

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

---

Draft Environmental Assessment  
#DOI-BLM-NV-B010-2022-0003-EA  
February 2022

**Mill Creek Recreation Area and Shoshone Off Highway Trail  
System Maintenance and Expansion Project  
Lander County, Nevada**



Bureau of Land Management  
Battle Mountain District  
Mount Lewis Field Office  
50 Bastian Road  
Battle Mountain, Nevada 89820



## Table of Contents

1. INTRODUCTION / PURPOSE OF AND NEED FOR ACTION .....	1
1.1. Introduction .....	1
1.2. Proposed Action .....	3
1.3. Purpose and Need for Action .....	3
1.4. Scoping and Issues .....	3
1.5. Relationship to BLM and Non-BLM Policies, Plans, and Programs and Land Use Plan Conformance.....	3
1.6. Decision to be Made.....	4
2. DESCRIPTION OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE.....	5
2.1. Proposed Action .....	5
2.2. Project Design Features.....	8
2.2.1. Air Quality .....	8
2.2.2. Cultural Resources .....	8
2.2.3. Migratory Birds.....	8
2.2.4. Fish and Wildlife (Including Federally Listed Species) .....	8
2.2.5. Paleontological Resources .....	8
2.2.6. Recreation .....	8
2.2.7. Soils.....	9
2.2.8. Vegetation .....	9
2.2.9. Noxious and Invasive Weeds.....	9
2.2.10. Water Resources .....	9
2.2.11. Wild Horses and Burros.....	9
2.3. No Action Alternative .....	9
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES .....	10
3.1. Lands and Realty .....	13
3.1.1. Affected Environment.....	13
3.1.2. Environmental Consequences .....	14
3.2. Migratory Birds .....	14
3.2.1. Affected Environment.....	14
3.2.2. Environmental Consequences .....	15
3.3. Fish and Wildlife (Excluding Federally Listed Species) .....	16
3.3.1. Affected Environment.....	16

3.3.2.	Environmental Consequences .....	18
3.4.	Special Status Wildlife Species .....	21
3.4.1.	Affected Environment .....	21
3.4.2.	Threatened, Endangered, and Candidate Animal Species .....	21
3.4.3.	BLM Nevada Sensitive Species .....	21
3.4.4.	Environmental Consequences .....	24
3.5.	Rangeland Management and Livestock Grazing .....	26
3.5.1.	Affected Environment .....	26
3.5.2.	Environmental Consequences .....	26
3.6.	Recreation .....	27
3.6.1.	Affected Environment .....	27
3.6.2.	Environmental Consequences .....	28
3.7.	Soils .....	29
3.7.1.	Affected Environment .....	29
3.7.2.	Environmental Consequences .....	30
3.8.	Socioeconomics .....	31
3.8.1.	Affected Environment .....	31
3.8.2.	Environmental Consequences .....	33
3.9.	Environmental Justice .....	34
3.9.1.	Affected Environment .....	34
3.9.2.	Environmental Consequences .....	34
3.10.	Vegetation .....	35
3.10.1.	Affected Environment .....	35
3.10.2.	Environmental Consequences .....	35
3.11.	Noxious and Invasive Weeds .....	36
3.11.1.	Affected Environment .....	36
3.11.2.	Environmental Consequences .....	36
3.12.	Water Resources .....	37
3.12.1.	Affected Environment .....	37
3.12.2.	Environmental Consequences .....	38
3.13.	Wild Horses and Burros .....	39
3.13.1.	Affected Environment .....	39
3.13.2.	Environmental Consequences .....	39
4.	List of Preparers and Reviewers .....	41

5. References ..... 42

**List of Figures**

Figure 1. Project Area Location..... 2  
 Figure 2. Proposed Shoshone OHV Connector Trail..... 6  
 Figure 3. Proposed Interpretive Hiking Trail and Foot Bridges ..... 7  
 Figure 4. Mule Deer Habitat in the Project Area ..... 17  
 Figure 5. Pronghorn Habitat in the Project Area ..... 19  
 Figure 6. Greater Sage-Grouse Habitat in the Project Area..... 23  
 Figure 7. South Shoshone Wild Horse and Burro Herd Management Area in the Project Area.. 40

**List of Tables**

Table 1. Elements Associated with Supplemental Authorities and Other Relevant Resources Assessment..... 10  
 Table 2. Greater Sage-Grouse Habitat Classifications and Level of Disturbance Associated with the Connector Route ..... 25  
 Table 3. Soil Types in the Project Area ..... 29  
 Table 4. Jobs and Industry within Lander County, Nevada..... 32

Appendix A: Migratory Bird Species Identified in the Project Area

Appendix B: Special Status Species Analyzed

**LIST OF ACRONYMS**

ADA	Americans with Disability Act
BLM	Bureau of Land Management
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EA	Environmental Assessment
EJ	Environmental Justice
EO	Executive Order
ESA	Endangered Species Act of 1973, as amended
FLPMA	Federal Land Policy and Management Act of 1976
GIS	Geographic Information Systems
HMA	Herd Management Area
MBTA	Migratory Bird Treaty Act
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act of 1969
NHD	National Hydrology Dataset
NRCS	Natural Resources Conservation Service
OHV	Off Highway Vehicle
RMP	Resource Management Plan
SEP	BLM Socioeconomic Profile
USFWS	U.S. Fish and Wildlife Service

# **Mill Creek Recreation Area and Shoshone Off Highway Vehicle Trail System Maintenance and Expansion Project Environmental Assessment**

## **1. INTRODUCTION / PURPOSE OF AND NEED FOR ACTION**

### **1.1. Introduction**

The Mill Creek Recreation Area is located approximately 20 miles south of Battle Mountain, Nevada and can be accessed directly from Nevada State Route 305. The Shoshone Off Highway Vehicle (OHV) Trail System is located approximately 25 miles south of Battle Mountain, Nevada and is also accessed directly from State Route 305.

The Mill Creek Recreation Area was originally permitted as a right-of-way grant to the Bureau of Land Management (BLM) Mount Lewis Field Office in 1975. Multiple pre-existing National Environmental Policy Act (NEPA) documents for Mill Creek Recreation Area have been approved, including a 1987 Stream Bank Stabilization Plan and a 1988 Recreation Management Plan. The Shoshone OHV Trail System Environmental Assessment (EA) was completed in 2007 and the first phase of the trail system was completed in 2008. Since then, a Shoshone Side-by-Side Assessment and Travel Plan was completed which made recommendations to improve the quality of riding and accommodations available in the area (RecConnect 2019).

In 2017, the human-caused Mill Fire occurred in the Mill Creek Recreation Area. Before the fire was contained the entire campground burned, which resulted in extensive damage to recreation resources, including wooden vehicle barriers, a kiosk and signs, a vault toilet, picnic tables, two pedestrian bridges that crossed Mill Creek, and a fence that excluded the campground from livestock use. Native vegetation within the campground, including valuable stream stabilizing vegetation was burned and has not regenerated to pre-fire conditions. The southernmost portion of the fire also engulfed 6.3 acres of an area designated for recreation use in the Shoshone OHV Trail System, as well as areas adjacent to the campground. Emergency stabilization measures were performed by the BLM following the fire, which included placement of temporary fencing around the campground and re-seeding of native vegetation to mitigate soil erosion and noxious and invasive weed encroachment. Additional improvements are needed to reestablish the recreational values in the area.

The Project Area is in portions of Township 29 North (T29N), Range 44 East (R44E) and Township 28 North (T28N), Range 44 East (R44E) of the Mount Diablo Base and Meridian, Lander County, Nevada.



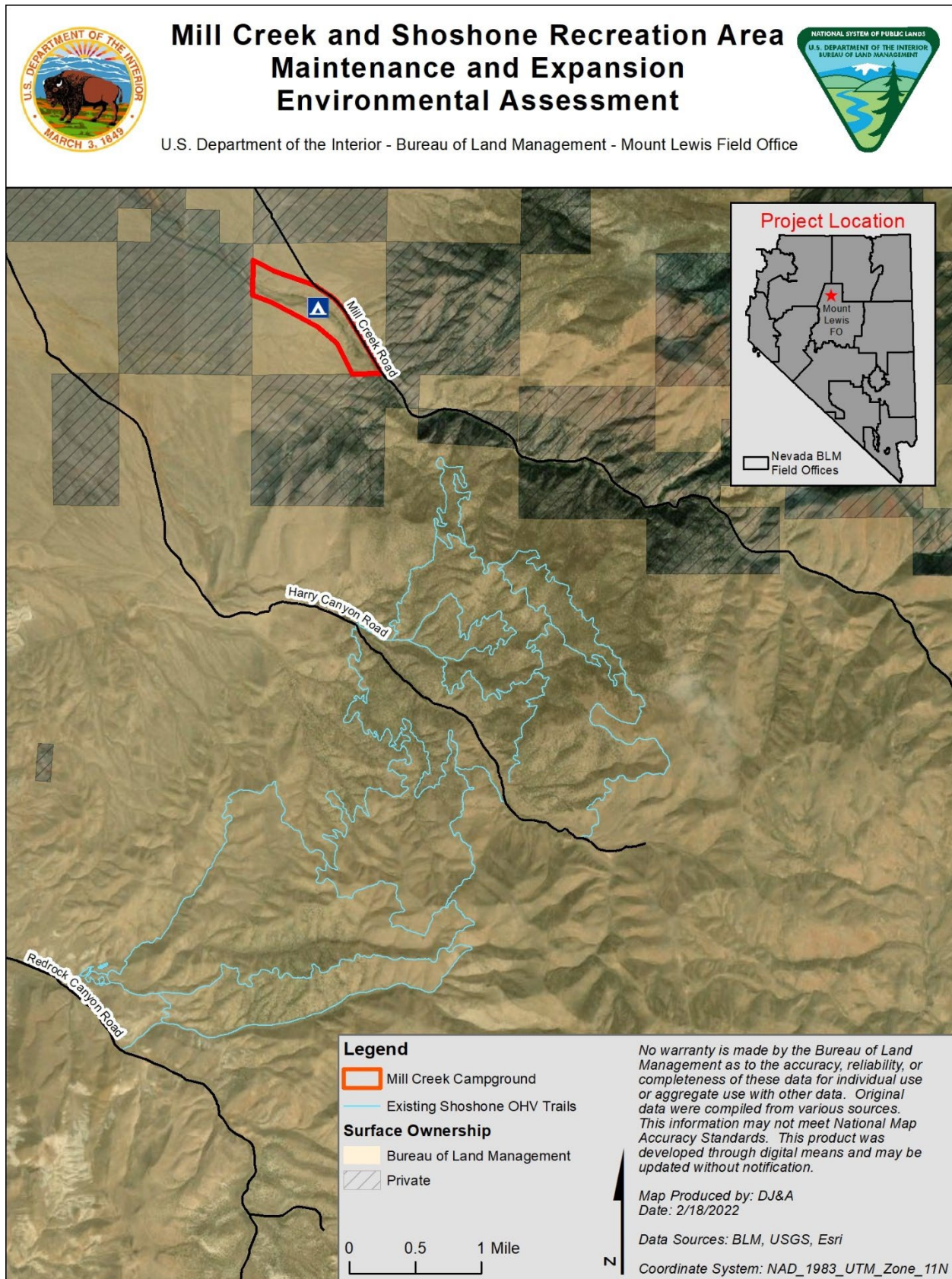


Figure 1. Project Area Location

## **1.2. Proposed Action**

To improve and reestablish recreational values in the area, the BLM Mount Lewis Field Office is proposing activities that include maintenance and upgrade of the Mill Creek Campground and Shoshone OHV Trail System. These activities would include constructing a permanent fence around the perimeter of the campground to accommodate additional tent sites, establishing a 2.4-mile pedestrian loop interpretive trail within the campground, and designating a 9.7-mile OHV connector trail to link the campground to the existing Shoshone OHV Trail System. The two pedestrian footbridges lost during the Mill Fire would also be replaced, and an existing OHV route that crosses Mill Creek would be upgraded for improved maintenance. To restore and increase native vegetation, seeding and planting would occur within the campground and along stream banks located within the campground perimeter.

## **1.3. Purpose and Need for Action**

Contrasts between the *Recreation Objectives* described in the BLM Shoshone-Eureka Resource Management Plan (RMP) (BLM 1987) and those existing on the ground (current conditions) illustrate the need for action. The *Recreation Objectives* detailed in the Shoshone-Eureka Resource RMP are summarized as follows:

- Develop the recreational potential of the public lands to a level sufficient to meet the growing demands of recreationists using the public lands.
- Encourage recreation use on the public lands.
- Insure the protection of the environment and aesthetic qualities within the resource area.

Recommendations detailed in the BLM Battle Mountain District Mill Creek Campground Enhancement Plan (2018) are summarized as follows:

- Campground facilities would be replaced and designed to meet specifications and compliance with the Americans with Disability Act (ADA).
- Restore native vegetation to minimize spread of noxious and invasive weeds and to stabilize soil, reducing potential sedimentation to Mill Creek.

The BLM proposes to improve the current conditions within the Project Area, which are incompatible with the objectives described above.

## **1.4. Scoping and Issues**

An Interdisciplinary (ID) Team of BLM resource specialists held a meeting on April 7, 2021, to discuss the project and identify potential issues of concern. The ID Team identified the elements associated with supplemental authorities and other resources addressed in this EA (Table 1).

## **1.5. Relationship to BLM and Non-BLM Policies, Plans, and Programs and Land Use Plan Conformance**

The BLM is responsible for the preparation of this EA, which was prepared in conformance with National Environmental Policy Act of 1969 (NEPA), applicable laws and regulations passed



subsequently, including the President's Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), US Department of Interior requirements, and the policy guidance provided in the BLM NEPA Handbook H 1790-1 (BLM 2008a).

The Proposed Action conforms with the BLM's Shoshone-Eureka RMP Record of Decision, Page 30 "Develop the recreation potential of the public lands to a level sufficient to meet the growing demands of recreationists using the public lands." And "Encourage recreation use on the public lands."

The Proposed Action conforms with the Shoshone-Eureka Resource RMP, Record of Decision, Page 31, which states, in part: "A recreation management plan or plans will be prepared for the preservation, protection, and interpretation of the following historical, cultural, and recreation areas:

- a. Cortez
- b. Amador
- c. Mt. Airy
- d. Carroll
- e. Pony Express Trail
- f. Hickison Petroglyph Recreation Area
- g. Mill Creek Recreation Area
- h. Tonkin Springs
- i. Roberts Creek
- j. Steiner Creek

The Proposed Action conforms with the Shoshone-Eureka Resource RMP, Record of Decision, Page 27, "Riparian & Aquatic Habitat Management": #1 "To improve priority riparian and stream habitat to good or better condition and prevent decline of remaining areas".

The Proposed Action is consistent with the Lander County Policy Plan for Federally Administered Lands (2005) which under the heading Off Highway Vehicles Policy W1 states "Direct OHV use to designated trails and actively discourage pioneering of new trails and use in sensitive areas through collaborative public education efforts with the local communities and federal planning partners" and Policy W2 "Support community efforts to expand the availability of OHV trails and resources..."(page 40-41, Section W. Off Highway Vehicles).

### **1.6. Decision to be Made**

The decision the BLM would make based on this EA include any of the following: 1) approve the Proposed Action; 2) approve the Proposed Action with additional mitigation measures that are needed to prevent unnecessary or undue degradation of public lands; or 3) do not authorize the project if it is found the Proposed Action does not comply with the 3809 and 2800 regulations and the Federal Land Policy and Management Act of 1976 mandate to prevent unnecessary or undue degradation.

## **2. DESCRIPTION OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE**

### **2.1. Proposed Action**

The BLM Mount Lewis Field Office is proposing activities that include maintenance and upgrade of the Mill Creek Campground and Shoshone OHV Trail System (Figure 2 and Figure 3). These activities would include:

- Enclose 170 acres of the campground area within a permanent fence. Prior to the Mill Fire only 80 acres of the designated 200-acre camping area was fenced. This expanded enclosure would allow for additional tent sites (five estimated) within the campground.
- Establish a 2.4-mile pedestrian loop interpretive trail within the campground with signage placed at various points around the trail. Trail width is expected to be approximately 8 feet wide. Sign specifications would follow BLM recreation manuals and polices for footings, height, font size, and placement standards. Information provided in the signage would include the Civilian Conservation Corps history of the campground and cultural history of the area.
- Two pedestrian footbridges would be replaced and located in the same area as the original pedestrian bridges that burned. Specifications would be similar to the bridges being replaced and would result in limited new ground disturbance.
- Designate a 9.7-mile OHV connector trail to link the campground to the existing Shoshone OHV Trail System. The connector trail would increase emergency medical access to the existing trail system. A portion of the trail will also serve as a multiple use trail located adjacent to the campground that leads to a scenic viewpoint.
- An existing OHV trail creek crossing would be upgraded to link the campground to the OHV trail system. This would be done by installing a culvert or geogrid.
- Restore and increase native vegetation by seeding and planting within the campground and along stream banks located within the campground perimeter.

All proposed changes would follow project design features, best management practices (BMPs) and BLM standard operating procedures to reduce impacts to natural resources, as listed in Section 2.2.

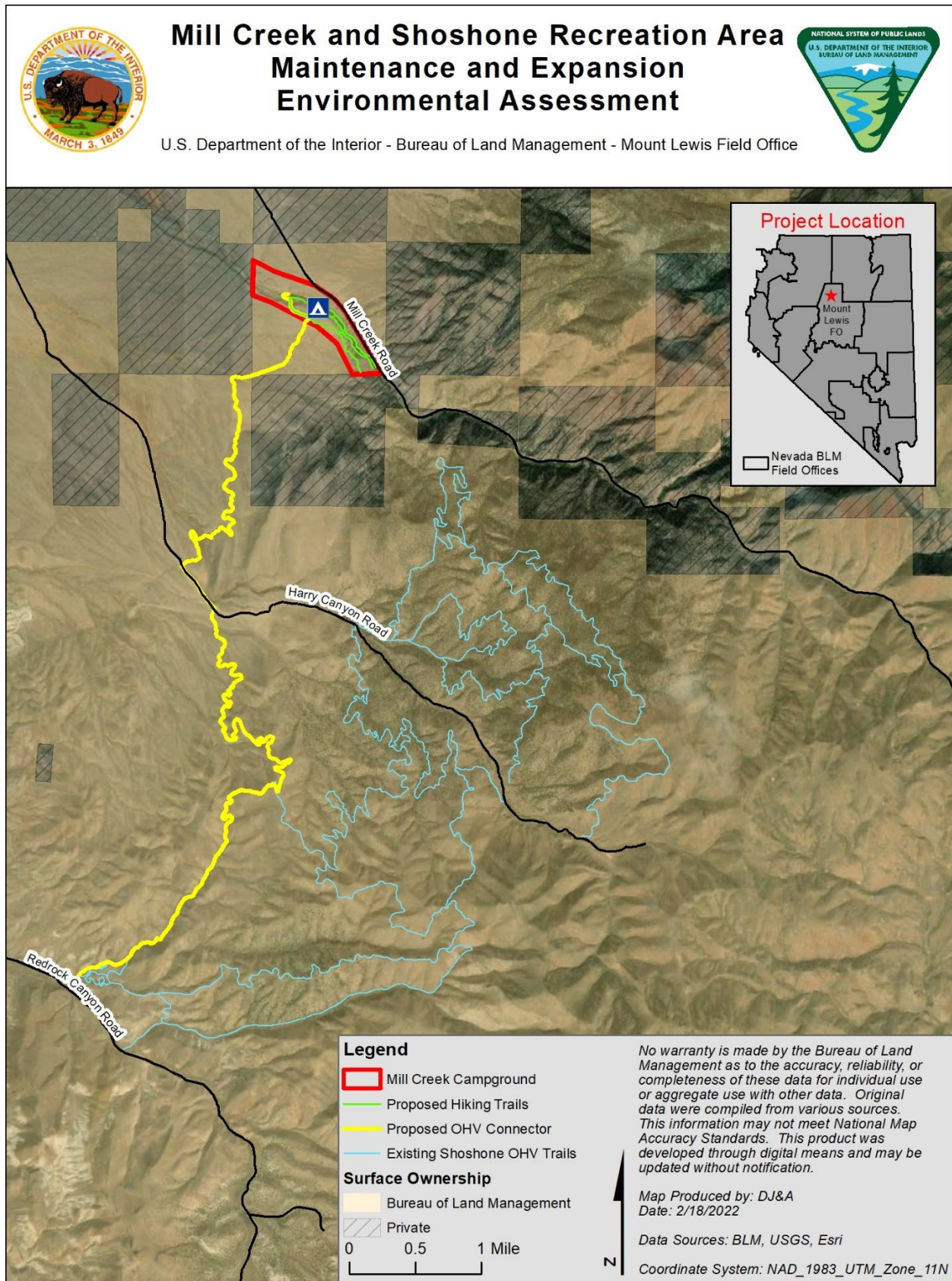


Figure 2. Proposed Shoshone OHV Connector Trail



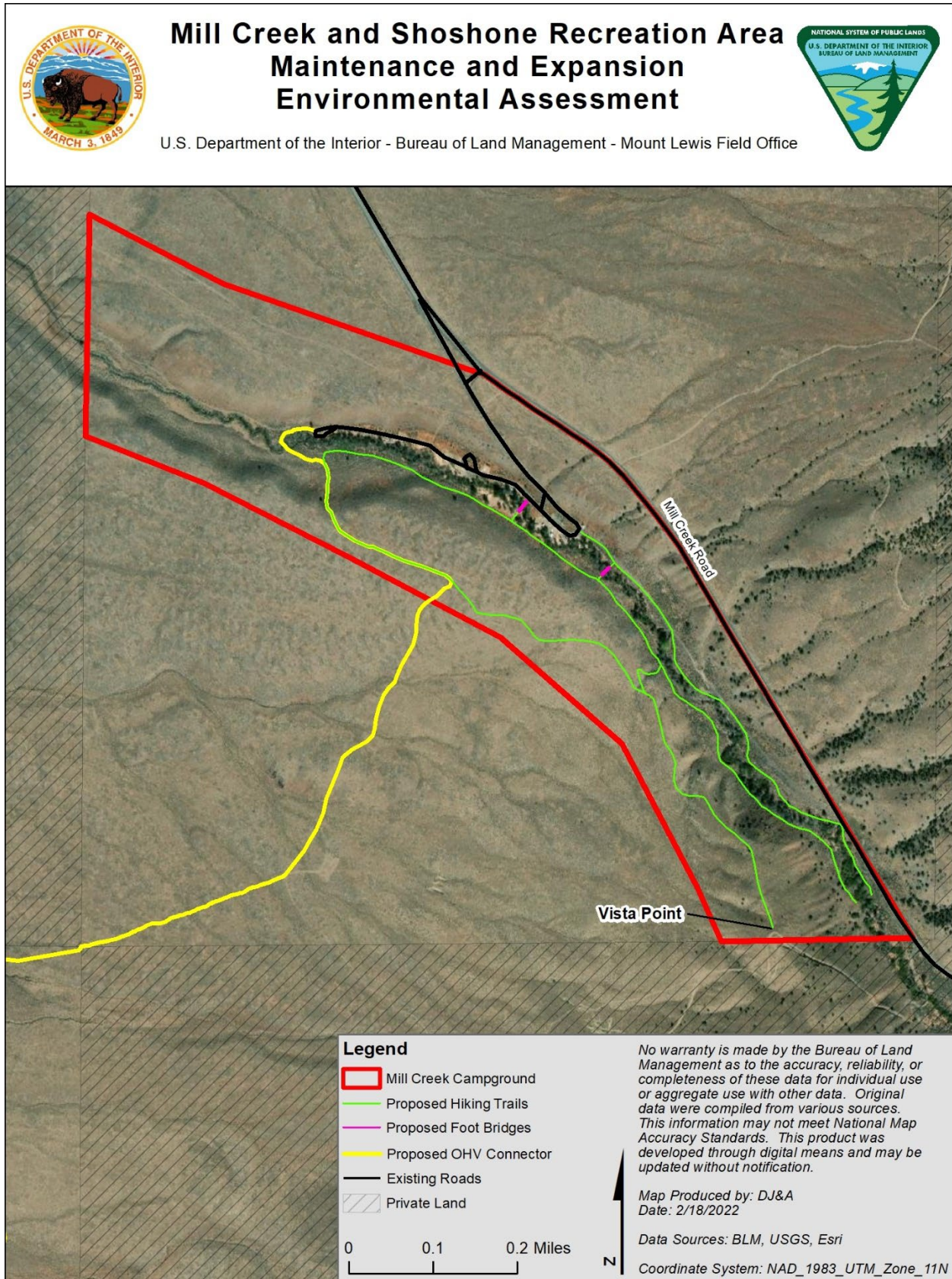


Figure 3. Proposed Interpretive Hiking Trail and Foot Bridges

## **2.2. Project Design Features**

Project design features were developed by the BLM in order to further minimize impacts to the resource. In some cases, such as air quality, the project design features eliminated the resource from a detailed analysis.

### **2.2.1. Air Quality**

- BMPs to mitigate dust caused by heavy equipment use from the project would be implemented.

### **2.2.2. Cultural Resources**

- If the interpretive trail cannot be re-routed to avoid the eligible site boundaries or a 30-meter site buffer, then a BLM-permitted archaeologist should be present to monitor the trail construction (BLM CR6-3231).

### **2.2.3. Migratory Birds**

- Land clearing or other surface disturbance associated with the activities within the Project Area would be conducted outside the avian breeding season, whenever feasible, to avoid potential destruction of active bird nests or young birds in the area. When surface disturbance must be created during the avian breeding season (April through July), a qualified biologist would survey the area prior to land clearing activities in accordance with current BLM protocols. Pre-disturbance surveys for migratory birds are only valid for 14 days. If the disturbance for the specific location does not occur within 14 days of the survey, another survey would be needed.

### **2.2.4. Fish and Wildlife (Including Federally Listed Species)**

- Following project construction, areas of disturbed land no longer required for recreation management would be reclaimed as required by the BLM to promote the reestablishment of native plants and wildlife.
- When possible, avoid clearing or grubbing milkweed plants to minimize impacts to monarch butterfly.
- To minimize impacts to water quality and fish, see project design features under water resources and soils sections below.

### **2.2.5. Paleontological Resources**

- In the event of a paleontological discovery, the BLM paleontologist shall be notified immediately and the area where the discovery is located would be avoided until the BLM assesses the locality.

### **2.2.6. Recreation**

- Recreationists will be asked to avoid temporary project construction activities for safety reasons.

- Signage would be implemented as appropriate including:
  - Signage designating authorized routes and permitted uses as well as seasonal and daily closures.
  - Trail designation and wayfinding markers

#### **2.2.7. Soils**

- Following project construction, areas of disturbed soil no longer required for recreational use would be seeded or planted to minimize erosion and promote the reestablishment of native plants or plants appropriate for the site.
- Project work will not be performed during wet conditions to minimize erosion and compaction.

#### **2.2.8. Vegetation**

- Revegetation of disturbed areas within the campground would be conducted as soon as practicable to reduce the potential for wind and water erosion, to minimize impacts to soils and vegetation, and to help prevent the spread of invasive and non-native species.
- All revegetation treatments would be monitored to verify that they are meeting expectations and to confirm that no additional treatments are needed.
- Any seed mixes and mulches used for reclamation would be certified weed free.

#### **2.2.9. Noxious and Invasive Weeds**

- Noxious and invasive weeds would be controlled through implementation of the following BMPs: washing heavy equipment prior to entering the Project Area and avoiding areas of known invasive, non-native, and noxious weeds during periods when the weeds could be spread by vehicles.

#### **2.2.10. Water Resources**

- BMPs would be used to limit erosion in disturbed areas and to reduce sedimentation to Mill Creek during construction activities.

#### **2.2.11. Wild Horses and Burros**

- Project-related personnel would be instructed to not feed or approach wild horses or burros.

### **2.3. No Action Alternative**

Under the No Action Alternative, the Project would not be approved by the BLM and the Mill Creek Campground and Shoshone OHV Trail System would remain in its current condition. The campground would not be expanded and improved to reestablish the area's recreational values and the Shoshone OHV Trail System would not be connected to the campground to improve recreational use. The objective of the No Action Alternative is to describe the impacts that would result if the Project were not implemented. The No Action Alternative forms the baseline for which the impacts of all other alternatives can be measured.



### 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The purpose of this section of the EA is to describe the existing environment of the NEPA Project Area, as well as environmental consequences (i.e., effects or impacts) from implementation of the Proposed Action or any of the listed alternatives of affected resources including the No Action Alternative. Project design features are incorporated as necessary in the relevant resource section. According to the CEQ regulations 40 CFR 1508.1, the terms “effects” and “impacts” are used interchangeably, and are defined as “changes to the human environment from the Proposed Action or alternatives that are ‘reasonably foreseeable’ (i.e., sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision) and have a reasonably close causal relationship to the Proposed Action or alternatives, including those effects that occur at the same time and place as the Proposed Action or alternatives and may include effects that are later in time or farther removed in distance from the proposed action or alternatives.” Additionally, “effects should not be considered if they are remote in time, geographically remote, or the product of a lengthy causal chain. Effects do not include those effects that the agency has no ability to prevent due to its limited statutory authority or would occur regardless of the proposed action.”

Supplemental authorities that are subject to requirements specified by statute or Executive Order must be considered in all BLM environmental documents. The elements associated with the supplemental authorities listed in the NEPA Handbook (BLM 2008) and in the Nevada IM 2009-030, Change 1, are listed in Table 1. The following elements have been determined as Not Present in the NEPA Project Area, Present/Not Affected, or Present/May Be Affected, and the following table provides the rationale for those determinations, or the section of the EA where the resource is discussed. The elimination of non-relevant elements complies with CEQ policy. Table 1 is organized first by elements and resources eliminated from detailed analysis, and then by elements and resources that are analyzed in detail in Chapter 3.

**Table 1. Elements Associated with Supplemental Authorities and Other Relevant Resources Assessment**

Supplemental Authority Element	Not Present	Present/ Not Affected	Present/May Be Affected	Rationale for Elimination
Air Quality		X		Project design features would be used to minimize dust created by heavy equipment work. The proposed activities would comply with Lander County Compiled Air Quality Regulations for construction and all necessary permits would be acquired before work begins. Therefore, this element is not further analyzed in this EA.
Areas of Critical Environmental Concern	X			This element is not present within the NEPA Project Area or vicinity.
BLM Natural Areas	X			The Proposed Action is not within any BLM Natural Areas.
Cultural Resources		X		A Cultural Resources Needs Assessment was completed for this project. The proposed interpretive hiking trail at the

Supplemental Authority Element	Not Present	Present/ Not Affected	Present/May Be Affected	Rationale for Elimination
				campground bisects three eligible sites. If the hiking trail cannot be re-routed to avoid these sites, a BLM-permitted archaeologist would be present to monitor the trail construction within the eligible site boundaries to prevent impacts (BLM CR6-3231). Therefore, this element is not further analyzed in this EA.
Farm Lands (Prime or Unique)	X			This element is not present within the NEPA Project Area or vicinity.
Fuels/Fire Management		X		Compliance with BLM fire restrictions and fire prevention measures would mitigate any risks associated with the proposed activities; therefore, this element is not further analyzed in this EA.
Forests and Rangelands (Healthy Forests Restoration Act [HFRA] projects only)	X			This Project does not meet the requirements to qualify as an HFRA project; therefore, this element is not further analyzed in this EA.
Geology and Mineral Resources		X		The proposed activities do not affect this resource; therefore, this element is not further analyzed in this EA.
Green House Gas/Climate Change		X		The proposed activities do not affect this resource; therefore, this element is not further analyzed in this EA.
Native American Concerns		X		Th BLM tribal liaison has performed outreach and no issues have been identified.
National Landscape Conservation System (National Conservation Area)	X			The Proposed Action would not impact conservation resources or any part of the National Landscape Conservation System.
Paleontological Resources		X		This resource is not known to be present within the NEPA Project Area or vicinity. However, protection measures for undiscovered paleontological resources are included as a project design feature.
Special Status Plant Species	X			Surveys were completed for BLM Special Status Plant Species in 2020 and 2021; no species were observed or are known to occur. According to USFWS’s Information for Planning and Consultation (IPaC), there are no federally listed plant species that are known to occur within the Project Area (USFWS 2021). Therefore, this element is not further analyzed in the EA
Transportation/Traffic		X		Transportation/traffic was previously analyzed in the Shoshone Range OHV ROW EA (NV-062-EA-06-41 September

Supplemental Authority Element	Not Present	Present/ Not Affected	Present/May Be Affected	Rationale for Elimination
				2008). Therefore, this element is not further analyzed in this EA.
Transmission Corridors		X		The proposed activities do not affect this resource; therefore, this element is not further analyzed in this EA.
Visual Resources		X		The NEPA Project Area is in a Visual Resource Management Area III. Fence and hiking trail placement would conform with the Class III designation.
Wastes – Hazardous/Solid		X		Hazardous and solid wastes may exist in the form of illegal dumps and spills and is a concern on public lands. The campground and trails would be monitored for dumping. Therefore, this element is not further analyzed in this EA.
Wild and Scenic Rivers	X			This element is not present within the NEPA Project Area or vicinity. These elements are not further analyzed in this EA.
Wilderness/Wilderness Study Area (WSA)/lands with wilderness characteristics	X			Wilderness or WSAs are not present within the NEPA Project Area or vicinity. These elements are not further analyzed in this EA.
Lands and Realty			X	Impacts assessed in EA.
Migratory Birds (including Bald and Golden Eagles)			X	Impacts assessed in EA.
Fish and Wildlife (Excluding Federally Listed Species)			X	Impacts assessed in EA.
Special Status Wildlife Species			X	Impacts assess in EA.
Rangeland Management/Livestock Grazing			X	Impacts assessed in EA.
Recreation			X	Impacts assessed in EA.
Soils			X	Impacts assessed in EA.
Socioeconomics			X	Impacts assessed in EA.
Environmental Justice			X	Impacts assessed in EA.
Vegetation (Excluding Federally Listed Species)			X	Impacts assessed in EA.
Noxious Weeds, Invasive and Non-native Species			X	Impacts assessed in EA.
Water Resources (including Wetlands, Riparian Zones, and Floodplains)			X	Impacts assessed in EA.
Wild Horses and Burros			X	Impacts assessed in EA.

Potentially affected elements, resources, or uses are analyzed in the section below. The potential effects of the No Action Alternative on both supplemental authorities and other resources or uses are also discussed in these sections. Those elements listed under the supplemental authorities that do not occur in the Project Area and elements present but would not be affected are not evaluated further in this EA, based on the rationale provided in Table 1.

### ***Effects Analysis Definitions***

**Negligible:** Effects to land use or affected resources would either not occur, or impacts would be so slight as to not be measurable or perceptible. The proposed project would not result in any inconsistencies with existing land use plans, goals, and policies.

**Minor:** Effects to land use or affected resources would be measurable and perceptible but would be small and would not affect the validity of existing land use authorizations or affected resources. Project design features would effectively minimize impacts to land use or affected resource areas. The proposed project would not result in any inconsistencies with existing land use plans, goals, and policies.

**Moderate:** Effects to land use or affected resources would be readily apparent and measurable. The proposed project would conflict with existing land use plans, goals, and policies, and may require modifications to these plans for conformance. Additional project design features may be required to minimize impacts to land use and affected resource areas, but these measures likely would be successful.

**Major:** There would be significant conflicts with existing land uses. The proposed project would result in significant conflicts with existing land use plans, goals, and policies, and modifications to these land use plans would be required. Mitigation measures beyond project design features may be required to minimize impacts to land use and affected resources, and these measures would have to be monitored to determine their effectiveness.

**Temporary:** Effects would occur during construction or maintenance activities.

**Short-term:** Effects would last for the duration of the project (0-5 years).

**Long-term:** Effects would last after the project is complete (greater than 5 years)

**Permanent:** Effects to land use or affected resources would be permanent.

**Localized:** Effects on land use or affected resources would be limited to the Project Area.

**Regional:** Effects on land use or affected resources would extend beyond the Project Area.

## **3.1. Lands and Realty**

### **3.1.1. Affected Environment**

Figure 1 shows the Project Area location, access, and land ownership status. The BLM manages lands and realty on public land for multiple use including rights-of-way. The primary legal basis for granting a right-of-way on BLM land is Section 501 of the Federal Land Policy and

Management Act of 1976 (FLPMA). FLPMA provides the BLM with authority to grant or renew rights-of-way for the use, occupancy, and development of public lands.

The lands within and adjacent to the Project Area can be characterized as open rangeland and mountainous terrain interspersed with roads, utilities, and communication lines, ranching, and widely dispersed residential uses on private parcels. The current land uses in the Project Area and vicinity consist primarily of recreational use, grazing, and mineral exploration.

### **3.1.2. Environmental Consequences**

This section discusses impacts to lands and realty within the Project Area. Potential impacts are determined by changes to the following:

- Changes in land ownership status
- Changes in land use

#### *3.1.2.1. Proposed Action*

OHV trail designation would conform to the terms and conditions of any previously issued rights-of-way and would not result in any changes to the maintenance and operations of existing rights-of-way. If there is no pre-existing right-of-way or legal easement for the portion of trail going through a private parcel, there would be the potential for private landowners to refuse public access across their parcel and a minor trail reroute would occur.

#### *3.1.2.2. No Action Alternative*

Under the No Action Alternative, the OHV connector trail would not be designated, and the Shoshone OHV Trail System would continue to be managed according to previous authorizations. Use on existing trails would continue to be used at the current levels and with current impacts. A more direct emergency access route would not be provided to link the current trail system.

#### *3.1.2.3. Cumulative Effects*

Past and present lands and realty actions within the area include utilities and communication lines, roads, and water pipelines. The designation of the OHV connector route would result in a minor increase in motorized use and human presence along trails in the area. There would be a negligible contribution to rights-of-way authorizations in the cumulative effects analysis area.

## **3.2. Migratory Birds**

### **3.2.1. Affected Environment**

The Migratory Bird Treaty Act (MBTA), as amended, made the taking, killing, or possessing of migratory birds unlawful. Executive Order 13186 of 2001 clarified the responsibilities of federal agencies regarding migratory bird conservation and directed federal agencies to evaluate the effects of federal actions on migratory birds with an emphasis on species of concern. The Executive Order also directed federal agencies to develop a Memorandum of Understanding with the U.S. Fish and Wildlife Service (USFWS) regarding their role with respect to the MBTA.

Baseline migratory bird surveys were previously conducted in the Project Area between 2009 and 2013 (BLM 2021b). In 2021, baseline migratory bird surveys were again conducted to provide up to date information on MBTA-protected species that occur within the Project Area. A total of 70 avian species were positively identified between 2009 and 2013 and in 2021 (Appendix A). The species observed are typical of north-central Nevada sagebrush shrublands and pinyon-juniper woodlands.

### **3.2.2. Environmental Consequences**

Potential impacts are determined by changes to the following:

- Disturbance during the breeding season
- Short term and permanent changes to habitat

#### *3.2.2.1. Proposed Action*

For the purposes of this impact analysis, the entire OHV connector route, the pedestrian trails, and the campground are considered to cross through potential habitat for migratory bird species, although a portion of the route does follow existing two-tracks and a portion of the Shoshone OHV Trail System. In the short-term, construction of the connector trail, new campground fencing, tent pad sites, pedestrian trails, and creek crossing could increase the risk of direct mortality if nests with young or eggs were in the project disturbance footprint.

In the long-term, increased human presence and OHV use could result in a direct, permanent, or semi-permanent loss of habitat and an alteration of plant species composition in the area immediately adjacent to designated route segments and campground. Increased human presence, OHV use, and noise could result in loss of individual birds through nest abandonment and route construction could result in temporary habitat disturbance. Short-term and long-term impacts would be negligible or minor due the size and linear nature of the disturbance. Because the migratory bird breeding season ends no later than July 31, and increased OHV use is assumed to occur from May to September, there would be an increased risk of interference with breeding behavior in May, June, and July.

These risks and associated impacts to migratory birds would be minimized or eliminated because of project design features, which require construction to occur outside of the breeding season or surveys to occur prior to any disturbance. Because of the small size and scope of the project, the high amount of available undisturbed habitat immediately adjacent to the Project Area, and project design features, direct and indirect impacts to migratory birds are anticipated to be negligible or minor. The proposed restoration of native vegetation and additional livestock fencing associated with the Proposed Action would result in a benefit to migratory bird species.

#### *3.2.2.2. No Action Alternative*

Any existing habitat disturbance and OHV usage trends within the Project Area would continue under the No Action Alternative. Migratory bird species that use habitat along existing routes in the Project Area would continue to use habitat at current levels.



### 3.2.2.3. *Cumulative Effects*

Past, present, and foreseeable actions such as livestock grazing, wildfire, other recreational uses, and access to mineral rights all contribute incrementally to the increased risk of impacts to migratory birds. The Proposed Action would result in an increase in noise from motorized use and human presence along existing trails during the migratory bird nesting period from April to July and may result in displacement, nest avoidance, injury, or mortality. Because of the small size and scope of the project and project design features, cumulative impacts to migratory birds are anticipated to be negligible or minor.

## **3.3. Fish and Wildlife (Excluding Federally Listed Species)**

### **3.3.1. Affected Environment**

Wildlife habitat in the Project Area is typical of the Great Basin and includes sagebrush, pinyon-juniper woodland, and riparian-wetland habitats near the campground. Available water for wildlife consumption and vegetation for cover, breeding, and foraging are the primary limiting factors for wildlife throughout the Project Area.

Several species of reptiles have been documented within the Project Area (BLM 2021b). Common reptile species include western fence lizard (*Sceloporus occidentalis*), Great Basin gophersnake (*Pituophis catenifer*), leopard lizard (*Gambelia wislizenii*), sagebrush lizard (*Sceloporus graciosus*), and Great Basin rattlesnake (*Crotalus oreganus lutosus*). Reptile species in the Project Area occupy a variety of habitats, from sagebrush and desert scrub to grassland, and pinyon-juniper woodland. Reptiles often bask along roadways and/or on rocks at various times of day, depending on climatic conditions. Any amphibians would primarily be encountered near perennial and, to a much lesser extent, ephemeral water sources.

Brown and brook trout have been documented in Mill Creek in reaches that support higher canopy cover—few or no trout have been documented in reaches with little or no canopy cover. Mill Creek is the only water resource in the Project Area that supports fish or aquatic-obligate species. The National Hydrology Dataset (NHD) attributes Mill Creek as a perennial stream as it flows through the campground and a half mile to the west downstream of the campground. At this point a ditch and a pipeline divert the flow to support agriculture three miles to the west. NHD classifies Mill Creek as intermittent from this point on.

Small and mid-sized mammal species in the Project Area occupy a broad range of habitat types, including grassland, desert scrub, sagebrush, and pinyon-juniper woodland. Some of the more common small-mammal species include American mouse (*Peromyscus maniculatus*), least chipmunk (*Tamias minimus*), black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), American badger (*Taxidea taxus*), coyote (*Canis latrans*), and white-tailed antelope ground squirrel (*Ammospermophilus leucurus*).

Big-game species occurring in the Project Area consist of mule deer (*Odocoileus hemionus*), and pronghorn (*Antilocapra americana*). The Project Area is in Hunt Management Unit 152 within Area 15 and the connector route intersects 4.2 miles of mule deer winter habitat (Nevada Department of Wildlife (NDOW) 2017) (Figure 4).

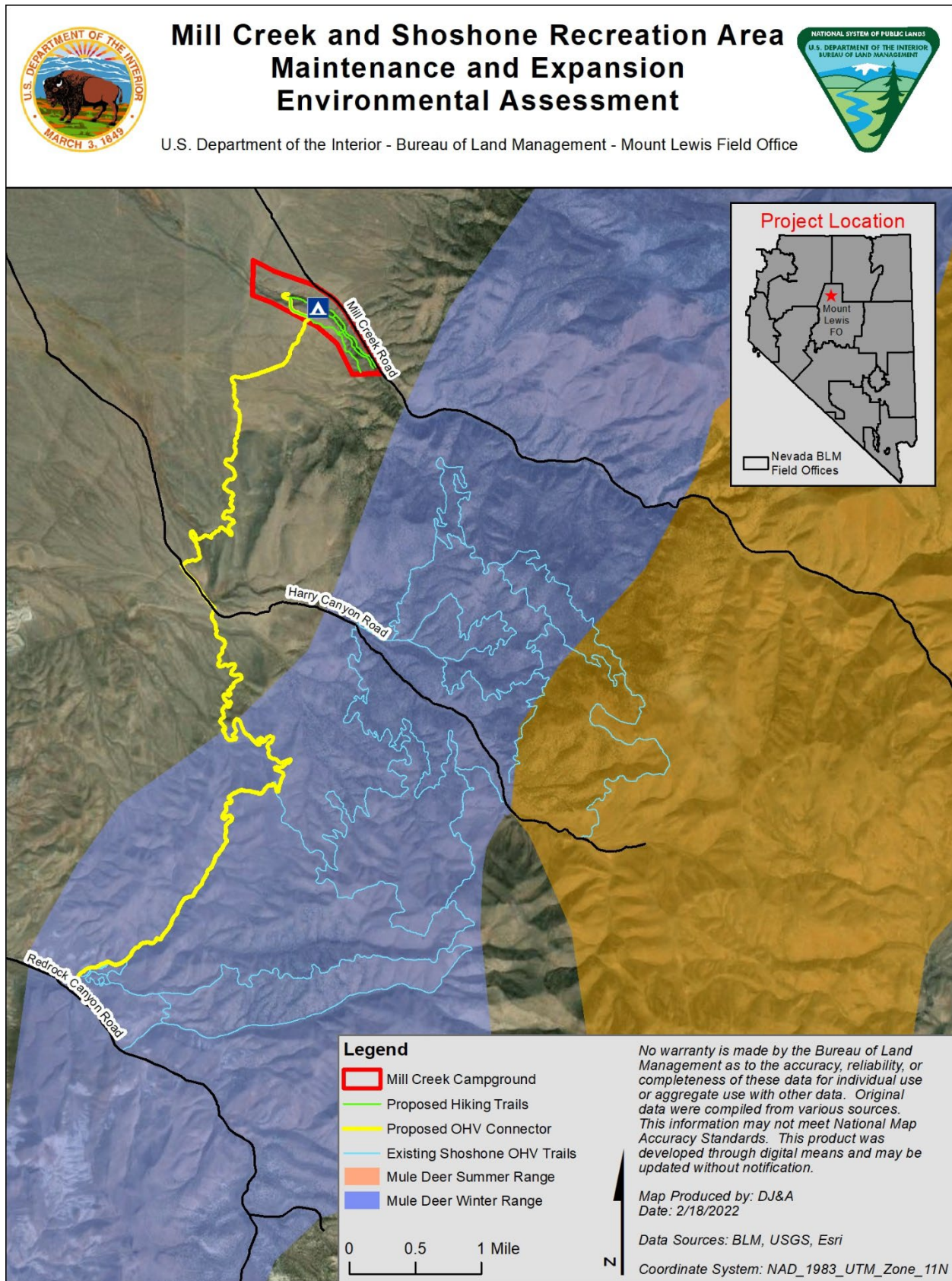


Figure 4. Mule Deer Habitat in the Project Area

Preferred mule deer habitat consists of big sagebrush, low sagebrush, upland shrub/scrub communities, and grassland areas. Mule deer rely on sagebrush and pinyon-juniper woodlands during winter for thermal protection, forage, and to escape from predation. Overall, Area 15 population (units 151-156) were most recently estimated at 2,000. This is stable from 2020, but the population is still in a declining trend. During the summer months, pronghorn are widely spread throughout the valleys and mountain foothills. Occupied year-round pronghorn habitat exists within portions of this Project Area, and the connector route intersects 5.3 miles of that range (NDOW 2017) (Figure 5). Pronghorn primarily use Great Basin sagebrush and grassland habitat types and rely on sagebrush habitat for both food and cover. Overall population (units 141, 143, 151-156) were most recently estimated at 3,900. This population is increasing.

Big-game species migrate seasonally from summer range to winter range throughout the county. Daily and seasonal movement patterns exhibited by big-game species are generally associated with climatic cues, and they travel between available surface water features, forage, and cover. Natural features such as canyons and washes are often used as migration corridors between sites.

### **3.3.2. Environmental Consequences**

Potential impacts are determined by changes to the following:

- Short term and permanent changes to habitat
- Increases in recreational use and noise

#### *3.3.2.1. Proposed Action*

For the purposes of the impact analysis, all actions associated with the proposed activities are considered to move through potential reptile habitat. There may be crushing associated with project construction; however, these risks would be minor considering the size and scope of the project. Reptile species along the connector route have limited mobility and may not be able to easily avoid increased OHV traffic. This risk would increase during the warmer months of the year, when these species are more active and more commonly encountered basking along roadways. Short-term and long-term impacts are anticipated to be similar in intensity for reptile species.

The project would have negligible or minor short-term adverse impacts and minor long-term beneficial impacts on fish species (brown and brook trout). The improved creek crossing, whether it be a culvert, or the installment of a geogrid would require temporary and short-term instream work. This instream work would potentially generate a low-level amount of sedimentation in the water channel. Any fish in the immediate area would likely be able to avoid detrimental amounts of sediment that could impact their health or behavior. Once installed, the culvert or geogrid would benefit fish because the streambank and channel bottom would be stabilized, thus improving water quality, and decreasing sedimentation. Additionally, the restoration of native plant species along the streambank as part of the project would create beneficial canopy cover and long-term habitat for fish and their prey.



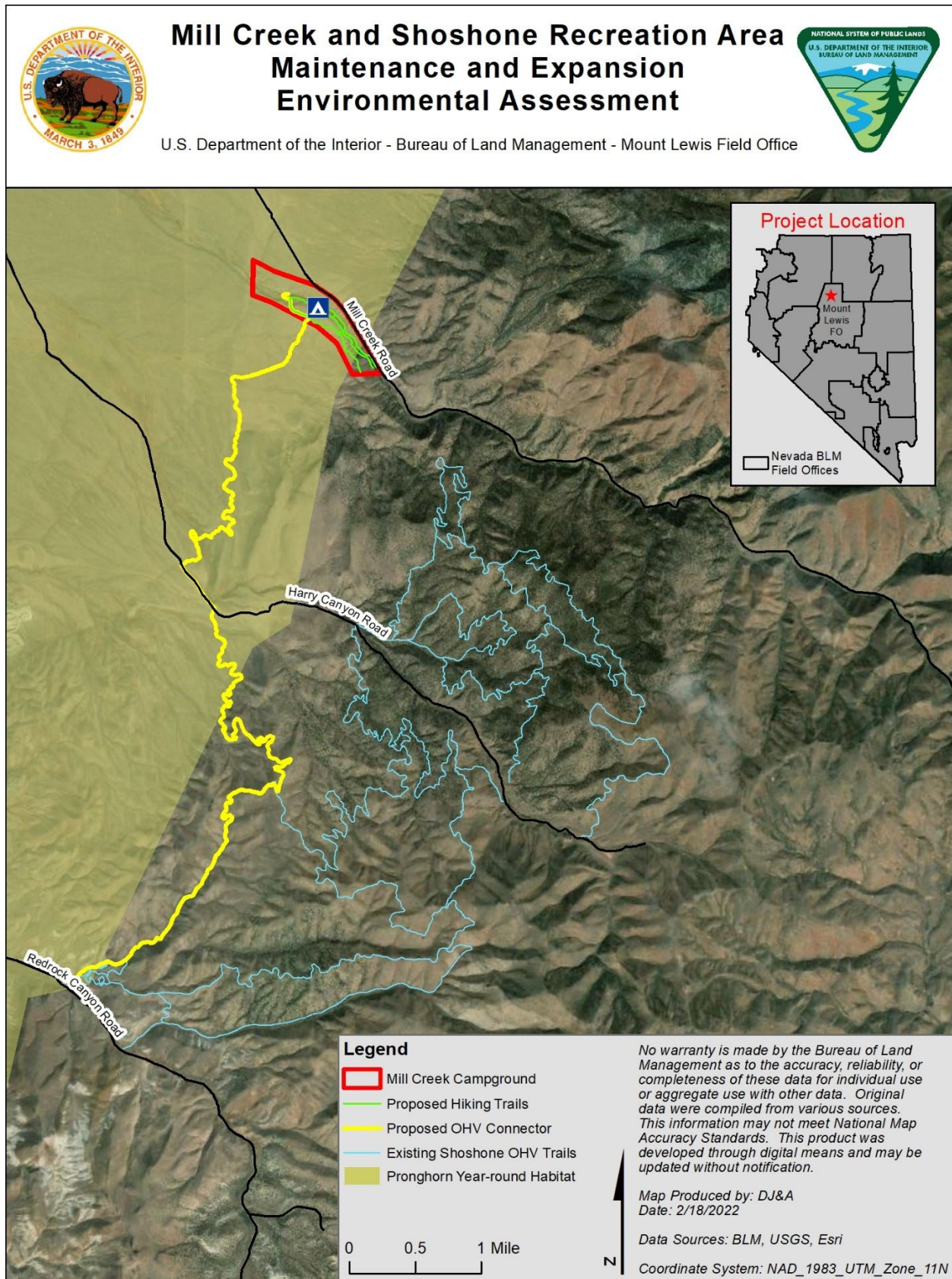


Figure 5. Pronghorn Habitat in the Project Area

For the purposes of impact analysis, all trails are considered to cross through potential habitat for small and mid-sized mammals. The risk of direct impacts to small to mid-sized mammals as a result of crushing from increased OHV traffic would potentially occur along the new connector trail. Small and mid-sized mammal species along the route have various ranges of mobility and in some cases may not be able to easily avoid increased OHV traffic. The amount of hiding and thermal cover removed for trail construction would be negligible as it compares to the available cover within the area. Short-term and long-term impacts are anticipated to be similar in intensity for small and mid-sized mammals.

Studies have shown that noise and other disturbances associated with OHV activities would result in increased risk of elevated stress levels in a variety of wildlife species. For example, studies have shown that ungulates, birds, and reptiles all experience accelerated heart rates and metabolic function during disturbance events (Havlick 2002). Distance to roads open to motorized vehicles have been identified as a predictor of deer and pronghorn distributions. Studies measuring responses of deer to OHV use show conflicting results. One study concluded that responses were minimal and that no statistical correlation between OHV activity levels and animal activity levels occurred (Ferris and Kutilek 1989). Another study on deer in the Rock Creek OHV area in the Eldorado National Forest concluded that deer were not affected by OHV use and found that deer did not alter their habitat use because of higher traffic levels. Alternatively, the same Ferris and Kutilek (1989) study showed that deer avoided OHV use areas during periods of increased use but returned after traffic levels decreased, which indicates that at least some additional energy expenditure would occur in association with increased OHV use. Pronghorns also have been found to exhibit higher vigilance levels and change in foraging behavior when near roads, regardless of traffic levels (Gavin and Komers 2007).

Increased OHV traffic associated with the designation of this route may increase the risk of mortality to big-game species from collision with OHVs. Increased human presence, noise, and vibration associated with the increase in OHV traffic along the route would also result in increased energy expenditures and interference with behavioral activities as individual animals move away from the route. Increased human presence and noise from OHVs may interfere with movement and migration behavior of big game species. These impacts to migration would be intermittent and would only occur during periods of migration and when increased levels of OHV traffic are present. Due to the size and scope of the project, all impacts, both short-term and long-term, are anticipated to be minor.

Indirect long-term impacts that would result from increased OHV use in the Project Area consist of an increased risk in the spread of noxious and invasive weed species along the route, which could result in a reduction in forage quality for wildlife along the route. These indirect impacts are anticipated to be negligible or minor.

#### 3.3.2.2. *No Action Alternative*

Existing habitat disturbance and OHV usage trends on the existing trails within the Project Area would continue under the No Action Alternative. Wildlife species that occur in the Project Area would continue to use habitat at current levels. Individual animal mortality of less mobile species

from existing motorized use, presence of invasive vegetation, and decreases in water quality from the existing creek crossing would continue under current conditions.

### 3.3.2.3. *Cumulative Effects*

Past, present, and future actions such as livestock grazing, access to mineral rights, and other recreational uses all contribute incrementally to the increased risk of impacts to wildlife species. The Proposed Action would result in an increase in noise and human presence from motorized use along the connector trail and may result in temporary displacement, and in some cases direct mortality from crushing. Because of the small size and scope of the project and project design features, cumulative impacts to wildlife are anticipated to be negligible or minor.

## 3.4. Special Status Wildlife Species

### 3.4.1. Affected Environment

### 3.4.2. Threatened, Endangered, and Candidate Animal Species

The USFWS's Information for Planning and Consultation (IPaC) identified the monarch butterfly with potential to occur in the Project Area (USFWS 2021). The monarch butterfly is a candidate species as of 2020. Patches of milkweed (*Asclepias spp.*) were found during the botanical surveys for special status plant species. Sparse numbers of milkweed were found in the Mill Creek Campground, with a higher number of individuals along Mill Creek on the east side of the campground.

### 3.4.3. BLM Nevada Sensitive Species

The following avian and mammalian BLM and Nevada Sensitive Species were identified in the as having potential habitat within the Project Area (Appendix B):

#### *Birds*

- Brewer's sparrow (*Spizella breweri*)
- Ferruginous hawk (*Buteo regalis*)
- Golden eagle (*Aquila chrysaetos*)
- Greater sage-grouse (*Centrocercus urophasianus*)
- Loggerhead shrike (*Lanius ludovicianus*)
- Northern goshawk (*Accipiter gentilis*)
- Pinyon jay (*Gymnorhinus cyanocephalus*)
- Sage thrasher (*Oreoscoptes montanus*)
- Western Burrowing Owl (*Athene cunicularia*)
- Swainson's Hawk (*Buteo swainsoni*)

#### *Mammals*

- Big brown bat (*Eptesicus fuscus*)
- California myotis (*Myotis californicus*)
- Dark kangaroo mouse (*Microdipodops megacephalus*)
- Fringed myotis (*Myotis thysanodes*)



- Little brown myotis (*Myotis lucifugus*)
- Long-eared myotis (*Myotis evotis*)
- Long-legged myotis (*Myotis volans*)
- Pygmy rabbit (*Brachylagus idahoensis*)
- Silver-haired bat (*Lasionycteris noctivagans*)
- Spotted Bat (*Euderma maculatum*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- Western small-footed myotis (*Myotis ciliolabrum*)

*Passerines (Brewer's Sparrow, Loggerhead Shrike, Pinyon Jay, and Sage Thrasher)*

The BLM and Nevada Sensitive passerine bird species listed above were observed during wildlife surveys in the Project Area, and one pinyon jay nest was documented. All species likely use the Project Area for both foraging and breeding. The passerines in the Project Area all nest on the ground or in shrubs or small trees.

*Raptors (Ferruginous hawk, golden eagle, northern goshawk, western burrowing owl, and Swainson's hawk)*

Nesting raptor surveys were conducted in 2009 and 2010. BLM and Nevada Sensitive raptor nesting areas and foraging habitat are known to occur throughout the general area and near the proposed OHV connector trail. Special-status raptors known to occur in the area include golden eagle, ferruginous hawk, Swainson's hawk, and western burrowing owl. These species nest in various substrates, and primarily forage in sagebrush and grassland areas where small-mammal prey is abundant.

*Greater Sage-grouse*

Greater sage-grouse telemetry monitoring and lek counts were conducted from 2008 through 2011. The results show that greater sage-grouse density in the general area appears to have declined substantially over the last decade or more.

There are no active or pending leks in the Project Area (USGS 2015). As shown in Figure 6, the Project Area crosses through General and Other greater sage-grouse habitat classifications, as defined in the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (ARMPA) (BLM 2015).

*Dark Kangaroo Mouse and Pygmy Rabbit*

Pygmy rabbit protocol-level surveys were conducted in 2008; no dark kangaroo mouse surveys have been completed in the Project Area. There is little pygmy rabbit habitat in the Project Area, as the sagebrush is either too short, or was burned in the 2017 Mill Fire. There is adequate dark kangaroo mouse habitat throughout the Project Area.

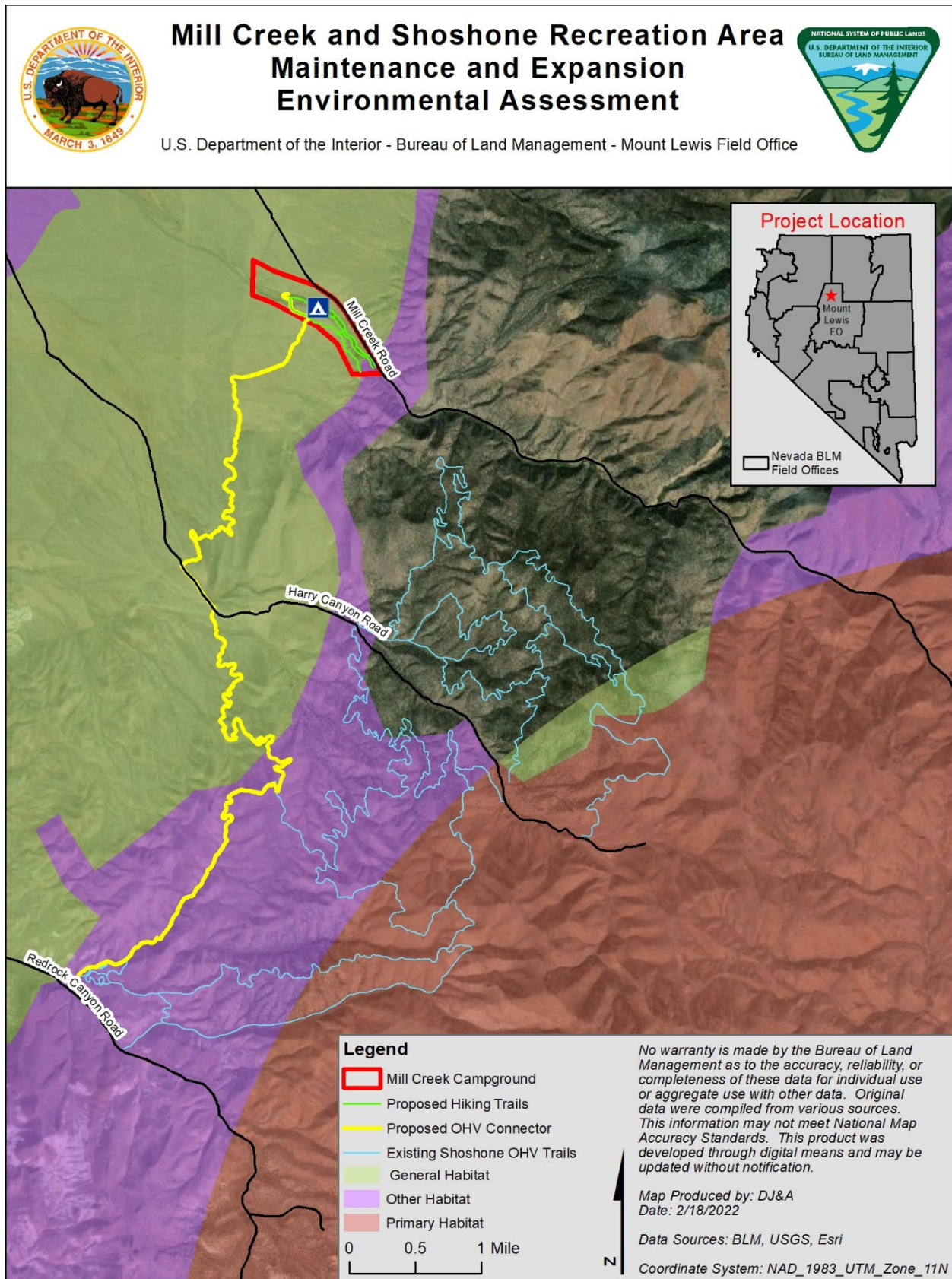


Figure 6. Greater Sage-Grouse Habitat in the Project Area

### *Bats*

All of the 10 BLM and Nevada Sensitive bat species depend on caves, mines, rock crevices, or manmade structures for day roosts. Therefore, the Project Area supports only foraging habitat during twilight or nighttime hours. No bats were observed during wildlife surveys.

#### **3.4.4. Environmental Consequences**

Potential impacts are determined by changes to the following:

- Short term and permanent changes to habitat
- Increases in recreational use and noise

##### *3.4.4.1. Proposed Action*

##### *3.4.4.2. Threatened, Endangered, and Candidate Animal Species*

Potential short-term impacts to monarch butterflies include the removal of its larval host plant, milkweed, which has been documented in the Project Area. Because the numbers of milkweed are sparse, and because project design features include avoiding the removal of milkweed, there would be negligible adverse impacts to the monarch butterfly. There is also a possibility for long-term beneficial impacts to monarch butterflies because riparian and stream restoration activities would provide increased habitat for milkweed propagation.

##### *3.4.4.3. BLM and Nevada Sensitive Species*

##### *Brewer's Sparrow, Loggerhead Shrike, Pinyon Jay, and Sage Thrasher*

The impacts to BLM and Nevada Sensitive passerine species are the same as those discussed under the Migratory Bird Section. Project design features would minimize or eliminate any adverse impacts to these species.

##### *Raptors (Ferruginous hawk, golden eagle, northern goshawk, western burrowing owl, and Swainson's hawk)*

Raptors are known to nest near, but outside of, the proposed connector route. It is assumed that nesting raptors along existing roads and trails are acclimated to existing traffic levels; however, increased OHV traffic does present the risk of nest failure or abandonment. Auditory and/or visual disturbance from increased OHV traffic and human presence may displace raptors from areas adjacent to the proposed connector route. Based on the size and scope of the project, these short-term and long-term impacts are anticipated to be negligible to minor.

##### *Greater Sage-grouse*

Table 2 describes the amount of new permanent disturbance anticipated in each type of greater sage-grouse habitat within the Biologically Significant Unit (Central Great Basin). Biologically Significant Units are geographic units that contain relevant and important greater sage-grouse habitat (BLM 2015). New permanent disturbance acres were derived from the acres of the proposed connector route (length times the width of the route (70 inches)), minus the portions that are existing two-tracks and existing BLM-administered OHV routes.

**Table 2. Greater Sage-Grouse Habitat Classifications and Level of Disturbance Associated with the Connector Route**

Habitat <sup>1</sup>	Total in Biologically Significant Unit (Acres)	Total New Disturbance (Acres)	Percent of New Disturbance in Biologically Significant Unit
Priority Habitat Management Areas	1,343,545	0.0	0.0000%
General Habitat Management Areas	1,008,210	3.7	0.0004%
Other Habitat Management Areas	840,869	0.4	0.0001%
Non-habitat	830,869	0.0	0.0000%
Total	4,022,651	4.1	0.0005%

There would be negligible short-term and long-term impacts to greater sage-grouse habitat from the project as they relate to the Biologically Significant Unit (Central Great Basin). Because of the absence of active or pending leks, and because of project design features for avian resources, there would be no impacts to greater sage-grouse breeding activity. If individuals are present during construction or increased OHV use, they may be temporarily displaced; impacts would be localized and temporary and would not jeopardize the continued existence of the species. There would be negligible habitat disturbance associated with the construction of the new connector route. The additional fencing associated with the campground may benefit greater sage-grouse because livestock would be excluded from grazing in Priority Habitat Management Areas or Other Habitat Management Areas classifications that overlap with the campground.

#### *Dark Kangaroo Mouse and Pygmy Rabbit*

An increase in OHV use and the construction of the connector route within areas of pygmy rabbit habitat would increase the risk of mortality from crushing. Additionally, increased OHV traffic may result in the abandonment of burrows, displacement of individuals, and interference with behavioral activities such as foraging and reproduction. Because of the limited size and scope of the project, both short-term and long-term impacts to pygmy rabbits and the dark kangaroo mouse are anticipated to be minor and would not contribute to the jeopardization of either species.

#### *Bats*

The 4.1 acres of new disturbance associated with the OHV connector route would not remove foraging habitat to a level of detriment to bat species. Because bats would only use the Project Area for twilight or nighttime foraging, and because OHV use during these times is limited, there are no short-term or long-term impacts anticipated to bat species.

<sup>1</sup> Habitat Management Areas obtained from *Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment and Record of Decision*. Prepared by US Department of the Interior, Bureau of Land Management, Nevada State Office, September 2015

#### 3.4.4.4. *No Action Alternative*

#### 3.4.4.5. *Federally Listed Species, BLM Sensitive and Nevada Protected Species, and Raptors*

Existing habitat disturbance and OHV usage trends on the existing routes within the Project Area would continue under the No Action Alternative. Special-status species that occur along existing routes would continue to use habitat at current levels.

#### 3.4.4.6. *Cumulative Effects*

Past, present, and future actions such as livestock grazing, other recreational uses, and access to mineral rights, all contribute incrementally to the increased risk of impacts to special status species by means of displacement and direct mortality from crushing. The Proposed Action would result in increases in noise and human presence from motorized use along the connector trail and may result in incremental temporary displacement and in some cases direct mortality from crushing. Because of the small size and scope of the project and project design features, cumulative impacts to special status species are anticipated to be negligible or minor.

### **3.5. Rangeland Management and Livestock Grazing**

#### **3.5.1. Affected Environment**

Livestock grazing and production is one of the current and historically dominant land uses in Lander County. Most of these lands are managed by the BLM and are divided into grazing allotments used primarily for cattle and sheep grazing. The proposed maintenance and upgrade activities to the Mill Creek Campground and Shoshone OHV trail system take place within the Argenta and Carico Lake allotments. Allotments are generally grazed for a set period of time and may include year-round or seasonal grazing. In order to achieve healthy rangelands, livestock management practices often include rotating grazing through allotments, allotment pastures, or use areas based on the terms and conditions of the permit. Management of grazing allotments also normally includes the installation and maintenance of support facilities consisting of roads, allotment and pasture fences, gates, cattleguards, and corrals.

Prior to the Mill Fire in 2017, the Mill Creek Campground fence excluded livestock grazing within its perimeter. Unauthorized use by livestock has been reported within the campground since the permanent fence burned down during the wildfire. The Proposed Action not only includes plans to restore the permanent campground perimeter fence but also plans to create a hiking trail and OHV connector route. The hiking trail runs 2.4 miles through the Argenta allotment, and the OHV connector route runs 4.1 miles through the Argenta allotment and 5.6 miles through the Carico Lakes allotment.

#### **3.5.2. Environmental Consequences**

Potential impacts are determined by changes to the following:

- Authorized acres available for grazing
- Livestock behavior

### 3.5.2.1. *Proposed Action*

Overall, the proposed maintenance and upgrade activities would not contribute to a loss of acres available for grazing or loss of AUMs in the affected allotments. Despite this, direct impacts to rangeland management and livestock grazing resources from increased recreational use could include interference with livestock behavior for feeding, watering and distribution, vandalism to range improvements, and potential livestock injury and mortality from OHV collisions. Some beneficial impacts to livestock forage availability along the riparian areas surrounding Mill Creek would occur as a result of successful restoration treatments. Indirect impacts include rangeland resource degradation through the increased risk of human-caused wildfires, dispersal of noxious and invasive weeds, and erosion and runoff. While these impacts are possible, recreational use is not expected to increase substantially and would be confined to travel corridors. In addition, livestock are likely conditioned to human presence and OHV traffic from the permittees and other recreation uses throughout the allotments. In addition, the construction of the permanent perimeter fence will help to prevent unauthorized use from livestock grazing within the Mill Creek Campground.

### 3.5.2.2. *No Action Alternative*

Under the No Action Alternative, the effects of human presence and noise from OHV use on rangeland and livestock grazing would continue to occur under current conditions. In addition, livestock would likely continue grazing within the campground without reconstruction of the permanent perimeter fence.

### 3.5.2.3. *Cumulative Effects*

Past and present actions such as other recreational uses, wildfire, and access to mining rights contribute, in various levels of intensity, to impacts on the rangeland management and livestock grazing resource. There are no other reasonably foreseeable future projects in the area. Overall, the proposed maintenance and upgrade activities would be expected to have minor cumulative effects to the rangeland management and livestock grazing resource.

## **3.6. Recreation**

### **3.6.1. Affected Environment**

According to BLM estimates the Mill Creek Recreation Area receives 30,000 annual visitors (BLM 2021c). Recreation opportunities within the Project Area are representative of typical dispersed recreation use of BLM-administered lands, including motorized vehicle and OHV use, hiking, mountain biking, rockhounding, hunting, fishing, equestrian use, and many others. Prior to the Mill Fire in 2017, the Mill Creek Campground provided infrastructure and services for overnight campers; current overnight use within the area is categorized as dispersed camping due to the lack of infrastructure and facilities and is subject to a 14-consecutive-day limitation on camping within a 28-day period (BLM 2021d).

The Project Area is of particular interest to OHV-users due to its remote location, extensive available trails, and general aesthetic qualities. The BLM defines an OHV as any motorized vehicle that can be operated on land, water, or other natural terrain such as off of improved and regularly



maintained roads with hardened or gravel surfaces. These vehicles include: 4x4 vehicles, ATVs, motorcycles, and jeeps. OHV use is limited to existing roads and trails, and the creation of new trails is considered unauthorized. A survey and report conducted by the BLM and the National Off-Highway Vehicle Conservation Council assessed current trail conditions and use for the Shoshone OHV Trail System and found that the system offered excellent recreation opportunities, but overall use appeared to be low (RecConnect 2019). Low use may be due to insufficient signage and information, narrow trail widths, minimal available trail mileage and connector loops, and distance to nearby services.

### **3.6.2. Environmental Consequences**

This section discusses impacts to recreation per each alternative within the Project Area and surrounding lands with the potential to impact user experience. Potential impacts are determined by changes to the following:

- Access to available recreation opportunities
- Quality of user experience
- Availability of supporting infrastructure for outdoor recreation (e.g., trails, roads, campgrounds, signage)
- Amount of visitation to Mill Creek Campground and the Shoshone OHV Trail System

#### *3.6.2.1. Proposed Action*

Under the Proposed Action, the Mill Creek Campground would be upgraded and maintained, and the connector trail to the Shoshone OHV Trail System would be constructed. This action would serve to improve the recreational experience throughout the Project Area by connecting the Mill Creek Campground to the existing trail system while also providing supporting infrastructure for overnight users. OHV users would benefit through increased recreation opportunity, legal public access to existing trails, and increased safety while recreating due to easier access for emergency services and law enforcement in the case of an accident or if a user needs assistance.

The proposed connector trail would be authorized for multiple use and would increase opportunity and access for OHV users as well as hikers, mountain bikers, and trail runners. With the creation of the connector trail, some forms of non-motorized recreation could be impacted through disturbances caused by noise, dust, and aesthetic disruption, which could increase user conflicts and degrade the recreation experience for those users. However, a reduction in unauthorized trail creation and OHV use would also be expected with the creation of the connector trail, which would reduce current conflicts and impacts to the natural setting of the recreation area. The Proposed Action would result in beneficial impacts to the recreation resource by improving recreational opportunities, access, and quality of experience.

#### *3.6.2.2. No Action Alternative*

Under the No Action Alternative, outdoor recreation opportunities would remain limited by the lack of supporting infrastructure within the Mill Creek Recreation Area. Dispersed camping would continue throughout the area, but current trends of low visitation and overnight use would be expected to continue.

Public access to the Shoshone OHV Trail System via the Mill Creek Campground would remain difficult under this alternative. The Project Area would continue to be suitable for a variety of recreation activities, and it is likely that use would increase slightly, consistent with trends across the county and state. Use of the area would likely remain limited to day-use by locals due to a lack of sufficient overnight services, which would hinder overall use of the area. Under this alternative, the recreation resource would experience moderate impacts due to insufficient infrastructure, access, and reduced quality of experience. Conditions under this alternative would not align with established goals and objectives in the Shoshone-Eureka RMP.

### 3.6.2.3. Cumulative Effects

The 2017 Mill Fire resulted in impacts to the recreation resource in the Project Area, primarily through the loss of infrastructure at the Mill Creek Campground. Grazing is also a past and ongoing use of BLM-administered lands and may degrade the recreation experience for some users as well as present a safety hazard for OHV users, though conflict is typically minimal and infrequent. These uses, combined, have reduced recreation opportunity to a minor extent and degrade user experience.

Under the Proposed Action, the minor cumulative effects incurred by past, present, and reasonably foreseeable actions would be expected to be mitigated by overall improvements to the recreation resource. The Proposed Action would not be expected to contribute towards negative cumulative effects to the recreation resource.

## 3.7. Soils

### 3.7.1. Affected Environment

The Project Area is located within the Basin and Range physiographic province which is characterized by alternating mountain ranges and long arid valley bottoms, most of which are oriented roughly north-south. Surrounding hillslopes are composed primarily of silt and sandy loams with a mix of quartzite and volcanic colluvium and alluvium. Soil data obtained from the National Resource Conservation Service (NRCS) gridded soil survey geographic database<sup>2</sup> for Nevada indicate the following soil types are present in the Project Area, with gravelly loam and very cobbly loam present as the dominant types.

**Table 3. Soil Types in the Project Area**

Soil Type	Acres in Project Area	Percent of Project Area
Very cobbly loam	3.1	45.4%
Gravelly loam	2.3	34.2%
Gravelly very fine sandy loam	0.6	8.2%
Cobbly loam	0.3	4.4%
Very fine sandy loam	0.2	3.3%
Fine sandy loam	0.2	2.5%
Ashy fine sandy loam	0.1	2.0%
<b>Totals</b>	6.9	100%

<sup>2</sup> <https://www.nrcs.usda.gov/wps/portal/nrcs/main/nv/soils/surveys/>

### 3.7.2. Environmental Consequences

Potential impacts are determined by changes to the following:

- Soil compaction
- Soil erosion
- Sedimentation with the potential to affect water resources

#### 3.7.2.1. *Proposed Action*

The construction of the proposed OHV connector trail, pedestrian interpretative trail, and additional tent pad sites within the campground would result in minor permanent soil compaction within those concentrated areas (approximately 6.4 acres in total). Multiple use activities (hiking, OHV use) on portions of the connector trail located on steeper slopes or in wet areas could cause minor erosion, compaction, and rutting, which may affect the surrounding vegetation in localized areas. Increased use on existing routes within the Shoshone OHV Trail System due to the connector trail may increase the maintenance needs on these routes. Maintenance on existing trails could consist of increased blading and grading to prevent erosion and impacts to vegetation on portions of the trail system.

The installation of a culvert or geogrid at the existing Mill Creek OHV crossing would mitigate existing bank erosion that contributes sediment to the creek while also reducing existing soil compaction and rutting that is occurring at the crossing. The installation of the culvert or geogrid and two pedestrian bridges may result in minor, temporary increases in sediment and therefore impacts to water quality. BMPs would be used to minimize this impact. Riparian soils immediately adjacent to Mill Creek are at risk from rutting and compaction as a result of increased motorized travel through wet areas, although the clearly defined and improved creek crossing should reduce impacts from unauthorized OHV use occurring elsewhere.

The two new pedestrian bridges would be installed at the same locations as the two original footbridges lost during the Mill Fire, causing limited areas of new soil disturbance. The bridges will be prefabricated or constructed on site in areas of the campground that are already disturbed due to ongoing recreational use. BMPs would be used to minimize sedimentation to Mill Creek during the placement of the bridges.

Restoration plantings that would occur within the campground would reduce areas of bare soil prone to erosion, compaction, and spread of invasive and non-native plant species, resulting in a long-term beneficial impact.

#### 3.7.2.2. *No Action Alternative*

Existing impacts to soils from the current levels of recreation within the Project Area would continue under the No Action Alternative. Without trail maintenance and vegetation restoration within the campground, currently disturbed areas may endure increased wind and soil erosion, compaction, and spread of invasive and non-native plant species.

### 3.7.2.3. *Cumulative Effects*

Past, present, and future actions such as livestock grazing, other recreational uses, access to mineral rights, and wildfire all incrementally contribute to impacts on soils by means of compaction, rutting, and erosion. The Proposed Action would result in minor adverse and beneficial impacts in localized areas within the Project Area and permanent disturbance on designated trails. The OHV connector route would likely reduce OHV use in unauthorized locations resulting in a positive impact to soils in the area.

## **3.8. Socioeconomics**

### **3.8.1. Affected Environment**

A BLM Socioeconomic Profile (SEP) was generated for Lander County on December 15, 2021, providing an overview of socioeconomic conditions using indicators relevant to public land management (BLM 2021a). All data reported within this section is current as of 2019 as reported within the SEP, unless stated otherwise.

The Project Area resides entirely within Lander County, which comprises two U.S. Census Bureau's designated Census Tracts: 3.01 and 3.02. Lander County encompasses a sizeable spatial extent beyond the boundaries of the Project Area, and corresponding data may not be directly representative, though it is expected to align with general patterns regarding relevant socioeconomic indicators as they relate to the Project Area. The nearest town to the Project Area is Battle Mountain, Nevada, with a population of 3,698, approximately a 30-minute drive from Mill Creek Campground.

As of 2019, Lander County's population was 5,532<sup>3</sup>. Between 2000 and 2019, the population decreased by 3%, employment increased by 45.3%, and per capita income increased by 61.4%. Current per capita income is \$69,293 and 4,133 jobs are reported within the county. Compared to the state of Nevada, Lander County's population is lower than the average, employment has similar rates of increase, and per capita income has substantially increased more than the average. The population decrease is largely attributed to net migration out of the county rather than natural change (i.e., births and deaths). Median age within the county is 37.4 and has increased by 0.6 years, consistent with trends across the state.

Major industries within the county include mining, government, ranching, and service-related jobs such as retail trade, accommodation and food services, and transportation. A major gold and copper mine called the Phoenix Mine is located approximately 15 miles northwest of the Project Area and supplies a sizeable proportion of local employment and wages. Since 2001, jobs within the mining and service industries have increased substantially, whereas government, information, and social services have decreased (Table 4). Of 3,546 wage and salary jobs, the majority are represented by non-service and/or private industries, including natural resources and mining, with service-related industries and government comprising a smaller proportion of total wage and salary employment. Overall average annual wages are higher than Nevada's annual average at \$82,498 versus \$51,426;

---

<sup>3</sup> Population estimates vary between 5,532 as reported by the Bureau of Economic Analysis and 5,596 and 5,643 as reported by the American Community Survey Office 5-year estimates (2015-2019)

the majority of which is attributable to higher-paying jobs in the mining and natural resources industries. Non-labor earnings make up a smaller proportion of total personal income (27%) and have increased slightly since 2000. A high occupancy of housing units (82.7%), minimal non-labor income (21.8%), and short mean commuting times (22 minutes), indicate that the majority of residents within the county are year-round residents that live and work within county boundaries.

Of the 3,532,482 acres in Lander County, the majority are categorized as federal lands belonging to the BLM (75.4%), followed by 15.2% private land ownership. Small amounts of U.S. Forest Service, other federal, state, city, county, and tribal lands make up the remaining 0.10%. Land ownership patterns are consistent with the state of Nevada as a whole. The high proportion of federal to private lands lends to the importance of public lands to the county and to the communities surrounding the Project Area. Public lands serve as a resource to the community, providing recreation opportunities that draw tourists to the area and benefit residents.

Between 2001 and 2019, employment within the arts, entertainment, and recreation industry increased by 81.3%, and other industries supporting recreationists also increased, such as accommodation and food services (34.9%). These patterns indicate that interest and participation in outdoor recreation is increasing within the county.

**Table 4. Jobs and Industry within Lander County, Nevada<sup>4</sup>**

Industry Category	Lander County, Nevada	Total number of jobs (change from 2001-2019)
<b>Total number of jobs</b>	<b>4,133</b>	<b>1,141</b>
<b>Non-services related</b>	<b>~2,320</b>	<b>~1,023</b>
Farm	166	-8
Forestry, fishing, & agricultural services	NA	NA
Mining (including fossil fuels)	2,154	1,031
Construction	NA	NA
Manufacturing	NA	NA
<b>Services related</b>	<b>~1,255</b>	<b>~366</b>
Utilities	NA	NA
Wholesale trade	NA	NA
Retail trade	300	-29
Transportation and warehousing	144	55
Information	1	~ -5
Finance and insurance	~93	~51
Real estate and rental and leasing	~119	~75
Professional and technical services	29	~5
Management of companies	0	0
Administrative and waste services	53	~18
Educational services	10	4
Health care and social assistance	41	-11
Arts, entertainment, and recreation	~80	~65
Accommodation and food services	~258	~90
Other services, except public admin.	127	48
Government	570	-30
Residual	-12	NA

<sup>4</sup> ~ Represents data values that were not disclosed by place of work; NA represents data that was not available

### 3.8.2. Environmental Consequences

Section 102 of NEPA requires federal agencies to ensure the use of natural and social sciences in planning and decision making. Social conditions refer to the human population and its characteristics and interests as they relate to the use of public lands. Economic conditions refer to the employment, income, and economic base of a given community. This section analyzes potential impacts to the socioeconomics within the Project Area and surrounding communities as a result of the Proposed Action and No Action Alternative. Impacts to the socioeconomics resource are discussed in terms of:

- Economic benefits from improved recreation opportunities throughout the Project Area
- Increased utilization of service-based industries in Lander County

#### 3.8.2.1. *Proposed Action*

Under the Proposed Action, maintenance and improvement of the Mill Creek Campground and Shoshone OHV Trail System would occur, improving the recreational experience within the Project Area. Proposed maintenance and upgrades to the Mill Creek Campground may facilitate increased visitation and overnight use within the Project Area, which could stimulate additional economic activity in the surrounding area from recreationists purchasing fuel and other supplies prior to overnight camping.

Under the Proposed Action, increased outdoor recreation activity and visitation within the Project Area is expected to result in a minor positive socioeconomic impact to the county.

#### 3.8.2.2. *No Action Alternative*

Under the No Action Alternative, no maintenance or upgrades to the Mill Creek Campground would occur, and the connector trail would not be constructed. Dispersed camping would continue to occur at minimal levels. Most outdoor recreation would likely be constrained to local recreationists, which contribute less overall to the local economy than tourists, limiting potential economic stimulus from outdoor recreation within the Project Area. Under this alternative, minimal adverse socioeconomic impacts would be expected, and the current socioeconomic state of the Project Area and surrounding communities would be subject to overall current conditions and trends.

#### 3.8.2.3. *Cumulative Effects*

Past and present land uses have had both direct and indirect effects upon socioeconomics of the county, primarily through impacts to employment and industry and associated tax revenue. Under the Proposed Action, minor increases in outdoor recreation and visitation to the Project Area would be expected to contribute a minimal beneficial cumulative effect to local socioeconomic conditions.

### **3.9. Environmental Justice**

#### **3.9.1. Affected Environment**

Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations – was issued by President William J. Clinton in 1994. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. Evaluating the potential Environmental Justice effects of projects requires specific identification of minority populations when either: 1) a minority population exceeds 50 percent of the population of the affected area; or 2) a minority population represents a meaningfully greater increment of the affected population than of the population of some other appropriate geographic unit, as a whole. For the purposes of the analysis, ten or more percentage points above the reference population is considered to be a meaningfully greater increment. In addition, it is necessary to evaluate whether or not any concentrated populations of Native Americans are present.

There are low income, minority, and Native American populations residing in Lander County. In some block groups within the area analyzed, the percentage of the population classified as low income is more than ten percentage points higher than that of the State of Nevada.

#### **3.9.2. Environmental Consequences**

Impacts are discussed in terms of:

- Access to available recreation opportunities
- Quality of user experience

##### *3.9.2.1. Proposed Action*

Infrastructure improvements at Mill Creek Campground are expected to have a beneficial impact on minority and low-income populations residing in the area because camping and hiking are cost-effective ways to participate in and enjoy outdoor recreational activities on public lands. It is anticipated that there would be no disproportionate adverse impacts to Environmental Justice populations resulting from the Proposed Action.

##### *3.9.2.2. No Action Alternative*

If the No Action Alternative is selected, it is possible that there would be minor disproportionate adverse impacts to Environmental Justice populations since camping and hiking are cost-effective ways to participate in and enjoy outdoor recreational activities on public lands.

##### *3.9.2.3. Cumulative Effects*

Cumulatively, the Project, in addition with other past, present, and reasonably foreseeable actions would not contribute substantial impacts to environmental justice populations.

### **3.10. Vegetation**

#### **3.10.1. Affected Environment**

The Project Area is located within Major Land Resource Area (MLRA) 24 (Humboldt Area) where the average annual precipitation is 6–12 inches with a maximum of 40 inches at the highest elevations. Precipitation occurs mainly as snow in winter with occasional rainfall events occurring in the form of high-intensity, convective thunderstorms during spring and autumn. Summers are dry and average annual temperature is 38 to 53 degrees F (3 to 12 degrees C). The freeze-free period averages 135 days and ranges from 100 to 175 days, decreasing in length with increasing elevation (Stringham et al. 2017).

The Project Area is mapped by the NRCS to be dominated by Wyoming sagebrush (*Artemisia tridentata* spp. *wyomingensis*) and shadscale (*Atriplex confertifolia*) vegetation communities in the uplands with Thurber's needlegrass (*Achnatherum thurberianum*) and Indian ricegrass (*Achnatherum hymenoides*) as dominant perennial bunchgrasses that provide key site stabilization. The Project Area also includes a small riparian area surrounding Mill Creek that is dominated by a cottonwood-willow (*Populus-Salix*) vegetation community. While emergency stabilization measures post-wildfire included reseeding, native vegetation within the campground was incinerated during the 2017 wildfire and has not regenerated to pre-fire conditions.

#### **3.10.2. Environmental Consequences**

Potential impacts are determined by changes to the following:

- Short term and permanent changes to vegetation

##### *3.10.2.1. Proposed Action*

Permanent impacts to upland and riparian vegetation from the proposed maintenance and upgrade activities would include mortality of individual plants in localized areas that are removed or damaged during construction of the new campground pads, hiking trail, and OHV connector trail. Increased recreational use could also have direct impacts to individual plants through crushing and trampling. Indirect impacts to vegetation from increased recreational use could include spread of invasive and noxious weeds, increased risk of human-caused fire, site degradation through soil erosion and compaction, and change in vegetation composition. Some of these impacts would be mitigated in localized areas through successful revegetation treatments appropriate for the site, including seeding and planting within the campground and along stream banks located within the campground perimeter. Restoration activities within the campground would have long-term beneficial impacts to upland and riparian vegetation. Seed mixes and mulches used for revegetation would be certified weed free. All revegetation treatments would be monitored to verify that they are meeting expectations and to confirm that no additional treatments are needed.

##### *3.10.2.2. No Action Alternative*

Existing direct and indirect impacts to vegetation from the current levels of recreation within the Project Area would continue under the No Action Alternative. Impacts to vegetation resources observed under the Proposed Action would not occur, including long-term and short-term impacts



associated with direct removal of vegetation for campground infrastructure and trail construction. Without revegetation treatment, currently disturbed areas within the Project Area may endure increased wind and soil erosion and spread of invasive and non-native plant species.

### 3.10.2.3. *Cumulative Effects*

Past, present, and future actions such as livestock grazing, other recreational uses, wildfire, and access to mineral rights, all contribute, in various levels of intensity, to impacts on native vegetation by means of damage and mortality. There are no other reasonably foreseeable future projects in the area. The Proposed Action would result in an increase in damage and mortality to vegetation from maintenance and upgrade activities in localized areas and could result in minor ongoing disturbance to vegetation from increased recreational use. Long-term impacts to the overall vegetation communities throughout the project area are not expected.

## 3.11. **Noxious and Invasive Weeds**

### 3.11.1. **Affected Environment**

State of Nevada identifies noxious weeds in the Nevada Revised Statutes and defines them as “any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate” (NRS 555.005<sup>5</sup>). While invasive weeds are not officially listed by the State of Nevada, these plants behave similarly to noxious weeds and remain a concern for land managers. Both noxious and invasive weeds thrive in recently disturbed landscapes with significant bare ground due to the lack of competition and availability of resources.

During 2020, tamarisk (*Tamarix* sp.), Russian knapweed (*Acroptilon repens*), whitetop (*Cardaria draba*), and various thistle species were observed throughout the Project Area (O'Connell 2020). Large concentrations of thistle, Russian knapweed, and whitetop were also seen in the campground area and the area upstream of the campground near the BLM and private land boundary. Noxious and invasive weed encroachment is of particular concern for this project due to the recent wildfire. In order to mitigate soil erosion and noxious and invasive weed encroachment, emergency stabilization measures post-wildfire included reseeding of native vegetation. Despite these measures, more work is needed to prevent further noxious and invasive weed recruitment and encroachment.

### 3.11.2. **Environmental Consequences**

Potential impacts are determined by changes to the following:

- Potential for encroachment and spread of noxious and invasive weeds

#### 3.11.2.1. *Proposed Action*

Ground disturbance caused by the proposed maintenance and upgrade activities and increased recreational use could serve as a vector for dispersal and encroachment of noxious and invasive weeds. Potential indirect impacts from weed encroachment include reducing site biodiversity, altering hydrologic conditions and soil characteristics, altering fire intensity and frequency, and

---

<sup>5</sup> <https://www.leg.state.nv.us/nrs/nrs-555.html>

modifying plant community composition and successional pathways. Some of these impacts would be mitigated in localized areas through the implementation of project design features and successful revegetation treatments of native vegetation seeding and planting within the campground and along stream banks located within the campground perimeter. Seed mixes and mulches used for revegetation would be certified weed free.

All revegetation treatments would be monitored to verify that they are meeting expectations and to confirm that no additional treatments are needed. In addition, weed management activities would be scheduled to maximize the effectiveness of control efforts on reclaimed areas. Construction activities would include BMPs that require washing heavy equipment prior to entering the Project Area and avoiding areas of known noxious and invasive weeds during periods when spread by vehicles is at risk.

#### *3.11.2.2. No Action Alternative*

Disturbance caused by current levels of recreational activity and recent wildfire would continue to serve as a vector for noxious and invasive weed dispersal and encroachment under the No Action Alternative.

#### *3.11.2.3. Cumulative Effects*

Past, present, and future actions such as livestock grazing, other recreational uses, wildfire, and access to mineral rights, all contribute to the dispersal and encroachment of noxious and invasive weeds. With the implementation of the project design features and successful revegetation treatments, the Proposed Action is not expected to contribute to current noxious and invasive weed populations in the Project Area.

### **3.12. Water Resources**

#### **3.12.1. Affected Environment**

Mill Creek is the only perennial stream within the Project Area. Mill Creek originates upstream and to the east in the Shoshone Range and is predominantly snowmelt and groundwater fed. This channel begins as a steep headwater stream that changes in morphology as it enters the valley floor. Where the channel reaches the valley floor it enters a depositional zone and is characterized by lower stream gradient and higher sinuosity.

The active channel flows at approximately 0.5 to 1.0 cubic feet per second and ranges in width from 3 to 7 feet, with riffle depths from 0.5 to 0.75 feet, and pool depths that range from 0.75 to 1.5 feet (O'Connell 2020). Channel slope is moderate, sinuosity low to moderate, and width to depth and entrenchment ratios range from low to high depending on the level of confinement in a particular reach. Substrate and streambank material are composed of locally derived quartzite and volcanic alluvium and colluvium from the surrounding terraces and mountains to the east. Substrate material sizes range from silt to gravel and cobble with the occasional boulder while streambank material is relatively fine overall and is a silty loam with some sand, gravel, and an occasional cobble present.

The riparian corridor in the Project Area consists of cottonwood, willow, horsetail, and various

sedge and rush species within and adjacent to the active channel area or phreatic zone (saturated). Riparian vegetation ranges from healthy to absent with areas of active recruitment and areas of even age class with upland vegetation encroachment. Where present, riparian vegetation is adequate to protect streambanks through stabilization and provide canopy cover to maintain healthy stream temperatures and habitat for aquatic species. In areas lacking canopy cover, stream temperatures are likely elevated and algal growth is occurring (O'Connell 2020). Water quality degradation is the result of elevated stream temperatures associated with canopy loss and resulting lowered dissolved oxygen and algal blooms. Other contributors could be increases in nutrients from runoff and fecal coliform from upstream grazing activities.

Outside of the riparian corridor, wetlands were not identified during hydrology surveys on the connector route (O'Connell 2020). National Wetlands Inventory data was also evaluated, and no areas were identified.

### **3.12.2. Environmental Consequences**

Potential impacts to water quality are determined by changes to the following:

- Soil erosion and sedimentation
- Canopy cover and stabilizing streambank vegetation

#### *3.12.2.1. Proposed Action*

The installation of a culvert or geogrid at the existing Mill Creek OHV crossing would decrease turbidity caused by OHVs currently crossing the creek. The improved crossing would also mitigate streambank erosion, resulting in a long-term beneficial impact to water quality. The installation of the culvert or geogrid and two pedestrian bridges may result in minor, temporary increases in sediment and therefore impacts to water quality. BMPs would be used to minimize this impact.

Streamside restoration plantings would increase canopy cover, resulting in a decrease in water temperature and an improvement in water quality. Restoration plantings would also provide stabilization in areas with bare soil that are prone to erosion, and this would result in a reduction in sedimentation that would provide a long-term beneficial effect.

Multiple use activities on portions of the connector trail located in seasonally wet areas could cause minor erosion, compaction, and rutting although water quality impacts are not anticipated.

#### *3.12.2.2. No Action Alternative*

Existing impacts to water resources from the current levels of recreation within the Project Area would continue under the No Action Alternative. Without trail maintenance and vegetation restoration within the campground, currently disturbed areas may endure increased soil erosion, loss of important canopy cover and streambank stabilizing vegetation, increased water temperatures, and ongoing impacts to water quality.

#### *3.12.2.3. Cumulative Effects*

Past, present, and future actions such as livestock grazing, other recreational uses, access to mineral rights, and wildfire all incrementally contribute to impacts on water resources. The Proposed

Action would result in minor, temporary impacts to water quality during project construction with a long-term beneficial effect due to increased native riparian vegetation and the improved creek crossing.

### **3.13. Wild Horses and Burros**

#### **3.13.1. Affected Environment**

The Project Area lies within the South Shoshone Herd Management Area (HMA) for wild horses. This HMA consists of a total of 133,093 acres, 132,401 of which are under BLM ownership, and 692 under private or other public ownership (Figure 7). The South Shoshone HMA spans an approximate distance of 28 miles long and 14 miles wide. The current Appropriate Management Level for the HMA is between 60 and 100 wild horses. The most recent estimate for number of horses is 1,180 wild horses. Horses in the HMA are suspected to move between the two neighboring HMAs, Bald Mountain and Callaghan. The proposed connector route passes through approximately 5.6 miles of the HMA. The Mill Creek Campground is not located within the South Shoshone HMA.

#### **3.13.2. Environmental Consequences**

Potential impacts are determined by the following:

- Short term and permanent changes to habitat
- Short term and permanent changes to behavior and movement

##### *3.13.2.1. Proposed Action*

Wild horses may be temporarily displaced during project construction and increased OHV use on the proposed connector trail. Horses would likely return to usual activities after construction is complete and once users pass. The HMA potentially affected is vast and open and the project would have negligible or minor impacts to wild horses. Project design features, including instructing construction workers not to approach wild horses would further minimize impacts.

##### *3.13.2.2. No Action Alternative*

Under the No Action Alternative, the campground would not be enclosed with permanent fencing, and the connector route would not be created. Any existing habitat disturbance and OHV usage trends within the Project Area would continue under the No Action Alternative. Wild horses and burros that use habitat along existing routes in the Project Area would continue to use habitat at current levels. Changes in individual animal behavior and movements would continue as currently trending under current conditions.

##### *3.13.2.3. Cumulative Effects*

Past and present actions such as livestock grazing, wild horse gathers, other recreational uses, and access to mineral rights all contribute incrementally to the increased risk of impacts to wild horses and burros by means of displacement. The Proposed Action would result in an incremental increase in noise and human presence from motorized use along the connector trail and may result in negligible to minor temporary or short-term displacement of wild horses and burros.

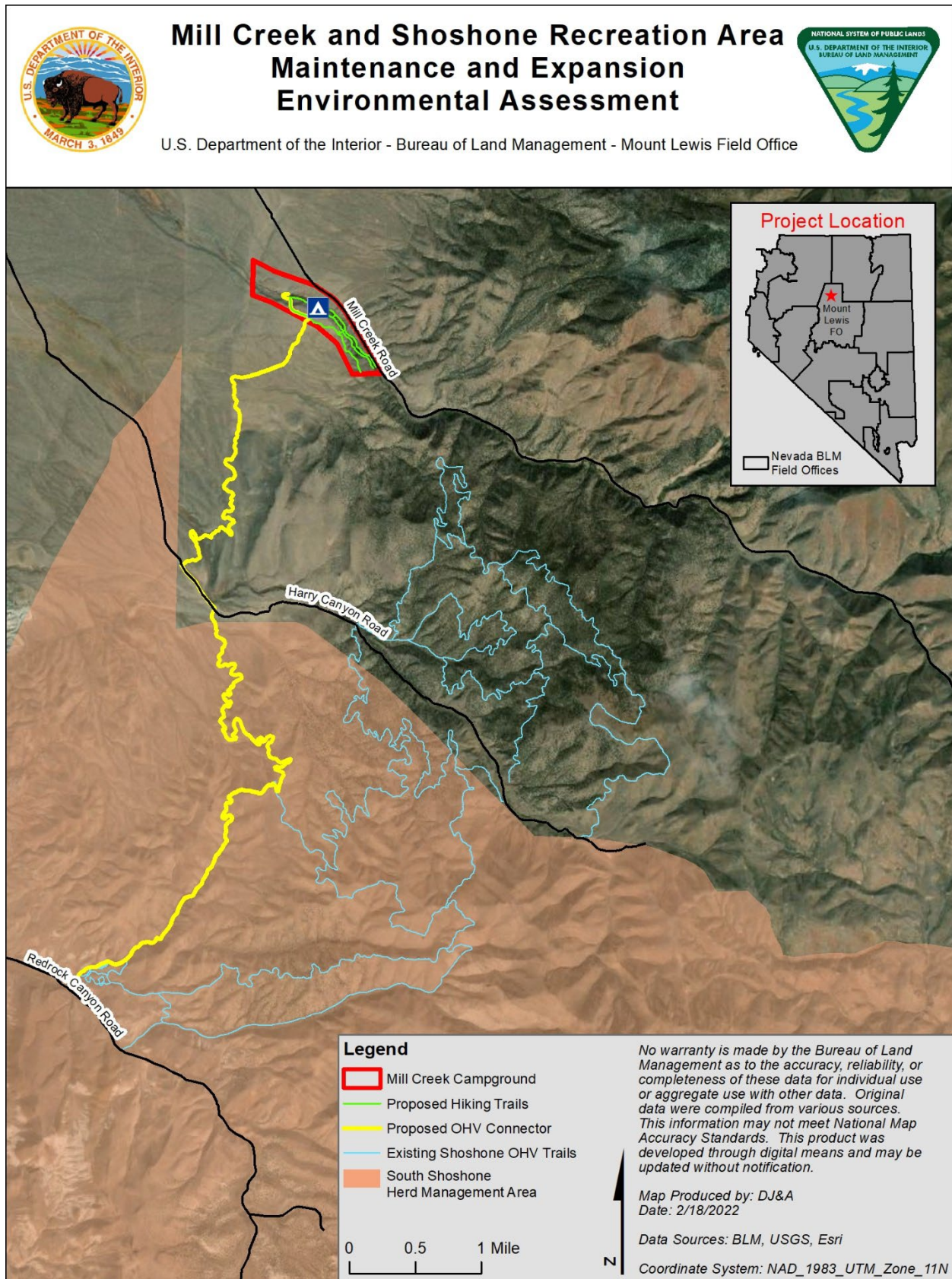


Figure 7. South Shoshone Wild Horse and Burro Herd Management Area in the Project Area

## 4. List of Preparers and Reviewers

### BLM

Cassie Ault	Lands and Realty
Robert Burdick	Livestock and Range, Soils, Vegetation, Noxious and Invasive Weeds
Andrew Monastero	Cultural Resources and SHPO Consultation
Justin Ferris	Hydrology
Wilfred Nabahe	Tribal Consultation
Rachelle Peppers	Wildlife
Shawna Richardson	Wild Horse and Burros
Kenneth Shedden	Recreation, GIS Data Management
Robert Smith	Planning and Environmental Coordinator, EA Manager
Julie Suhr Pierce	Environmental Justice

### DJ&A, P.C.

Tyler Andrews	Wildlife and Fisheries
Travis Benton	GIS Data Management and Figure Production
Allison Hendryx	Recreation and Socioeconomics
Connie McCune	Lands and Realty, Environmental Justice, Soils, Water Resources
Kelsey O'Neill	Vegetation, Rangeland Management and Grazing, Noxious Weeds



## 5. References

- BLM. 1987. *SHOSHONE - EUREKA Resource ~ Resource Management Plan Amendment Record of Decision*.
- BLM. 2008. *National Environmental Policy Act Handbook H-1790-1*.
- BLM. 2015. *Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment*.
- BLM. 2016. Herd Area and Herd Management Area Statistics.
- BLM. 2017. *Nevada Sensitive and Status Species List*.
- BLM. 2021a. BLM Socioeconomic Profile: Lander County, NV.
- BLM. 2021b. Mill Creek Campground Expansion Project - Wildlife Baseline Report.
- BLM. 2021c. Mill Creek Recreation Area web site. <https://www.blm.gov/visit/mill-creek-recreation-area>.
- BLM. 2021d. Nevada recreation activities. <https://www.blm.gov/programs/recreation/recreation-activities/nevada>.
- Ferris, Robert M., and Michael J. Kutilek. 1989. Responses of black-tailed deer to off-highway vehicles in Hollister Hills State Vehicular Recreation Area.
- Gavin, S.D., and Petr E. Komers. 2007. *Do pronghorn (Antilocapra americana) perceive roads as a predation risk?*
- Havlick, David G. 2002. *No Place Distant: Roads and Motorized Recreation on America's Public Lands*: Island Press.
- NDOW. 2017. Occupied Pronghorn Distribution.
- Nevada Department of Wildlife (NDOW). 2017. Occupied Mule Deer Distribution.
- O'Connell, Jeff. 2020. Mill Creek Restoration Assessment - 2020 Field Review.
- RecConnect. 2019. *Shoshone SxS Assessment & Travel Plan February 2019 Revision*.
- Stringham, Tamzen K., Patti Novak-Echenique, Amanda Wartgow, and Devon Snyder. 2017. *Final Report for USDA Ecological Site Description State-and-Transition Models for Major Land Resource Area 24*.
- USFWS. 2021. IPaC Resource List.
- USGS. 2015. BLM NVCA ARMPA GRSG Habitat 2015.



## Appendix A: Migratory Bird Species Identified in the Project Area

Species (Common Name)	Species (Common Name)
American Kestrel	Lark Sparrow
American Robin	Lazuli Bunting
Ash-throated Flycatcher	Loggerhead Shrike
Bewick's Wren	Mountain Bluebird
Black-billed Magpie	Mountain Chickadee
Black-headed Grosbeak	Mourning Dove
Black-throated Gray Warbler	Northern Flicker
Black-throated Sparrow	Northern Harrier
Blue-gray Gnatcatcher	Northern Mockingbird
Brewer's Blackbird	Pine Siskin
Brewer's Sparrow	Pinyon Jay
Broad-tailed Hummingbird	Plumbeous Vireo
Brown-headed Cowbird	Prairie Falcon
Bushtit	Red-tailed Hawk
California Quail	Rock Wren
Canyon Wren	Sage Sparrow
Cassin's Finch	Sage Thrasher
Chipping Sparrow	Savannah Sparrow
Chukar	Short-eared Owl
Common Nighthawk	Spotted Towhee
Common Raven	Say's Phoebe
Common Poorwill	Short-eared Owl
Dark-eyed Junco	Spotted Towhee
Downy Woodpecker	Swainson's Hawk
Dusky Flycatcher	Turkey Vulture
Eurasian Collared-Dove	Vesper Sparrow
Ferruginous Hawk	Warbling Vireo
Golden Eagle	Western burrowing owl
Gray Flycatcher	Western Kingbird
Gray Vireo	Western Meadowlark
Green-tailed Towhee	Western Scrub-Jay
Hairy Woodpecker	Western Tanager
Horned Lark	Western Wood-Pewee
House Finch	White-crowned Sparrow
Juniper Titmouse	Yellow Warbler

## **Appendix B: Special Status Species Analyzed**

CommonName	ScientificName	Status <sup>1</sup>	Habitat Descriptions	Potential to Occur (Y/N)	Rationale for Occurrence/Non-Occurrence	Description of Use
<b>Birds</b>						
Northern goshawk	<i>Accipiter gentilis</i>	BLM NV State	Nests in a wide variety of forest types including deciduous, coniferous, and mixed forests. Typically nests in mature or old-growth forests (usually aspen), and generally selects larger tracts of forest over smaller tracts. In Nevada, forages in open sagebrush adjacent to riparian aspen stands (NatureServe, 2017,GBBO, 2010). Habitats used in Nevada are aspen, coniferous forest, piñon-juniper, and spring communities. GBBO, 2010	Y	Suitable foraging habitat exists.	Foraging
Golden eagle	<i>Aquila chrysaetos</i>	BLM	Generally, inhabit open and semi-open country such as prairies, sagebrush, arctic and alpine tundra, savannah or sparse woodland, and barren areas, especially in hilly or mountainous regions, in areas with sufficient mammalian prey base and near suitable nesting sites. In Nevada, the only habitats routinely avoided are forests, large agricultural areas, and urban areas. Nests most often on rock ledges of cliffs but sometimes in large trees, on steep hillsides, or on the ground (NatureServe, 2017).	Y	Suitable foraging habitat exists and animals observed.	Foraging
Western burrowing owl	<i>Athene cunicularia</i>	BLM	Habitat typified by short vegetation and presence of fresh small mammal burrows. Occur in open grasslands, especially prairie, plains, and savannas, sometimes in open areas such as vacant lots near human habitation. Nests and roosts in abandoned burrows dug by mammals. Habitats used in Nevada are sagebrush, salt desert scrub, Mojave scrub, and Joshua tree communities (GBBO, 2010).	Y	Suitable habitat exists and animals observed.	Foraging, breeding
Ferruginous hawk	<i>Buteo regalis</i>	BLM	In Nevada, prefers to breed in rolling sagebrush near a piñon- juniper woodland interface (NatureServe, 2017). Habitats used in Nevada are sagebrush, piñon- juniper, and salt desert scrub (GBBO, 2010).	Y	Suitable habitat exists and animals observed.	Foraging, breeding
Swainson's hawk	<i>Buteo swainsoni</i>	BLM	In the Great Basin, occupy juniper- sagebrush communities typical to the area and often use juniper trees for nesting (WAPT 2013; NatureServe, 2017). Habitats used within Nevada are Great Basin and Mojave lowland riparian areas, agricultural landscapes, sagebrush shrublands, and wet meadows (GBBO, 2010).	Y	Suitable habitat exists and animals observed.	Foraging, breeding

Greater sage-grouse	<i>Centrocercus urophasianus</i>	BLM	Occupies foothills, plains, and mountain slopes where sagebrush is present often with a mixture of sagebrush, meadows, and aspen in close proximity. Leks are located on relatively open sites surrounded by sagebrush or in areas where sagebrush density is low, such as exposed ridges, knolls or grassy swales. Nests in thick cover in sagebrush habitat, beneath sagebrush or other shrubs. Both a dense sagebrush overstory and an herbaceous understory of grasses are important to provide shade and security, and both new herbaceous growth and residual cover are important in the understory. Tall grass cover is critical for concealment and a warmer microclimate (NatureServe, 2017).	Y	Suitable habitat exists and animals observed. Project area is within USGS “General” and “Other” Greater sage-grouse habitat.	Foraging, breeding
Snowy plover	<i>Charadrius alexandrinus</i>	BLM	Occupies beaches, dry mud or salt flats, sandy shores of rivers, lakes, and ponds. Nests on the ground in broad open beaches or salt or dry mud flats where vegetation is sparse or absent (small clumps of vegetation are used for cover by chicks). Nests beside or under objects or in the open (NatureServe, 2017).	N	No suitable habitat present.	N/A
Lewis' woodpecker	<i>Melanerpes lewis</i>	BLM	Breeds in open forests and woodlands, often logged or burned, including oak trees and coniferous forests (primarily in ponderosa pine trees, riparian woodlands and orchards, and less commonly in piñon-juniper woodlands). Distribution closely associated with open ponderosa pine forests in western North America and is strongly associated with fire-maintained old-growth ponderosa pine.	N	No suitable habitat present.	N/A
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	N/A FE, BLM, State Endangered	Occurs in riparian and wetland thickets, generally of willow, tamarisk, or both, sometimes boxelder or Russian olive. Typically nests in trees where the plant growth is the densest, where trees and shrubs have vegetation near ground level, and where there is a low-density canopy (NatureServe, 2017).	N	No suitable habitat present. USFWS IPaC results show no potential of occurrence.	N/A

Peregrine falcon	<i>Falco peregrinus</i>	BLM, State Endangered	Habitats used in Nevada include cliffs, Mojave lowland riparian, Mojave scrub, and marshes (GBBO, 2010). When not breeding, occurs in areas where prey concentrate, including farmlands, marshes, lakeshores, river mouths, tidal flats, dunes and beaches, broad river valleys cities, and airports. Ideal locations include undisturbed areas with a wide view, near water, and close to plentiful prey (NatureServe, 2017).	N	No suitable habitat present.	N/A
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	BLM	Occupy piñon-juniper woodlands, less frequently in pine woodlands. In non-breeding season, also occurs in scrub oak and sagebrush. Nests in shrubs or trees (e.g., pine, oak, or juniper) (NatureServe, 2014).	Y	Suitable habitat exists and animals observed.	Foraging, breeding
Bald eagle	<i>Haliaeetus leucocephalus</i>	BLM; State Endangered	Habitats used in Nevada include open water, Great Basin and Mojave lowland riparian areas, coniferous forests, and agricultural landscapes. Nests in trees with close proximity to lakes, rivers, or other water bodies, usually less than one mile (GBBO, 2010).	N	No suitable habitat present.	N/A
Loggerhead shrike	<i>Lanius ludovicianus</i>	BLM, State Sensitive	Breeds in open country with scattered trees and shrubs, savanna, desert scrub, and, occasionally, open woodlands. Often perch on poles, wires, or fence posts. Suitable hunting perches are important features of the habitat. Nests in shrubs or small trees (NatureServe, 2017).	Y	Suitable habitat exists and animals observed.	Foraging, breeding
Black rosy-finch	<i>Leucosticte atrata</i>	BLM	Barren, rocky or grassy areas and cliffs among glaciers or beyond timberline. In migration and winter, also in open situations, fields, cultivated lands, brushy areas, and around human habitation. May roost in mine shafts or similar protected sites. Nests usually in rock crevices or holes in cliffs above snow fields.	N	No suitable habitat present.	N/A
Sage thrasher	<i>Oreoscoptes montanus</i>	BLM, State Sensitive	In the northern Great Basin, breeds and forages in tall sagebrush- bunchgrass, juniper-sagebrush-bunchgrass, mountain mahogany-shrub, and aspen-sagebrush-bunchgrass communities. Habitats used in Nevada includes sagebrush, montane shrubland, and salt desert scrub (GBBO, 2010).	Y	Suitable habitat exists and animals observed.	Foraging, breeding



Brewer's sparrow	<i>Spizella breweri</i>	BLM, State Sensitive	Breeding range is strongly associated with sagebrush over most of the range, and breeds in areas with scattered shrubs and short grasses. Prefers areas dominated by shrubs rather than grasses. Nests low in sagebrush (preferred), other shrubs, or cacti (Poole 2005; NatureServe, 2017).	Y	Suitable habitat exists and animals observed.	Foraging, breeding
<b>Mammals</b>						
Pallid bat	<i>Antrozous pallidus</i>	BLM	Arid deserts and grasslands, often near rocky outcrops and water. Less abundant in evergreen and mixed conifer woodlands. Usually roosts in rock crevices or buildings, less often in caves, tree hollows and mines. Prefers narrow crevices in caves as hibernation sites (NatureServe, 2017).	N	No suitable habitat present.	N/A
Pygmy rabbit	<i>Brachylagus idahoensis</i>	BLM	Generally occurs in dense stands of big sagebrush growing in deep loose soils in broad valley floors, drainage bottoms, alluvial fans or other areas with friable soils that can be associated with rabbitbrush/sagebrush vegetation (Ulmschneider 2008). Highly dependent on sagebrush for food and shelter throughout the year. Digs burrows. Occasionally uses burrows abandoned by other species and may occur in areas of shallower or more compact soils if such sites support sufficient shrub cover (NatureServe, 2017).	Y	Suitable habitat exists and animal sign observed.	Foraging, breeding
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BLM; State Sensitive	Commonly occur in mesic habitats characterized by coniferous and deciduous forests, but occupy a broad range of habitats (NatureServe, 2017). Distribution is strongly correlated with caves and mines (Bradley et al., 2006).	Y	Suitable habitat exists.	Foraging
Big brown bat	<i>Eptesicus fuscus</i>	BLM	Various wooded and semi-open habitats, including cities. Much more abundant in regions dominated by deciduous forests than by coniferous forests. Summer roosts generally in buildings but also in hollow trees, rock crevices, tunnels, and cliff swallow nests; prefers sites that do not get hot. Typically roosts in twilight part of caves. Maternity colonies form in attics, barns, and occasionally tree cavities. Caves, mines, and especially buildings and manmade structures are used for hibernation (NatureServe, 2017).	Y	Suitable habitat exists.	Foraging

Spotted bat	<i>Euderma maculatum</i>	BLM; State Threatened	In various habitats from desert to montane coniferous stands, including open ponderosa pine, piñon-juniper woodlands, canyon bottoms, open pastures, and hayfields (Bradley et al., 2006; NatureServe, 2017). Roosts in caves and in cracks and crevices in cliffs and canyons with which this species consistently is associated. Also occur in open or scrub country (NatureServe, 2017).	Y	Suitable habitat exists.	Foraging
Silver-haired bat	<i>Lasionycteris noctivagans</i>	BLM	Primarily forested (frequently coniferous) areas adjacent to lakes, ponds, or streams, including areas that have been altered by humans (Bradley et al., 2006; NatureServe, 2017). During migration, sometimes occur in xeric areas. Summer roosts and nursery sites are in trees foliage, cavities, and under loose bark, sometimes in buildings. Rarely hibernate in caves (NatureServe, 2017).	Y	Suitable habitat exists.	Foraging
Western redbat	<i>Lasiurus blossevillii</i>	BLM; State Sensitive	Found in riparian habitats dominated by cottonwoods, oaks, sycamores, and walnuts (Bradley et al., 2006; NatureServe, 2017). Rarely found in desert habitats.	N	No suitable habitat present.	N/A
Hoary bat	<i>Lasiurus cinereus</i>	BLM	Primarily in deciduous and coniferous forests and woodlands, including pure stands of Rocky mountain juniper and areas altered by humans (Bradley et al., 2006; NatureServe, 2017).	N	No suitable habitat present.	N/A
Dark kangaroo mouse	<i>Microdipodops megacephalus</i>	BLM; State Protected	At lower elevations, habitat consists of very sandy areas dominated by greasewood and saltbush with rabbitbrush. At higher elevations, areas dominated by sagebrush in sandy soils with a gravel overlay below the piñon-juniper zone. May occur in sand dunes near margins of the range. Underground when inactive (Hafner et al. 2008; Hafner and Upham 2011; NatureServe, 2017).	Y	Suitable habitat exists.	Foraging, breeding
Pale kangaroo mouse	<i>Microdipodops pallidus</i>	BLM; State Protected	Nearly restricted to deep, fine, sandy soils and in floral communities where greasewood and/or saltbush predominate; such habitats occur in the lower portion of the Upper Sonoran Life-Zone. Burrows in areas of soft, windblown sand piled at the bases of shrubs (Hafner et al. 2008; Hafner and Upham 2011; NatureServe, 2017).	N	No suitable habitat present.	N/A
California myotis	<i>Myotis californicus</i>	BLM	Western lowlands, sea coasts to deserts, oak-juniper communities, canyons, riparian woodlands, desert scrub, and grasslands. Often use manmade structures for night roosts. Uses crevices of various kinds, including those in buildings, for summer day roosts. Hibernates in caves, mines, tunnels, or buildings.	Y	Suitable habitat exists.	Foraging

Western small-footed myotis	<i>Myotis ciliolabrum</i>	BLM	Generally inhabits deserts, badlands, and semiarid habitats; more mesic habitats in the southern part of the range. Roosts in summer in rock crevices, caves, tunnels, under boulders, beneath loose bark, and in buildings. Hibernates in caves and mines. Maternity colonies often are in abandoned houses, barns, or similar structures (Bradley et al., 2006; NatureServe, 2017).	Y	Suitable habitat exists.	Foraging
Long-eared myotis	<i>Myotis evotis</i>	BLM	Mostly forested areas, especially those with broken rock outcrops; also shrublands, over meadows near tall timber, along wooded streams, and over reservoirs. Often roosts in buildings, also in hollow trees, mines, caves, and fissures (NatureServe, 2017).	Y	Suitable habitat exists.	Foraging
Little brown myotis	<i>Myotis lucifugus</i>	BLM	Found primarily at higher elevations and higher latitudes, often associated with coniferous forest. Require a nearby water source for foraging (Bradley et al., 2006). Often use manmade structures for resting and maternity sites; also use caves and hollow trees.	Y	Suitable habitat exists.	Foraging
Fringed myotis	<i>Myotis thysanodes</i>	BLM; State Protected	Primarily at middle elevations at 3,937 to 7,054 feet amsl in deserts, grasslands, and woodlands (NatureServe, 2017). Roosts in caves, mines, rock crevices, buildings, and other protected sites. Nursery colonies occur in caves, mines, and sometimes buildings (Bradley et al., 2006; NatureServe, 2017).	Y	Suitable habitat exists.	Foraging
Long-legged myotis	<i>Myotis volans</i>	BLM	Primarily in montane coniferous forests. Also found in piñon-juniper and Joshua tree woodlands. Uses caves and mines as hibernacula. Roosts in abandoned buildings, rock crevices, and under bark. In summer, apparently does not use caves as daytime roost sites. In some areas, hollow trees are the most common nursery sites, but buildings and rock crevices are also used (Bradley et al., 2006; NatureServe, 2017).	Y	Suitable habitat exists.	Foraging
Bighornsheep	<i>Ovis canadensis</i>	BLM;	In mesic to xeric, alpine to desert grasslands or shrub steppe in mountains, foothills, and river canyons. Grasslands are often fire-maintained. Suitable escape terrain (e.g., cliffs and talus slopes) is an important feature of the habitat (NatureServe, 2017).	N	The current bighorn sheep distribution for Nevada is located outside the Project Area.	N/A

Western pipistrelle	<i>Pipistrellus hesperus</i>	BLM	Deserts and lowlands, desert mountain ranges, desert scrub flats, and rocky canyons (NatureServe, 2017). In Nevada, found throughout state, primarily in the southern and western portions associated with granite boulders and canyons (Bradley et al., 2006). Day and night roosts include rock crevices, under rocks, burrows, and sometimes buildings or mines.	N	No suitable habitat present.	N/A
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	BLM; State Protected	Roosts in buildings (generally old buildings) and caves. May use rock crevices, bridges, signs, or cliff swallow nests as roosts during migration (Bradley et al., 2006; NatureServe, 2017). Large maternity colonies inhabit buildings and caves; also use culverts and bridges (NatureServe, 2017).	N	No suitable habitat present.	N/A
Fish Spring pocketgopher	<i>Thomomys bottae abstrusus</i>	BLM	Found in a wide variety of habitats from valleys to high mountain meadows. Usually not in forested areas. Inhabits a wide variety of soils from soft sands to friable loams to hard clays (NatureServe, 2017).	N	No suitable habitat present.	N/A
San Antonio pocket gopher	<i>Thomomys bottae curatus</i>	BLM	Found in a wide variety of habitats from valleys to high mountain meadows. Usually not in forested areas. Inhabits a wide variety of soils from soft sands to friable loams to hard clays (NatureServe, 2017).	N	No suitable habitat present.	N/A
<b>Reptiles</b>						
Amargosa toad	<i>Anaxyrus nelson</i>	BLM	Usually near water at desert springs and outflows. Vegetation bordering water consists of cottonwood trees, cattails, and sedges. May congregate at street lights to feed on attracted insects. Eggs and larvae develop in spring waters (NatureServe, 2017). Oasis Valley, Nevada, specifically along a 10-mile stretch of the Amargosa River and upland springs (USFWS, 2014a).	N	No suitable habitat present and out of geographic range (NatureServe 2017).	N/A
Columbia spotted frog (Great Basin DPS)	<i>Rana luteiventris</i>	FC; BLM	Highly aquatic and rarely found far from permanent quiet water. Usually occurs at the grassy/sedgy margins of streams, lakes, ponds, springs, and marshes. May disperse into forest, grassland, and brushland during wet weather, and may traverse uplands to reach wintering sites. Uses stream-side small mammal burrows as shelter.	N	USFWS IPaC results show no potential for occurrence.	N/A

Desert tortoise	<i>Gopherus agassizii</i>	FT; BLM; State Threatened	Occupy a variety of habitats from flats and slopes dominated by creosote bush scrub at lower elevations to rocky slopes in blackbrush and juniper woodland ecotones at higher elevations.	N	No suitable habitat present and out of geographic range (NatureServe 2017).	N/A
Railroad Valley springfish	<i>Crenichthys nevadae</i>	FT; State Threatened	Occur in thermal isolated springs and outflows (NatureServe, 2017).	N	No suitable habitat present and USFWS IPac results show no potential for occurrence.	N/A
Fish Lake Valley tuichub	<i>Gila bicolor</i> ssp. 4	BLM	Occupy freshwater. Aquatic dependent (NatureServe, 2017).	N	No suitable habitat present and out of geographic range.	N/A
Hot Creek Valley tuichub	<i>Gila bicolor</i> ssp.5	BLM	Occur in freshwater. Aquatic dependent (NatureServe, 2017).	N	No suitable habitat present and out of geographic range.	N/A
Railroad Valley tuichub	<i>Gila bicolor</i> ssp. 7	BLM	Occur in freshwater. Aquatic dependent (NatureServe, 2017).	N	No suitable habitat present and out of geographic range.	N/A
Lahontan cutthroat trout	<i>Oncorhynchus clarki henshawi</i>	FT	Found in lakes and streams; requires cool, well oxygenated water (NatureServe, 2017). Adapted to highly mineralized waters. In streams, uses rocky areas, riffles, deep pools, and areas under logs and overhanging banks; optimally, cover should be available in at least 25 percent of the stream area (USFWS, 1995).	N	No suitable habitat present, out of geographic range, and USFWS IPaC results show no potential for occurrence.	N/A
Monitor Valley speckled dace	<i>Rhinichthys osculus</i>	BLM; State Sensitive	Occur in freshwater. Aquatic dependent (NatureServe, 2017).	N	No suitable habitat present.	N/A
Southern Duckwater pryg	<i>Pyrgulopsis anatina</i>	BLM	Endemic to a single spring in Railroad Basin (NatureServe, 2017).	N	No suitable habitat present and out of geographic range.	N/A



Large-gland Carico pyrg	<i>Pyrgulopsis basiglans</i>	BLM	Endemic to single springs, spring complexes, or drainage basins in Lahontan Basin (NatureServe, 2017).	N	No suitable habitat present and out of geographic range.	N/A
Dixie Valley pyrg	<i>Pyrgulopsis dixensis</i>	BLM	Endemic to single springs, spring complexes, or drainage basins in the Dixie Basin (NatureServe, 2017).	N	No suitable habitat present and out of geographic range.	N/A
Oasis Valley pyrg	<i>Pyrgulopsis micrococcus</i>	BLM	Endemic to single springs, spring complexes, or drainage basins in the Death Valley system, other isolated basins within the Great Basin (NatureServe, 2017).	N	No suitable habitat present and out of geographic range.	N/A
Vineyards pyrg	<i>Pyrgulopsis vinyardi</i>	BLM	Freshwater dependent. Occurs in the Rock Watershed in Elko County, Nevada (Hershler ,1998).	N	No suitable habitat present and out of geographic range.	N/A
Wong's pyrg	<i>Pyrgulopsis wongi</i>	BLM	Habitat is restricted to seeps, headsprings, and upper reaches of spring runs. Typically common in watercress and/or on small bits of travertine (sedimentary rock) and stone. Present in the Owen Valley subregion of Death Valley, Lahontan Basin, and other isolated basins within the Great Basin (NatureServe, 2017).	N	No suitable habitat present.	N/A