremonial songs. The Salt Song Trail, one of the longest song trails of the Chemehuevi people, passes through the Mojave Trails area near the town of Fenner and the Ward Valley. Natural land patterns form the route of this trail, with specific songs sung at specific wayside locations. Other Native Americans who have lived in or passed through the Mojave Desert include the Shoshone, Serrano, Kawaiisu, and the Paiute. The Ward Valley, located between the Old Woman and Piute Mountains, is sacred to a number of these tribes, as are the Mesquite and Crucero Hills, which contain over 50 archaeological sites including petroglyphs, milling stations, temporary camps, intaglios, lithic scatters, and pottery dating as far back as 4,000 years.

The Mojave Trails area has been a critical travel corridor for millennia, linking the Pacific Coast to the deserts of the southwest and beyond. The Mojave Indian Trail is the earliest known travel route passing through the Mojave Trails area, used by Native Americans for thousands of years and by early Spanish explorers and traders. In 1829, Mexican explorer Antonio Armijo pioneered the Old Spanish
Trail through this area. Evidence of the trail, now designated a National Historic Trail, can still be found at Afton Canyon.

By the end of the 19th century, transcontinental rail travel had changed the American West in profound ways. In 1882, Southern Pacific constructed a railroad route from Barstow to Needles. In addition to the major rail stops established at Needles and Barstow, several smaller towns and rail stops were established along this stretch, including the alphabetically named Amboy, Bristol, Cadiz, Danby, Essex, Fenner, and Goffs. These towns remain, some as inhabited hamlets and others as abandoned ghost towns, and some historical artifacts from the original rail line still exist, including original rail ties and track and later improvements of communications poles, insulators, and wires.

A modest dirt road -- an original trackside component of the railroad project -- would later become the most famous highway in America. In 1911, in the infancy of the automobile era, the County of San Bernardino paved the first stretch of that road from Barstow to Needles. The next year, this stretch became part of the National Old Trails Road, which extended more than 3,000 miles from New York, New York, to Los Angeles, California, and connected the American coasts by pavement for the first time. In 1926, the road was officially designated as U.S. Highway 66, a designation soon known around the world as Route 66. During the 1930s, Route 66 became an important route for migrants escaping economic hardships of the Great Depression and droughts in the Central plains. As the national economy rebounded following World War II, Americans took to the highways in unprecedented numbers. The road became an American icon, earning the nickname the "Main Street of America" and inspiring popular culture through music, literature, and film.

The popularity of Route 66, however, hastened its downfall; increasing traffic quickly exceeded its two-lane capacity. In 1985, Route 66 was officially decommissioned, leaving behind a powerful albeit fragmented narrative history of America's automobile culture of the first half of the 20th century and its legacy of related commerce and architecture. The Mojave Trails area contains the longest remaining undeveloped stretch of Route 66, offering spectacular and serene desert vistas and a glimpse into what travelers experienced during the peak of the route's popularity in the mid-20th century. Today, the ghost towns along this stretch of Route 66 are a visual legacy of how the automobile shaped the American landscape.

In addition to its important role in the transportation history of the United States, the Mojave Trails area is a unique resource for understanding one of the most formative periods in American military history. During the height of World War II, the United States military recognized a need to develop a desert training program in order to prepare its troops to fight the tank armies of Nazi Germany in North Africa. Major General George S. Patton, Jr., commander of the I Armored Corps, selected the site of
the Desert Training Center in the Mojave Trails area, the largest training area in the world at the
time. More than one million troops trained in the area between 1942 and 1944, including at Camp Ibis,
Camp Clipper, Camp Iron Mountain, Camp Granite, and Camp Essex. Remnants of these camps can
still be found today, including rock-lined streets, staging areas, flag circles, altars, tent areas, and even
tank tracks on some of the area's hardpan playas.

The protection of the Mojave Trails area will 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.

WHEREAS, section 320301 of title 54, United States Code (known as the "Antiquities Act"),
authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic
and prehistoric structures, and other objects of historic or scientific interest that are situated upon the
lands owned or controlled by the Federal Government to be national monuments, and to reserve as a
part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area
compatible with the proper care and management of the objects to be protected;

WHEREAS, it is in the public interest to preserve the objects of scientific and historic interest on the
Mojave Trails lands;

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by the
authority vested in me by section 320301 of title 54, United States Code, hereby proclaim the objects
identified above that are situated upon lands and interests in lands owned or controlled by the Federal
Government to be the Mojave Trails National Monument (monument) and, for the purpose of
protecting those objects, reserve as part thereof all lands and interests in lands owned or controlled by
the Federal Government within the boundaries described on the accompanying map, which is attached
to and forms a part of this proclamation. These reserved Federal lands and interests in lands encompass
approximately 1.6 million acres. The boundaries described on the accompanying map are confined to
the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of the monument are hereby appropriated
and withdrawn from all forms of entry, location, selection, sale, or other disposition under the public
land laws, 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 or disposal for the limited purpose of providing materials for repairing or maintaining
roads and bridges within the monument consistent with care and management of the objects identified
above.
The establishment of the monument is subject to valid existing rights. If the Federal Government acquires any lands or interests in lands not owned or controlled by the Federal Government within the boundaries described on the accompanying map, such lands and interests in lands shall be reserved as a part of the monument, and objects identified above that are situated upon those lands and interests in lands shall be part of the monument, upon acquisition of ownership or control by the Federal Government.

The Secretary of the Interior (Secretary) shall manage the monument through the Bureau of Land Management (BLM) as a unit of the National Landscape Conservation System, pursuant to applicable legal authorities, to protect the objects identified above.

For purposes of the care and management of the objects identified above, the Secretary, through the BLM, shall within 3 years of the date of this proclamation prepare and maintain a management plan for the monument and shall provide for maximum public involvement in the development of that plan including, but not limited to, consultation with tribal, State, and local governments.

Nothing in this proclamation shall be construed to preclude the renewal or assignment of, or interfere with the operation or maintenance of, or with the replacement, modification, or upgrade within or adjacent to an existing authorization boundary of, existing flood control, utility, pipeline, or telecommunications facilities that are located within the monument in a manner consistent with the care and management of the objects identified above. Existing flood control, utility, pipeline, or telecommunications facilities located within the monument may be expanded, and new facilities may be constructed within the monument, but only to the extent consistent with the care and management of the objects identified above.

The Secretary shall work with appropriate State officials to ensure the availability of water resources, including groundwater resources, needed for monument purposes.

Except for emergency or authorized administrative purposes, motorized vehicle use in the monument shall be permitted only on roads existing as of the date of this proclamation.

Non-motorized mechanized vehicle use shall be permitted only on roads and trails designated for their use consistent with the care and management of the objects identified above. The Secretary shall prepare a transportation plan that designates the roads and trails where motorized or non-motorized mechanized vehicle use will be permitted.

Laws, regulations, and policies followed by the BLM in issuing and administering grazing permits or leases on lands under its jurisdiction, including provisions specific to the California Desert
Conservation Area, shall continue to apply with regard to the lands in the monument, consistent with the care and management of the objects identified above.

Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of California, including its jurisdiction and authority with respect to fish and wildlife management.

Nothing in this proclamation shall preclude low level overflights of military aircraft, the designation of new units of special use airspace, the use or establishment of military flight training routes over the lands reserved by this proclamation, or related military uses, consistent with the care and management of the objects identified above.

Nothing in this proclamation shall alter the Department of Defense's use of the Restricted Airspace established by the Federal Aviation Administration. Further, nothing in this proclamation shall preclude (i) air or ground access for existing or new electronic tracking and communications; (ii) landing and drop zones; and (iii) readiness and training by the U.S. Armed Services, Joint and Coalition forces, including training using motorized vehicles both on and off road, in accordance with applicable interagency agreements.

Nothing in this proclamation shall be construed to alter the authority or responsibility of any party with respect to emergency response activities within the monument, including wildland fire response.

Nothing in this proclamation shall be deemed to enlarge or diminish the rights of any Indian tribe. The Secretary shall, to the maximum extent permitted by law and in consultation with Indian tribes, ensure the protection of Indian sacred sites and cultural sites in 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 (42 U.S.C. 1996) and Executive Order 13007 of May 24, 1996 (Indian Sacred Sites).

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of the monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this twelfth day of February, in the year of our Lord two thousand sixteen, and of the Independence of the United States of America the two hundred and fortieth.

BARACK OBAMA
### 13.2 APPENDIX B—Mojave Trails Object Chart

| PHYSICAL ENVIRONMENT | Mountains and mountain ranges | - used for faulting, tectonics, and magmatism  
- Cady Mountains  
- Bristol Mountains  
- Ship Mountains  
- Little Piute Mountains  
- Sacramento Mountains |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Geographical</td>
<td>Sand dunes</td>
<td>- Cadiz Dunes</td>
</tr>
</tbody>
</table>
|                      | Hills | - Mesquite Hills—sacred to several Native tribes  
- Crucero Hills—sacred to several Native tribes |
|                      | Volcanoes | - Amboy Crater—National Natural Landmark since 1973  
- Pisgah Volcano lava flow  
- includes lava tubes constituting southern California’s highest density of caves  
- used by speleologists and recreational cavers  
- provided “surrogate for lunar and Martian landscapes” |
|                      | Valleys | - Piute Valley  
- Cadiz Valley  
- Ward Valley—sacred to several Native tribes |
|                      | Canyons | - Afton Canyon |
|                      | Springs | - Chuckwalla Spring  
- Barrel Spring  
- Fenner Spring |
|                      | Other | - underground aquifers  
- Bajadas |
<table>
<thead>
<tr>
<th>Landscape Features/Influences</th>
<th>Ancient lava flows</th>
<th>(−) washes</th>
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<tr>
<td>Paleontological</td>
<td>Cady Mountains</td>
<td>(−) fossil fauna assemblages from the Miocene Period</td>
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<td>Marble Mountain Fossil Bed</td>
<td>(−) has Cambrian trilobite fossil sites in Western United States (−) has fossilized remains of brachiopods, mollusks, echinoderms, and algal bodies</td>
<td></td>
</tr>
<tr>
<td>Bristol Mountains</td>
<td>(−) southern area has Tertiary fossils like camel tracks, invertebrates, and plants; used to understand Mojave Desert’s climate history</td>
<td></td>
</tr>
<tr>
<td>significant vertebrate fossils and other fossil resources</td>
<td>(−) Piute Valley, Cadiz Valley, Ship Mountains, Little Piute Mountains, Sacramento Mountains</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>(−) effects of climate change and land management practices on ecological communities and wildlife</td>
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**ARCHAEOLOGICAL, HISTORICAL AND CULTURAL RESOURCES**

<table>
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<tr>
<th>Tribal Significance</th>
<th>Southern Paiute</th>
<th>(−) ancestors of Chemehuevi Indian Tribe (−) have been desert occupants for thousands of years (−) has Sacred Chemehuevi trails which are often tied to traditional and ceremonial songs like the Salt Song Trail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shoshone, Serrano, Kawaiisu, Paiute</td>
<td>(−) have lived or passed through Mojave Desert</td>
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<table>
<thead>
<tr>
<th>Cultural Landscape/Land Use History</th>
<th>Mojave Indian Trail</th>
<th>(−) Earliest known travel route passing through area (−) used by Native Americans for thousands of years</th>
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<tr>
<td></td>
<td>Old Spanish Trail</td>
<td>(−) pioneered by Mexican explorer Antonio Armijo</td>
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<tr>
<td></td>
<td>Route 66, aka National Trails Road</td>
<td>(−) one of the most famous highways in America (−) extended more than 3,000 miles from New York, NY to Los Angeles, CA, and connected costs by pavement for the first time (−) important route for migrants escaping economic</td>
</tr>
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</table>
The hardships of the Great Depression and droughts in Central plains were significant. Decommissioned, but with undeveloped stretches offering spectacular and serene desert vistas and a glimpse of what travelers experienced during the peak of the route’s popularity.

**Desert Training Center**
- Military desert training program to prepare troops to fight tank armies of Nazi Germany in North Africa.
- Major General George S. Patton Jr., commander of the I Armored Corps, picked this site.
- Largest training area in the world at the time.
- More than one million troops trained in the area between 1942-1944, including Camp Ibis, Camp Clipper, Camp Iron Mountain, Camp Granite, and Camp Essex.
- Remnants can be found today, including rock-lined streets, staging areas, flag circles, altars, tent areas, and tank tracks on some of the area’s hardpan playas.

**Archeological Significance**

**Paleo-Indian period**
- Mojave Trail tells of now-dry lakes that provided fresh water to small groups of nomadic people and animals they hunted.

**Formative Period**
- Dry conditions changed inhabitants’ methods for survival to rely more on the Mojave River.
- People left their mark on the landscape through petroglyphs, pictographs, old trails, and stonework.

**Mesquite Hills and Crucero Hills**
- Contain over 50 archaeological sites, including petroglyphs, milling stations, temporary camps, intaglios, lithic scatters, and pottery dating as far back as 4,000 years.

**BIOLOGICAL ENVIRONMENT**

**Vegetation**
- **scrub lotus**
- **rosy two-tone beardtongue**
- **whitemargin beardtongue**
- **Emory’s crucifixion-**
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<tr>
<td>thorn</td>
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<td>smoke trees</td>
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<td>Homer Mountain Ocotillo Assemblage</td>
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<td>Orocopia Mountains spurge</td>
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<td>Cacti</td>
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<td>- includes densest concentration of Bigelow cholla cactus in CA</td>
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<td>Endangered species</td>
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<td>- Least Bell’s vireo</td>
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<td>Threatened species</td>
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<tr>
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<td>- prairie falcon</td>
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<td>- bonytail chub</td>
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<tr>
<td>- kit fox</td>
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<tr>
<td>- ringtail</td>
</tr>
<tr>
<td>- American badger</td>
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<tr>
<td>- mountain lion</td>
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<tr>
<td>- bighorn sheep</td>
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<tr>
<td>Reptiles and</td>
</tr>
<tr>
<td>- chuckwalla</td>
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<td>amphibians</td>
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### 13.3 APPENDIX C—Map Data Sources

For more information on maps/data, please contact Phil Hartger @ The Wilderness Society, phil_hartger@tws.org

<table>
<thead>
<tr>
<th>Figure</th>
<th>Data Layer</th>
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</tr>
</thead>
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<tr>
<td><strong>All Maps</strong></td>
<td>Mojave Trails National Monument Boundary</td>
<td>BLM</td>
</tr>
<tr>
<td>Figure 1, Mojave Trails NM Public Context</td>
<td>California Land Ownership</td>
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</tr>
<tr>
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<td>Arizona Land Ownership</td>
<td>BLM</td>
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<td>Nevada Land Ownership</td>
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<td>Figure 2, Mojave Trails NM California Desert Conservation Area</td>
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</tr>
<tr>
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<td>The Wildlands Conservancy</td>
</tr>
<tr>
<td>Figure 3, Mojave Trails NM Native American Reservations</td>
<td>Native American Reservations</td>
<td>USGS, Department of the Interior</td>
</tr>
<tr>
<td>Figure 4, Mojave Trails NM Historic Routes &amp; Trails</td>
<td>National Historic Trails</td>
<td>National Park Service</td>
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<tr>
<td>Figure 5, Community Engagement</td>
<td>Cities</td>
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<td>Utility Corridors</td>
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<tr>
<td>Figure 6, Proposed Management Zones</td>
<td>Management Zones</td>
<td>Digitized by The Wilderness Society</td>
</tr>
<tr>
<td>Figure 7, Sand and Dune Systems</td>
<td>Sand and Dune Systems</td>
<td>California Department of Fish and Game</td>
</tr>
<tr>
<td>Figure 8, Geologic Sites</td>
<td>Pisgah Lava Flow, Amboy Crater</td>
<td>Digitized by The Wilderness Society</td>
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<tr>
<td>Figure 9, Hydrography</td>
<td>Groundwater Basins</td>
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<td>Seeps and Springs</td>
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<td>Playa</td>
<td>National Hydrography Dataset</td>
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<tr>
<td>Figure 10, Wildlife Habitat &amp; Connectivity</td>
<td>Critical Desert Tortoise Habitat</td>
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</tr>
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<td></td>
<td>California Desert Linkage Network</td>
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<td>Bighorn Sheep Connectivity Habitat</td>
<td>BLM and The Wildlands Conservancy</td>
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<td>Desert Tortoise Reserve Type</td>
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<tr>
<td>Figure 11, Desert Training Centers</td>
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<tr>
<td>Figure 12, Vegetation Communities</td>
<td>National Vegetation Classification</td>
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<tr>
<td>Figure 13, Light Pollution &amp; Night Skies</td>
<td>Light Pollution Map</td>
<td>NASA</td>
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<td>International Dark Sky Places</td>
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<td>Figure 14, Recreation</td>
<td>Camping</td>
<td>BLM</td>
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<tr>
<td></td>
<td>Trailheads</td>
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</tr>
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<td>Figure 15, Grazing Allotments</td>
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<td>Figure 16, Lands with Wilderness Characteristics</td>
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<tr>
<td></td>
<td>Designated Wilderness</td>
<td>Wilderness.net</td>
</tr>
</tbody>
</table>
APPENDIX D—Archaeological Resources

Mojave Trails National Monument—Archeological Values

Prepared by Russell Kaldenberg, MA, RPA Past President of the Society for California Archaeology State Archaeologist for BLM, California Register of Professional Archaeologists

Introduction The cultural resources of the area have been studied for over 100 years. As early as 1854 Lieutenant A. W. Whipple and Baldwin Mollhausen noted petroglyphs and archaeological middens in the eastern Mojave Desert. Studies as early as 1898 focused on turquoise mining at Halloran Summit and rock art at various locations. “The Cave of the Giants” was the subject of an extensive newspaper article in 1903 (this cave was Mitchell Caverns). Suspected pueblo outliers in the Cronise basin and trails connecting California to the rest of the United States were the focus of studies by Malcolm Rogers during the late 1920s and work in the vicinity was undertaken during 1934 by Richard van Valkenberg and Malcolm Farmer. Agnes Bierman and Albert Mohr documented sites during 1948 and 1949. Jack Smith documented prehistoric sites for U.C. Berkeley Archaeological Survey between 1958 and 1962. Others who did early work in the area included Albert Elsasser, Christopher Donnan, D. L. True, E.L. Sterud and Emma Lou Davis.

Archaeological Research Incorporated was awarded the first archaeological survey by the Bureau of Land Management for inventory and test excavation during 1969. This was followed up by a documentation project awarded to Ike Eastvold to photograph rock art throughout the Mojave Desert. In 1972 Herrick Hanks became the first archaeologist hired by the Bureau of Land Management. He was tasked with developing an overview of the cultural resources of the California desert for the California Desert Plan. He developed a strategy to document what was known about the desert and to begin systematically inventorying sample plots scattered throughout the desert. His sample plots were 160-acre squares.

In 1974 Eric Ritter was hired to develop a cultural resource program. Hanks was selected as the first program lead and transferred to Washington, D.C. in 1975. Ritter became the District Archaeologist for the Riverside District and continued to inventory the desert, but through transects which were 1 mile in length and 1/8 mile in width. Russell Kaldenberg was hired as the first archaeologist in the Mojave Desert for the BLM in December 1975. A program has continued to be developed since that time with archaeologists focusing on multiple use issues. A series of overviews of the desert, including a number in the Preserve and new Monuments were contracted and published during 1979-1981 with the vision that they would be updated every 10-20 years. This has never happened. The Mojave National Preserve has contracted for overviews and inventory of their lands Ft Irwin and Twentynine Palms Marine Corps Air Ground Combat Center, but the BLM has had to focus on work submitted by project proponents. Unfortunately, little is shared with the public or scholars due to the sensitive nature of site locations.
Also, the California Historical Resources Information Center (CHRIS) was located for many years at the San Bernardino County Museum. On July 1, the files were transferred to the CHRIS center at California State University. The information they now have is very difficult to obtain as it is not organized, and it may take several years for them to have funding to organize and categorize their archaeological site maps and data base.

What We Know About the Monument
The area contained large bodies of Pleistocene/Early Holocene lakes which were described by famed desert archaeologist Dr. Emma Lou Davis, as being “paleo grocery stores” for the earliest inhabitants of the desert. All of the lakebeds, which today still attract water and resources such as fairy shrimp, insects fly larvae, and vegetation resulting from the occasional rainfall attracted wildlife to their shores and attracted native peoples who camped and hunted along the lakes and left their artifacts in place. Within the proposed Monument the Mojave River drained into the Cronese lakes and eventually into Sliver/Soda Lake and left evidence of human behavior. The series of dry lakes, including Broadwell, Cadiz and Bristol overflowed and may have joined the Colorado River. An example of how much time it would take to fill Bristol Lake was calculated by John R. Cook as taking 10.6 years of rainfall of 20 inches per year. If rainfall was only 13.03 inches per year it would take 1525 years to fill Bristol Lake. This indicates that during the times of early human occupation of the eastern Mojave Desert the period was wet and resources for the original occupants was much more dependent than during the historic time period.

How to Evaluate Archaeological Sites by Use of Extant Information
The chronological framework most often used in the Mojave Desert is that developed by Claude Warren. It divides the archaeological time sequence into five phases: Lake Mohave, Pinto, Gypsum, Saratoga Springs, and Shoshonean. Alternative approaches by Robert Bettinger and Irv Taylor define roughly contemporaneous periods that may also be applicable to the area. It is also worthwhile to note that the cultural sequences employed by archaeologists working along the nearby Colorado River are quite different but are not the subject of this short overview. However, a poorly dated three phase sequence (variously referred to as Yuman/Patayan/Hakatayan I, II, and II) is employed to refer to the archaeological record of the last 1,250 years along the Colorado River by archaeologists such as Malcolm Rogers, Jerry Schaefer and Michael Waters.

Lake Mohave Period (11,500–7775 Years Ago)
This time frame is referred to as the Lake Mohave Period and is named in reference to the very early studies by Elizabeth Crozier Campbell along the margins of Pleistocene Lake Mohave, whose southern portion, is near the edge of modern Soda Lake playa. The northern end of Lake Mojave (near the edge of the modern Silver Lake playa) in particular, has been the subject of considerable geomorphological and archaeological investigation archaeologists such as Claude Warren et. al. Most archaeologists do not believe that the California desert was occupied 15-20 thousand years ago but if so that period of time might be called the Lake Manix period, associated with the body of water that once was situated between the Calico Hills and Afton Canyon.

Pinto Period (7775–4420 Years Ago)
The Pinto and Gypsum periods fall within the broader Archaic time frame, as it is often referred to in regional and continental historical-evolutionary thinking. The
Pinto Period has traditionally been defined by the presence of Pinto style points with characteristic shoulders and concave bases (For additional studies see works by Mark R. Harrington; Sheilah Vaughan and Claude Warren). Claude Warren and Bob Crabtree thought that there is a correlation between Pinto sites and perennial springs, and therefore proposed a Middle Holocene settlement shift toward these locations in response to environmental desiccation. In contrast, Mark Basgall and Matthew Hall argued that in the Mojave region, Pinto sites are found in a wide variety of environmental settings, similar to earlier occupations, and that it thus appears the mobile, wide-ranging, and generalized land-use pattern of the Early Holocene continued through this period, as evidenced by the continuing high level of curation of flaked stone tool kits. Pinto Period sites contain millingslabs and other tools indicating an increase in the use of plants, specifically small seeds, perhaps indicating association with the Millingstone Horizon of the San Joaquin Valley.

**Gypsum Period (4420–1335 Years Ago)** During the Gypsum Period, the subsistence system appears to have broadened. A greater exploitation of hard seeds is inferred by a higher frequency of millingstones that often include portable manos and metates while the presence of mortars and pestles may indicate exploitation of mesquite beans. Flaked stone assemblages include a higher frequency of cryptocrystalline silicate (CCS) raw material (often from non-local sources), a greater use of pressure flaking, and medium to large Elko, Humboldt, and Gypsum dart points. Byrd et al. (2010) have recently documented that CCS raw material biface reduction flourished during this time period and often was embedded in long-distance logistical forays. Obsidian also was moved to locations far from quarries via direct procurement and hunting oriented rock art proliferated throughout the region. Warren et al. believe major changes in subsistence and settlement in the general region, arguing that large-game hunting intensified during this interval (largely due to improving climatic conditions), while the use of plant resources continued to intensify, the latter reflected by increases in the frequency of milling equipment. Along with these changes in subsistence focus, Warren et al. (1984) hypothesize a shift from family-based organization to larger, multi-family bands. The increased use of milling equipment, along with an apparent increase in using storage technologies and caching artifacts, suggest an intensified pattern of resource exploitation based on hard seeds and other plant resources, and an increasingly structured seasonal round.

**Saratoga Springs Period (1325–680 Years Ago)** After 1325 BP, culture change became more regional. Smaller Rose Spring and Eastgate-series points generally considered to represent the onset of bow-and-arrow technology are the hallmark of the Saratoga Springs Period. It could be that more diversified tool kits and a narrowing in the spatial range of raw material sources, indicating declining foraging territories.

Artifact assemblages include a range of milling equipment, ceramics (including extra-local trade items), and non-subsistence items such as ornaments and ritual objects. Several large Saratoga Springs Period sites with rich middens have been documented in the Mojave Desert, especially near the Tehachapi Mountains. Large midden sites in the east-central Mojave Desert included the Saratoga Springs site in southern Death Valley and Oro Grande along the Mojave River.
Some of these sites have been interpreted as village locations. Other places in the Mojave, however, appear to have had more transitory, loosely based settlement systems characterized by considerable residential mobility focused on camping near reliable springs, perhaps representing a way of coping with the effects of several long term droughts during the Medieval Climatic Anomaly (occurring periodically between 1050 and 600 years ago).

Regional trade networks were increasingly diverse during this time, and scholars have stressed the presence of regional interaction networks and the importance of east-west trade between coastal California and the Southwest that ran along the Mojave River. Notably, the Mojave River may have represented the boundary between two distinct groups of people.

**Protohistoric Period (680 Years Ago–European Contact)** The last phase of the prehistoric sequence, termed the Protohistoric Period in this region, is defined by the presence of Cottonwood and Desert Side-notched (DSN) arrow points. It also includes various rough brownware ceramics, as well as small steatite and shell beads, and large, unshaped milling equipment. These assemblages are generally equated with the entry of Numic people coming from the Utah area, including the ancestors of modern-day Chemehuevi and Southern Paiute groups, into the region.

In general, the overall frequency of Patayan ceramics decreases in favor of Paiute Brown Wares. In some portions of the southwestern Great Basin, however, the overall visibility of Numic occupations is often low, and may be limited to charcoal stains and fire-cracked rock scatters without obvious surface artifact associations. In the central Mojave, Anasazi influence appears to have greatly declined during this period, and whether portions of the east-central Mojave were occupied by Patayan or Numic groups is uncertain. As far west as China Lake Anasazi pottery is being found at spring sites.

With the arrival of the Spanish in the late eighteenth century, Native groups throughout the Mojave Desert underwent a series of changes. The introduction of Euro-American items, such as metal artifacts and trade beads begin to flourish during this time frame. It is noteworthy that the Mohave of the Colorado River, resisted colonial missionization more successfully than many groups. Beginning about AD 1850, the indigenous inhabitants of the region were more directly affected by Euro-American incursions and by Euro-American technology, economy, and culture. After a brief period of resistance, many turned to farming and de-facto ranching around developed springs. Others moved to towns and found employment (paid at times in cast-off clothing or food) in the mines or in associated support industries. The result of these changes drastically altered the highly mobile, family-centered settlement patterns and social organization of native people as they adapted to more settled lives and at least peripheral participation in a capitalist and cash-based economic system.

**Ethnohistory** Mojave Desert ethnographic investigations have been spotty at best, due mainly to the sparse ephemeral nature of human occupation in the region and the late attention paid the area by most). Early records (i.e., those between 1770 and 1870) of indigenous cultures come from explorers, pioneers, and trappers who wrote historical accounts and early ethnographies of native cultures and
lifeways (e.g., Francisco Garcés, John C. Fremont, James Ohio Pattie, and John Wesley Powell). The Spanish navigator Hernando de Alarcón, traveled up the Colorado River to near present-day Yuma in 1540, and was the first European to come into direct contact with the Yuman-speaking Native groups living along the river. Father Francisco Garcés, who traveled through the Mojave Desert in the 1770s, is generally considered to be the first European to make contact with Native groups living in the Mojave Desert. It was not until 50 years later that non-Native American people began traveling through and moving into these lands on a more frequent basis. The first were parties of trappers and traders, including James Ohio Pattie and Jedediah Smith, who traveled through the area around 1826.

Anthropologically oriented ethnography was mainly of the salvage kind undertaken by UC Berkeley and other academic anthropologists in the very late nineteenth and early twentieth centuries. By this time, the territorial extent of some Native groups changed significantly during the 150 years since initial contact, and some. These salvage efforts eventually resulted in a number of ethnographies and a culture element distribution list covering the Kawaiisu living in the western Mojave.

While somewhat systematic and the source of most of the available ethnographic information, this type of research has been criticized for the limited amount of time ethnographers spent in the field (in many cases only a few weeks). Many of these researchers also failed to publish the bulk of their findings.

Types of Archaeological Sites are Found in the Area

Prehistoric site types we generally find in the Mojave Desert include:

Lithic Reduction Stations also referred to as flake scatters, consisting only of scatters of flaked stone.

Quarries Sites which are areas where raw material for flaked stone tools was acquired; they contain associated primary reduction debris, but generally lack finished tools.

Camps sites contain flaked stone debitage, but also flaked stone tools such as bifaces and projectile points.

Limited Occupations contain ceramics and/or ground stone artifacts or bedrock milling features, in addition to flaked stone debitage and/or tools.

Occupation sites or villages contain evidence of sustained occupation in the form of midden sediment, intact hearth features, and/or residential structures, in addition to the constituents found in Limited Occupations. Many of these sites are in rockshelter or cave settings or on the shoreline of dry lakes such as the Cronise Lakes.

Rock art comprises pictographs (painted designs) and petroglyphs (pecked, incised or
Features include such manifestations as rock rings or cleared circles ("sleeping circles"), trails, cairns, rock alignments, geoglyphs, bedrock milling features, or plant roasting pits. These also can occur alone or in association with other types.

Based upon what we know about the Mojave National Preserve, it would be expected that the highest density of prehistoric sites will be located near playas or dry lakes and at spring sites and rock shelters or caves. Features such as rock alignments and geoglyphs are usually located on flat terrain and not spring sites or sites of regular occupation.

Nearly every spring site was the location of an Indian campsite. Obsidian used for tool making, found at the sites originated in the Ludlow/Amboy, in the Bristol Mountains near Bagdad, in the Castle Mountains, the Providence and the Hackberry Mountains. Much of the obsidian in the area was small, thumb or fist sized modules. Other obsidian found at archaeological sites was traded or gathered in the Coso Mountains to the northwest and, studies indicate that obsidian found at archaeological sites was also transported from the Southwest and perhaps central and northern Nevada.

Information Important to Understand the Cultural Resources of the Proposed Monument

The Mojave River provided a stable water source to the western and central area of the proposed monument, particularly significant sites include the Manix Basin, associated with ancient Lake Manix and perhaps the first peopling of the New World at over 15,000 years ago, and, where artifacts are represented by large bifaces, chopping tools and spear tips that were most likely hafted to atlats. Spectacular rock panels are situated in the Newberry Mountains and scattered at archaeological sites throughout the eastern Mojave.

Large habitation sites (the term village is often used) are found throughout East Cronise Lake. Here, large middens and cemeteries focused upon harvesting of freshwater mussels. These are the only shell middens in the Mojave Desert. Archaeologist Malcolm Rogers felt that Puebloan people traded turquoise for steatite and shells from the coastal areas and used East Cronise as a series of occupation sites; most likely seasonal villages. Rogers found Anasazi pottery sherds at the sites. Excavations by Christopher Drover for his dissertation work found more Anasazi pottery and human remains. The sites date to about 500 years ago. Cat Mountain, which forms the northwestern aspect of the Cronise basin would have been an important spot for both prehistoric and historic travelers as it is highly visible.

Afton Canyon contains remarkable archaeological sites associated with the Crucero area, where Malcolm Rogers conducted research in 1929. He suggested that, based upon the sandy soil near the Mojave River that horticulture was possible practiced here. His notes indicate that corn cobs and buff colored potsherds were excavated from the sand dunes during his early field work at the site. To the south of Crucero is a dry lake area called the Mesquite Hills Dry Lake. It early archaeological sites as well as Gypsum and later periods of material. Emma Lou Davis excavated and collected artifacts from the
Hord site, located on the shore of Mesquite Dry Lake. The site dates to the Lake Mohave period, roughly 10,000-year-old.

More recent research, including scientific excavations indicate this was a bighorn sheep and possible deer hunting area. Deer would have followed the river from the San Bernardino Mountains perhaps as far east as Soda Lake. During the early 1910s bighorn sheep and domestic sheep were interbred here in an attempt to make a species of sheep immune to diseases. The area is replete with aboriginal trails which can be seen on the desert pavement traversing to the north and east. Studies at Afton Canyon indicate its importance prehistorically and historically. It provided safe stops for early explorers and settlers to come through the area.

To the south of the lower Mojave River and to the east of the upper river are a series of low mountain ranges extending to the northward of the San Bernardino Mountains. These include the Ord, Rodman, and Cady Mountains. This region was shared between the mountain and desert divisions of the Serrano. South of these and to the east of the San Bernardino Mountains were several clan territories of Mountain Serrano political affiliation. These included the clan home of the Mara at Twentynine Palms.

Aboriginal trails are a significant resource throughout much of the area. The historic trails followed major Indian trails; but trails to springs, resource exploitation areas, and sacred sites are found throughout the proposed monument. In the eastern portion of the area Salt Trails are found originating along the Colorado River. Oral history records these trails as being important to the culture of the Mohave and Chemehuevi peoples.

Native American trade at the time of contact ran both east-west and north-south along a series of established routes. The two most prominent historic-era routes were along the Mojave Trail and the Old Spanish Trail. The Mojave Trail was the preeminent east-west travel route, and its western segment extended from the Needles/Fort Mojave area westward across the Providence Mountains, up the Mojave River and ultimately into Cajon Pass into the Los Angeles basin. The Old Spanish trail ran for 1200 miles between Santa Fe, New Mexico and Spanish southern California.

In the Mojave Desert, the trail ran extended from Salt Spring (northern Silurian Valley near the Amargosa River), southward through the Silurian Valley, and then, typically went west through Red Pass to Bitter Spring now on Ft. Irwin Army base. However, an alternative route continued south through Silurian Valley to Soda Spring before turning west towards Los Angeles.

The river tribes traded with the tribes as far west as the Channel Islands and ran the trails at night as well as during the day. Often broken quartz chips were spread along the trails to assist in illuminating the trail for night traffic. Olivella beads were traded for textiles with the southwest tribes. Acorns were brought from the mountain areas to the desert as a sign of wealth and as a food staple.

During the historic period Indian slave traders and horse thieves traversed the area bringing people and
horses from San Bernadino Valley to Utah. Stone cairns and geoglyphs are important sites found throughout the area, particularly known from the areas west of Baker and at Troy Dry Lake, where they fill the eastern side of the lake shore. Stone trail markers are also located throughout the area as demarcation points for native trails. Ethnographic information indicate that cairns of rocks found along trails in the mountain areas traveled by the Chemehuevi were used to restore travelers from fatigue by placing creosote branches with a stone on top on the pile and stand on the stone for some moments. They would make a request to the cairn to be restored or rejuvenated. Cairn sites are well known and important resources.

The California desert is well known for its rock art. Petroglyphs, pictographs, and geoglyphs are ubiquitous throughout the area. Some of the most colorful and distinctive rock art are the painted panels in the Old Woman Mountains and vicinity, a site known to be sacred to several of the desert tribes. The style of rock art found in this area is generally referred to as Great Basin Abstract and Representational. Most of it is either lines and geometric designs or animals and anthropomorphic representations. Except for the many studies at Newberry Cave and a few minor reports on the rock art in the Rodman Mountains, most of the professional work in the area has focused on the well-known rock art in the Mojave National Preserve. I find nothing published within the proposed Monument.

Scattered rock art panels are situated near Lavic and most likely throughout the area. What is unknown about the vicinity is the distribution of sites; as the focus of archaeological inventory was in the Mojave Preserve (East Mojave National Scenic Area) and not to the area to the south. The nearby Whipple Mountains contains extremely significant archaeological sites that may be reflected within the proposed Monument.

At the time of European contact the proposed monument was inhabited and/or by the Serrano, Vanyume, Mohave, Chemehuevi, Cahuilla, Panamint Shoshone (Koso), the desert branch of the Kawaiisu, and various Paiutes groups. There are no reservations within the proposed monument boundaries, but reservations representing all of the tribes surround the area. Non-federally recognized tribes such as the Vanyume and Kawaiisu reside on several of the reservations.

Sheep and cattle drives used the springs and the Mojave River to get their animals through the desert to the San Joaquin Valley. This occurred as early as 1853. By the 1870s sheep and cattle drives were constant in the area, flowing Indian trails and the Old Spanish Trail, the Mojave Road, and other trails that connected the Mojave River to the Colorado River. Archaeological sites associated with the grazing industry should be found throughout the area.

Early explorers travelled the area using aboriginal trails and following the Mojave River. Father Francisco Garcés traveled from the Mohave tribes into central California along the Mojave River near the Cady Mountains to the Calico Mountains then continuing on to the west and south using Indian guides. The possibility of sites associated with Garcés exists, but they were so ephemeral that it is highly unlikely they will be found. Jedediah Smith, Cave Couts and James Ohio Pattie were also early explorers who made camps along the Mojave River and dry lakes and stopped at Afton Canyon. Afton, Rason,
and Cady Springs as well as Camp Cady, had small villages associated with water sources. Camp Cady, of course was a military camp put in place to protect travelers on the Mojave Road.

Railroads traverse the area, not only were railroad surveys conducted which leave sparse residuals of cultural materials in the proposed monument, but railroad construction camps are located in the vicinity. A well-known Chinese construction camp is located near Lamic that contains all of the accouterments of Chinese construction life dated to the late 19th century. It is probably that, through a systematic survey or the rail lines, more such sites will be located. Chinese camp sites would most likely be some distance from the camps of non-Chinese.

**Future Management Suggestions** All of the archeological site records for the non-military portion of the eastern Mojave Desert need to be updated. New overviews need to be written taking into account what has been learned and collected since 1980. The CHRIS center in Fullerton needs funding to update their records they received from the San Bernardino County Museum and it needs to be made accessible. Oral histories of some of the first federal archaeologists should be undertaken before the information is lost. Historic information should be gleaned from the Mojave Desert Heritage and Cultural Association, a tremendous asset situated in the east Mojave Desert. Along with this, adequate funding should be given to the Mojave National Preserve to foster a good cultural resources program. Presently they have a single full-time position and little hope of funding any additional position.
### APPENDIX E—Areas of Critical Environmental Concern

Table 1. Current ACECs within or overlapping Mojave Trails National Monument

<table>
<thead>
<tr>
<th>DRECP Map #</th>
<th>Unit Name</th>
<th>Relevance and Importance Criteria</th>
<th>Acres</th>
</tr>
</thead>
</table>
| 1           | Afton Canyon                   | * Riparian and hydrology  
* Climate adaptation and refugia  
* Native American values  
* Scenic values  
* Special status plants and animals  
* Unique geology  
* Mojave Road and Old Spanish NHT  
* Paleontological resources | 8,830  |
| 5           | Amboy Crater National Natural Landmark | * Unique geological significance  
* Visible significance in the landscape  
* Unique Plant assemblage | 640  |
| 13          | Bigelow Cholla Research Natural Area | * Densest concentration of Bigelow cholla  
* Dense population of desert tortoise | 4,400  |
| 16          | Bristol Mountains              | * Landscape connectivity  
* Desert tortoise  
* Special status plants and animals  
* Prehistoric trails  
* Route 66  
* Ghost towns and railroad history  
* High scientific values b/c ecological transition | 101,380  |
| 17          | Cadiz Valley                   | * Diverse vegetation  
* Wildlife and plant assemblages  
* Climate refugia  
* Bighorn, deer, mountain lion and other landscape connectivity  
* Ranching, mining, railroad, Route 66  
* Scientific values of geologic studies | 190,910  |
<p>| 18          | Cady Mountains WSA             | Released from WSA status by S. 47 |</p>
<table>
<thead>
<tr>
<th>#</th>
<th>Area Name</th>
<th>Description</th>
<th>Area Size</th>
</tr>
</thead>
</table>
| 26 | Chemehuevi                 | * Critical habitat for desert tortoise  
* Numerous rare and special status plant and animal species  
* Bonanza spring  
* Sensitive bird species  
* Unusual plant assemblages  
* Archaeological sites, extensive Native American values  
* Historic resources from ranching, mining, railroad, Route 66, Desert Training center  
* High research and scientific value |
| 862,390 |
| 38 | Dead Mountains             | Very little overlap w/ Mojave Trails National Monument and redundant values                                                                                                                                 |           |
| 66 | Marble Mountain Fossil Bed | * Paleontological Resources  
* Geologic Resources                                                                                                                                                                                        | 230       |
| 69 | Mesquite Hills-Crucero     | * Plant assemblages  
* Special status animal and plant species  
* Archaeological sites                                                                                                                                                                                      | 5,040     |
| 73 | Mojave Fringe Toed Lizard  | * Functioning ecological processes - sand transport  
* Sand Dunes  
* Special status plants                                                                                                                                                                                  | 22,440    |
| 90 | Patton Military Camps      | * Cultural resource values of Camps, airfields, hospitals, depots, and artifacts  
* Stonework, company symbols, other artifacts                                                                                                                                                           | 16,460    |
| 95 | Pisgah Research Natural Area | * High density desert tortoise habitat  
* Landscape connectivity  
* Special status species  
* Unusual invertebrate assemblage associated with lava tubes                                                                                                                                            | 46,500    |
| 96 | Piute-Fenner               | * Desert tortoise critical habitat  
* Wildlife like bighorn sheep, prairie falcons, golden eagles  
* Piute Valley Smoke Tree Assemblage  
* Homer Mountain Ocotillo Assemblage  
* Father Garcés along Mojave Road  
* Old Government road  
* Adjacent to Piute springs  
* Piute Creek                                                                                                                                                                                                 | 155,710   |

**Some of these ACECs are only partly inside of Mojave Trails National Monument**
### 13.6 APPENDIX F—Management Zones

Management zones with proposed management

<table>
<thead>
<tr>
<th>Purpose summary</th>
<th>Frontcountry</th>
<th>Passage</th>
<th>Backcountry</th>
<th>Primitive</th>
<th>Wilderness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide infrastructure and visitor support services for popular day use areas as well as education and interpretation about Monument Objects and resources and public safety.</td>
<td>Provide secondary travel routes as throughways and recreation designations where there is a need for recreational and passenger vehicles to travel through to access other zones, trailheads, or for administrative purposes. Provide education and interpretation about Monument Objects and resources and public safety.</td>
<td>Provide a less-developed, less-managed, self-directed, and more natural setting while accommodating motorized and non-motorized access on designated routes.</td>
<td>Provide an undeveloped, low managed, self-directed, more natural setting that serves quiet non-motorized recreation in a primitive setting.</td>
<td>Provide areas of naturalness, outstanding opportunities for solitude or primitive and unconfined recreation or other important areas with dense Monument Objects and resources.</td>
<td></td>
</tr>
<tr>
<td>Access</td>
<td>Convenient and easy.</td>
<td>Convenient and easy.</td>
<td>More challenging than Frontcountry or Passage but accessible by vehicle on designated routes.</td>
<td>Access by non-motorized means through trailhead or otherwise.</td>
<td>Access by non-motorized means through trailhead or otherwise.</td>
</tr>
<tr>
<td>Vehicle use</td>
<td>Motorized and non-motorized on designated routes</td>
<td>Motorized and non-motorized on designated routes</td>
<td>Motorized and non-motorized on designated routes</td>
<td>Non-motorized on designated routes</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------</td>
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<tr>
<td>Hiking</td>
<td>Provide easy to moderate accessible trails at high visitation areas that enable exploration and enjoyment of the desert in a safer, more controlled manner for visitors while protecting Monument Objects.</td>
<td>Minimize hiking within Passage zones and highway corridors within the monument to provide the most enjoyable hiking experience.</td>
<td>Provide for a mix of on and off trail travel to allow visitors to experience desert travel in a similar way as the travelers along the namesakes of the Mojave Trail National Monument.</td>
<td>Allow self-directed hiking through the desert landscape as long as Monument Objects and wilderness resources remain intact.</td>
<td></td>
</tr>
<tr>
<td>Equestrian use</td>
<td>Provide easy to moderate accessible trails at high visitation areas that enable exploration and enjoyment of the desert in a safer, more controlled manner for visitors while protecting Monument Objects.</td>
<td>Minimize within Passage zones and highway corridors within the monument to provide the most enjoyable equestrian experience.</td>
<td>Provide for a mix of on and off trail travel to allow visitors to experience desert travel in a similar way as the travelers along the namesakes of the Mojave Trail National Monument.</td>
<td>Provide for a mix of on and off trail travel to allow visitors to experience desert travel in a similar way as the travelers along the namesakes of the Mojave Trail National Monument.</td>
<td></td>
</tr>
<tr>
<td><strong>Camping</strong></td>
<td>Improve developed camping opportunities across the monument for families and organized groups. Camping will be permitted in campgrounds or designated primitive camping areas.</td>
<td>Provide for camping in campgrounds or designated primitive camping areas</td>
<td>Provide primitive vehicle camping opportunities at designated sites within Backcountry vehicle camping zones.</td>
<td>Provide for self-directed and self-contained primitive vehicle camping opportunities within camping zones.</td>
<td>Provide for dispersed primitive, non-motorized, non-mechanized camping opportunities.</td>
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<td>---</td>
</tr>
<tr>
<td><strong>Group size</strong></td>
<td>No limit</td>
<td>No limit</td>
<td>25 people with possibility of larger group with permit</td>
<td>25 people with possibility of larger group with permit</td>
<td>12 people and 12 pack animal limit. Designate day-use only areas around sensitive Monument Objects.</td>
</tr>
<tr>
<td><strong>Trail development</strong></td>
<td>Trails may be developed and maintained where consistent with the Proclamation and management plan</td>
<td>Trails could be developed or maintained where consistent with the Proclamation and management plan and where needed for protection of monument resources or visitor safety</td>
<td>Trails could be developed or maintained where consistent with the Proclamation and management plan and where needed for purposes of protecting Monument resources (e.g., designated if necessary, to</td>
<td>Trails could be developed or maintained where consistent with the Proclamation and management plan and where needed for purposes of protecting Monument resources (e.g., designated if</td>
<td>New trails would not be developed or designated</td>
</tr>
<tr>
<td>Signage</td>
<td>Install signage to direct visitors to developed campgrounds</td>
<td>Install signage to direct visitors to developed campgrounds</td>
<td>Install signage to direct visitors to developed campgrounds</td>
<td>Install backcountry boards at popular trailheads with positive messaging about appropriate behavior for Wilderness zones</td>
<td></td>
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13.7 APPENDIX G—Existing SRMA and ERMA Plans

Cadiz Valley ERMA (PDF pg 53)

Location within Monument: This ERMA provides the viewshed for the Old Woman, Cadiz Dunes and Sheephole Valley Wilderness Units.

Management Goal and Objective: Manage for outstanding views and dispersed recreational use. Cadiz Valley ERMA encompasses vast lands that provide the southern viewshed for the National Trail Corridor.

RMA Benefits: Connection to history, fuller understanding of citizenship, greater sense of personal attachment/stewardship for the area.

Management Deference: Refer to Cadiz Valley ACEC Management plan for objectives, allocations, and management direction. Manage in accordance with Mojave Trails National Monument.

Implementation Decisions:

- Maintain the Mojave Adventure Trails System using signs, markers, and appropriate erosion control installations.
- Limit Special Recreation Permits to 14 nights, and no staging areas larger than 3 acres. Travel is limited to routes designated within the Land Use Plan or Activity Level Plan.
- Maintain interpretive developments and material that promote recreational opportunities, enjoyment, and appreciation for significance of the historic sites.

Relationship to Mojave Trails National Monument Objects:

Community Alternative Revisions:

Ward Valley ERMA (PDF pg 74)

Location within Monument: Ward Valley ERMA runs south in from I-40 at the Water Road Exit in an inverted “V” shaped linear corridor, along the Bigelow Cholla Garden and Piute Mountain Wildernesses. The east leg of the “V” continues southeast down the Chemehuevi Valley, bounded by the Sacramento Mountains SRMA and the Stepladder Wilderness, and ending at U.S. 95 and Turtle Mountain Road. The West leg of the “V” follows Ward Valley to the southwest, bordered by the Old Woman, Stepladder, and Turtle Mountains Wildernesses and ending at CA 62 and warping around the southern end of the turtle Mountains.

General Description: The area is valued by local communities, visitors, and the Native American Tribes for cultural and historic values. Historic resources within the area include ranching, railroading, mining, military training, and back country touring (2002 Northern and Eastern Mojave Desert Management (NEMO) Plan). The Needles Field Office has developed a system of designated trails entitled the Mojave Adventure Routes in regard to the 2002 Northern and Eastern Colorado Desert Coordinated Management Plan item 3.8.7 California Back Country Discovery Trails. [This system] will also provide a backcountry opportunity for non-traditional trail users such as persons with disabilities, senior citizens, and families with small children.

Management Goal and Objective: Manage for outstanding views and disbursed recreational use.
Recreation management zones within RMA:

*Iron Mountain WWII Divisional Camp Historic Site (PDF pg 74)*

**RMZ Location:** The camp is located in southern Ward Valley, in the shadow of its namesake and north of CA 62.

**RMZ Goal/Objective:** Iron Mountain Divisional Camp will be managed as a living museum.

**RMZ Rationale:** Creating an RMZ would allow the Bureau of Land Management (BLM) to manage the Iron Mountain WWII Divisional Camp Historic Site RMZ in an activity plan and the surrounding area in a custodial manner to ensure quality of dispersed recreation experiences and opportunities, reducing impact to the original footprint of the site.

*Rice WWII Historic Site (PDF pg 75)*

**RMZ Location:** The camp is located in southern Ward Valley, south of State Route 62.

**RMZ Goal/Objective:** Rice Camp will be managed as a living museum.

**RMZ Rationale:** Creating an RMZ would allow the Bureau of Land Management (BLM) to manage the Rice WWII Divisional Camp Historic Site RMZ in an activity plan and the surrounding area in a custodial manner to ensure quality of dispersed recreation experiences and opportunities.

**RMA Benefits:** Solitude, increase in tourism for local economy, provide increase in appreciation for historic sites, protect visual resources by blending facilities in with local landscapes. Feeling of pride in the sacrifice that the American military endured to protect our nation.

**Management Reference:** Refer to the Cadiz Valley, Chemehuevi, Chuckwalla to Chemehuevi tortoise linkage, Patton Military Camps, Turtle Mountains ACEC Special Unit Management Plans for detailed objectives, allocations, and management direction.

**Implementation Decisions:**

- The Mojave Trails National Monument is within the ERMA, manage in accordance as Congressionally designated.
- Maintain the Mojave Adventure Trails System using signs, markers, and appropriate erosion control installations.
- Limit Special Recreation Permits to 14 nights, and no staging areas larger than 3 acres. Travel is limited to routes designated within the Land Use Plan or Activity Level Plan.
- Maintain interpretive developments and material that promote recreational opportunities, enjoyment, and appreciation for significance of the historic sites.

**Relationship to Mojave Trails National Monument Objects:**

**Community Alternative Revisions:**
**Afton Canyon SRMA (PDF Pg 143)**

**Location within Monument:**

**General Description:** A surface flowing river in the desert is a very special place and draws people to enjoy the bountiful wildlife and tranquil setting. Visitors also come here to experience and understand the conditions of explorers and emigrants who settled the west; includes hiking and retracing ancient and historic trails and trade routes.

**Management Goal and Objective:** Manage this SRMA for its distinctive opportunities such as; motorized route along the historic Mojave Road, Old Spanish National Historic Trail, camping opportunities at the improved campground, hiking, equestrian, and rock hounding opportunities.

The goals for SRMA are to improve the condition of the riparian habitats, wildlife habitat, and visual resources in the area, and to provide continued visitor services and low impact recreation.

**RMA Benefits:** Experience unusual natural setting for desert recreation, connection to rich history, economic and environmental boons to the local communities.

**Management Deference:** Refer to the Afton Canyon and Cady Mountains WSA ACEC Special Unit Management Plans for detailed objectives, allocations, and management direction.

**Implementation Decisions:**

- Allow passage of motorized vehicles along the Mojave Road by rerouting a portion of the road out of the riparian area and designating the Afton Canyon portion of the Mojave Road as open for all vehicles.
- Cooperate with County to maintain Afton and Mojave Roads.
- Restore all routes not signed as open.
- Maintain existing campground at its existing size [as of 2016]; transition it to a fee use camping area.
- Maintain the dry camp area on the bench west of the campground as a group camping area
- Maintain fencing for equestrian use and to control vehicles.
- Develop an interpretive foot trail within canyons near the day use area, campground, and group site.
- Develop an activity level plan to identify/designate current/future recreational opportunities.
- Develop appropriate facilitates to provide and managed the proposed uses.
- Establish parameters for SRPs within SRMA.
- Establish road/trail maintenance parameters.
- Continue to implement the approved Afton Canyon Management Plan until new plan is developed.
- Manage all routes of travel as open, limited, or closed as designated by local travel management plan.

**Mitigation Measures:**

- Maintain designated motorized route network connectivity leading into and through the Afton SRMA.
• Manage energy projects, ROWs and similar developments on adjacent and nearby lands to avoid traffic conflicts with visitors and permitted uses.
• Maintain access to and across the historic Mojave Road leading into and through Afton Canyon; from Interstate 15 east to the Mojave Preserve.
• Route the Mojave Road through Afton Canyon and designate route for all motorized vehicle types, including Off-Highway Green Sticker registered vehicles.
• Prohibit use of OHVs in the designated campground; allow their use at the group campsite and on the Mojave Road. Monitor for OHV intrusions and restore as possible.
• Establish a buffer along the Old Spanish National Historic Trail development exclusion zone leading into and through the Afton Canyon SRMA; centered along the approximate trail alignment per National Historic guidelines.
• Manage energy developments on adjacent and nearby lands to maintain dark skies.
• Manage upstream energy development to avoid impacts to water levels in the Mojave River.
• Establish and follow a strategy for managing water, access and resource issues related to the stretch of Mojave River designated an eligible wild and scenic river in the West Mojave Plan.

Relationship to Mojave Trails National Monument Objects:

Community Alternative Revisions:
Community Alternative Zoning more clearly defines the SRMA to the areas impacted by recreation through the Front Country zoning.

Crucero Valley ERMA (PDF pg 148)

Location within Monument: The Crucero Valley ERMA is a pie shaped expanse of lands bordered by the Union Pacific (UP) railroad at the north, and the Mojave National Preserve at the east, the Kelso Dunes Wilderness at the south, and the Needles Field Office Boundary at the west.

General Description: The Mesquite Hills/Crucero ACEC and the historic Tonopah and Tidewater Railroad are part of this undeveloped landscape. The area is remote with few designated open routes of travel.

Management Goal and Objective: Manage for outstanding views and dispersed recreational use.

RMA Benefits: Outdoor recreation that promotes a more complete understanding of the desert environment.

Management Deference: Refer to the Area of Critical Concern Cady Mountains WSA, Mesquite Hills/Crucero, Mojave Fringe-toed Lizard ACEC Special Unit Management Plans for detailed objectives, allocations, and management direction.

Implementation Decisions:
The Mojave Trails National Monument is within the ERMA, manage in accordance as Congressionally designated.
• Maintain the Mojave Adventure Trails System using signs, markers, and appropriate erosion control installations.
• Limit Special Recreation Permits to 14 nights, and no staging areas larger than 3 acres. Travel is limited to routes designated within the Land Use Plan or Activity Level Plan.
• Maintain interpretive developments and material that promote recreational opportunities, enjoyment, and appreciation for significance of the historic sites.

Relationship to Mojave Trails National Monument Objects:

Community Alternative Revisions:

Lava Hills ERMA (PDF pg 206)

General Description: Lava Hills ERMA encompasses vast lands that provide the northern viewshed for the National Trail SRMA or Route 66 Corridor. This ERMA also provides the viewshed for the Bristol Mountains and I-40 Corridor.

Management Goal and Objective: Manage for outstanding views and dispersed recreational use.

RMA Benefits: Connection to history, better understanding of citizenship, and greater sense of stewardship for the area.

Management Defference: Refer to the Bristol Expansion, Chemehuevi ACEC Special Unit Management Plans for detailed objectives, allocations, and management direction.

Implementation Decisions:
The Mojave Trails National Monument is within the ERMA, manage in accordance as Congressionally designated.

• Maintain the Mojave Adventure Trails System using signs, markers, and appropriate erosion control installations.
• Limit Special Recreation Permits to 14 nights, and no staging areas larger than 3 acres. Travel is limited to routes designated within the Land Use Plan or Activity Level Plan.
• Maintain interpretive developments and material that promote recreational opportunities, enjoyment, and appreciation for significance of the historic sites.

Sacramento Mountains SRMA (PDF page 197)

Location within Monument: This SRMA is in the far eastern portion of the Monument.

Management Goal and Objective: Provide a broad range of OHV recreational trail opportunities to provide for the current and future use of local residents and winter visitors.

RMA Benefits: Enjoy a broad range of OHV trail activities in varying degrees of difficulty; self-discovery and challenge.

RMA Setting: Frontcountry to Backcountry
Management Deference: Manage in accordance with Mojave Trails National Monument, as Congressionally designated.

Implementation Decisions:

- Develop activity level plan to identify:
- and designate current and future OHV recreation trail opportunities
- appropriate facilities to provide for and manage the proposed uses
- parameters for streamlining the SRP process
- staffing and funding needs
- parameters for facility and road/trail maintenance
- partnerships
- possible recreation fees
- implementation schedule
- Maintain through traffic motorized route network connectivity with roads and trails leading into and through the Sacramento Mountains SRMA.

Relationship to Mojave Trails National Monument Objects:

Community Alternative Revisions:

Chemehuevi Valley SRMA [PDF pg 188]

Location within Monument: The northern portion of the SRMA overlaps the southeastern portion of the Monument, adjacent to the Chemehuevi Mountains Wilderness Area. The Snaggletooth Primitive Camp RMZ is the only one of the RMZs within the Monument.

Management Goal and Objective: Provide a broad range of OHV recreational trail opportunities to provide for the current and future use of local residents and winter visitors.

RMA Benefits: Enjoy a broad range of OHV trail activities in varying degrees of difficulty; self-discovery and challenge

Snaggletooth Primitive Camp RMZ

Goal: Provide and maintain a formal campground setting to accommodate a broad range of recreational camping.

RMZ Setting: Front to back country

RMZ Implementations:

- Provide necessary facilities to manage increased and spreading visitation
- Develop a business plan to provide funding for operations and maintenance
- Management Deference: Manage in accordance with Mojave Trails National Monument, as Congressionally designated.

Implementation Decisions:

- Develop activity level plan to identify:
- and designate current and future OHV recreation trail opportunities

141
• appropriate facilities to provide for and manage the proposed uses
• parameters for streamlining the SRP process
• staffing and funding needs
• parameters for facility and road/trail maintenance
• partnerships
• possible recreation fees
• implementation schedule
• Maintain through traffic motorized route network connectivity with roads and trails leading into and through the Sacramento Mountains SRMA.

Relationship to Mojave Trails National Monument Objects:

Community Alternative Revisions:

National Trails Viewshed SRMA (PDF pg 210)

Location within Monument: This SRMA transects the Needles Field Office from Ludlow in the west along Route 66 through Amboy, Cadiz, Essex, Goff and Needles on the eastern side of the Field Office

General Description: This Special Recreation Management Area is a linear site encompassing the longest unspoiled section of Route 66 (1929), the Atchison, Topeka and Santa Fe Railroad Line (1911), the Mojave Trail (1870) and a relatively unknown section of the Old Spanish National Historic Trail (1765).

Management Goal and Objective: Manage for the outstanding scenic and historic recreational opportunities which are found through back country travel of the Mojave Adventure Trails.

Recreation Management Zones:

National Trails Viewshed RMZ (PDF pg 210)

RMZ Location:

RMZ Goal/Objective: To manage and protect Historic Route 66 and the unobstructed scenery of the Mojave Desert viewshed not found anywhere else in Southern California.

RMZ Setting: Middle Country—Rural This corresponds to Community Alternative’s Backcountry Zone

Amboy Crater Lava Field Zone RMZ (PDF pg 211)

RMZ Location: Adjacent to Historic Route 66

RMZ Goal/Objective: The Amboy Crater Lava Field Zone will be managed as an educational and interpretative site which offers outstanding recreational opportunities. The Amboy Crater Lava Fields RMZ will provide a maintained system of hiking trails and facilities in which to view the cinder cone and surrounding lava fields.

RMZ Setting: Environmentally backcountry, but socially Urban. CA’s Frontcountry zone meshes well with this.
**Trilobite and Ship Mountains Rock Collecting Area RMZ (PDF pg 212)**

RMZ Location:

RMZ Goal/Objective: Rock hounding sites will be managed for the ease of accessibility to geological specimen sites as well as to areas with primitive car camping opportunities.

RMZ Setting: Backcountry—Frontcountry

RMZ Specific Management: Trilobite Rock Collecting Area is limited on the number of specimens that can be collected; The Ship Mountain Collecting Area is not limited.

**Bonanza Springs Day Use Area and Campground RMZ (PDF pg 212)**

RMZ Location:

RMZ Goal/Objective: The Bonanza Springs RMZ will be managed for wildlife viewing and primitive camping and hiking opportunities.

RMZ Setting: Backcountry to Middlecountry. *This corresponds well with the CA’s Backcountry/Primitive zoning that’s in place.*

**Camp Clipper & Camp Essex WWII Historic Site (PDF pg 213)**

RMZ Location:

RMZ Goal/Objective: Camp Clipper/Camp Essex will be managed as a living museum which focuses on the role the American Deserts have played in training troops during World War II.

RMZ Setting: Frontcountry—Rural *This corresponds well with CA’s Frontcountry Zoning for the WWII Camps.*

**Camp Ibis WWII Historic Site (PDF pg 213)**

RMZ Location: The camp is located in the southern Piute Valley, just north of the Burlington Northern Santa Fe rail line and 20 miles east of the Camp Clipper/Camp Essex

RMZ Goal/Objective: Camp Ibis will be managed as a living museum which focuses on the role the American Deserts have played in training troops during World War II.

RMZ Setting: Frontcountry - Rural *This corresponds well with CA’s Frontcountry Zoning for the WWII Camps.*

**Mojave Trail and Boulders Primitive Camp RMZ (PDF pg 214)**

RMZ Location: This is the Boulder/Balancing Rock Camp northwest of the Dead Mountains Wilderness.

RMZ Goal/Objective: To be managed as part of the Mojave Adventure Route System and as a historical route and primitive camp.

RMZ Setting: Backcountry to Middlecountry *Where is this?*

RMA Benefits:
Management Deference: Refer to the Amboy Crater, Bigelow Cholla, Bristol Expansion, Cadiz Valley, Chemehuevi, Dead Mountains, Marble Mountain Fossil Bed, Patton Military Camps, Piute-Fenner, Piute-Fenner, Great Falls Basin, Mojave Ground Squirrel, Panamints and Argus ACEC Special Unit Management Plans for detailed objectives, allocations, and management direction. The Mojave Trails National Monument is within the SRMA, manage in accordance as Congressionally designated.

Implementation Decisions:

- Develop an activity level plan to identify and designate current and future recreational opportunities, appropriate facilities to provide and manage the proposed uses, parameters for streamlining SRP applications for events, staffing and funding needs, parameters for facility/road/trail maintenance, recreation fee considerations, and an implementation schedule.
- Consider a Camping Recreation Use Permit Program.
- Develop Hiking Trails and Trailheads.
- Pursue Watchable Wildlife Designation.
- Manage all routes of travel as open, limited, or closed as designated in local travel management plan.
- The Mojave Trails National Monument is within the SRMA, manage in accordance as Congressionally designated.
- Maintain the Mojave Adventure Trails System using signs, markers, and appropriate erosion control installations.

Mitigation Measures:

- Maintain through traffic motorized route network connectivity with roads and trails leading into and through the National Trails SRMA.
- Manage renewable energy development on adjacent and nearby lands to avoid traffic conflicts with visitors & permitted uses.