BLM

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

Argenta Settlement Agreement Range Improvement Environmental Assessment

DOI-BLM-NV-B010-2016-0008-EA

PREPARING OFFICE

U.S. Department of the Interior
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List of Acronyms and Abbreviations

APE	Area of Potential Effect
ARMPA	Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment
ARPA	Archaeological Resources Protection Act
BAPC	Bureau of Air Pollution Control
BLM	Bureau of Land Management
BMD	Battle Mountain District
BMPs	Best Management Practices
CESA	Cumulative Effects Study Area
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	cubic feet per second
CWA	Clean Water Act
DOI	Department of the Interior
EIS	Environmental Impact Statement
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973, as amended
FCAD	Fire Creek Archaeological District
FLPMA	Federal Land Policy and Management Act of 1976
GHMA	General Habitat Management Areas
GIS	Geographic Information System
GRSG	Greater Sage-Grouse
HFRA	Healthy Forest Restoration Act
IPAC	Information, Planning, and Consultation System
MBTA	Migratory Bird Treaty Act
MDM	Mount Diablo Meridian
MLFO	Mount Lewis Field Office
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NAGPRA	Native American Graves Protection and Repatriation Act
NDEP	Nevada Division of Environmental Protection
NDOA	Nevada Department of Agriculture
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statute
NRST	National Riparian Service Team
NWI	National Wetland Inventory

OHA	Office of Hearings and Appeals
OHMA	Other Habitat Management Areas
OHV	Off Highway Vehicle
PFC	Properly Functioning Condition
PHMA	Priority Habitat Management Areas
RFFAs	Reasonably Foreseeable Future Actions
RMP	Resource Management Plan
ROD	Record of Decision
ROWs	Rights of Ways
SFA	Sage Brush Focal Areas
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SDWA	Safe Drinking Water Act
TCPs	Traditional Cultural Properties
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRM	Visual Resources Management

Chapter One: Purpose and Need for Action

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1.1 Background

The Bureau of Land Management (BLM) Mount Lewis Field Office (MLFO) has prepared this Environmental Assessment (EA) to address potential consequences associated with construction of three separate riparian exclosures within the Argenta Allotment.

As a result of resource conditions, due to drought and livestock management practices, the BLM temporarily closed portions of the Argenta Allotment in August, 2014, through a final decision. The decision was appealed by multiple parties and the appeal was settled on June 16, 2015 when the Acting Mount Lewis Field Office Manager signed a Settlement Agreement for the Argenta Allotment. The Settlement Agreement (Agreement) was approved by Order of the Office of Hearings and Appeals (OHA) on June 24, 2015. Under section 7.1.5 of the Agreement it states that "BLM commits to issuing a decision in accordance with 43 C.F.R. subpart 4160 within 8 months of receipt of permittees' completed application for 1-3 high priority larger lotic fence proposals if identified as such by National Riparian Service Team (NRST)." BLM received the recommendation for three fence proposals (Fire Creek, Ferris Creek, and North Fork of Mill Creek) from the NRST on August 11, 2015.

1.2 Purpose and Need for the Proposed Action

Purpose: The purpose of this project is to protect selected areas of riparian habitat from impacts of livestock grazing.

Need: This project is needed to fulfil the BLM's legal obligation to following the Agreement for Argenta Allotment approved on June 24, 2015 by the OHA. The Agreement states that BLM commits to issuing a decision in accordance with 43 C.F.R §4160 within 8 Months of receipt of permittees completed application for 1-3 high priority larger lotic fence proposals if identified as such by NRST.

In addition, the BLM's need to manage for the rangeland health standards, including riparian resource standards established by 43 C.F.R § 4180 which states that watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components.

An EA is required to analyze the impacts of the proposed projects prior to the BLM being able to issue a decision.

1.3 Land Use Plan Conformance

The proposed action and alternatives described below are in conformance with the following plans:

● To establish a grazing management program designed to provide key forage plants with adequate rest from grazing during critical growth periods.

● To achieve, through management of livestock and wild horses, utilization levels consistent with those recommended by the Nevada Rangeland Monitoring Handbook to allow more plants to complete growth cycles and to increase storage of reserves for future growth.

● Improve or maintain in good or better condition, 64 miles of aquatic habitat and 768 acres of riparian habitat associated with the streams and an additional 1,067 acres of other meadows, springs and aspen groves.

●To improve and maintain habitat for state listed sensitive species and federally listed threatened or endangered species.

●Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (ARMPA)

- MD SSS 2: E. Seasonal restrictions will be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbances to GRSG during seasonal life-cycle periods:

  1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30
     a. Lek-March 1 to May 15
     b. Lek hourly restrictions-6 p.m. to *9* a.m.
     c. Nesting- April 1 to June 30

- MD SSS 2 Compliance: There are several leks approximately 1.2 miles from the project location. These projects will be constructed at a season/time compatible with the above seasonal requirements.

- MD SSS 3: In GHMAs, the following conditions will be met in order to avoid, minimize, and mitigate any effects on GRSG or its habitat from the project/activity:

  A. In GHMAs, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of

such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) in GHMAs will result in an overall net conservation gain to GRSG (see Appendix F, Regional Mitigation Strategy).

B. Authorized/permitted activities are implemented adhering to the RDFs described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.

2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.

3. A specific RDF will provide no additional protection to GRSG or its habitat.

- MD SSS 3 Compliance: In the NEPA associated with permitting the maintenance of the projects, any RDFs that are not required will be addressed as to why they are not implemented.

- MD SSS 11: Design and construct fences consistent with BLM H-1741-1, Fencing Standards Manual (BLM 1990), and apply the Sage-Grouse Fence Collision Risk Tool to Reduce Bird Strikes (NRCS 2012). Bring existing fencing into compliance as opportunities arise.

- MD SSS 11 Compliance: The proposed fences will be constructed consistent with BLM H-1741-1, and fence markers will be incorporated.

- MD LG 13: For range improvement projects, review Objective SSS 4 and apply MDs SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

- MD LG 13 Compliance: MD SSS 1-4 will be incorporated as noted above.

- MD LG 14: Build or modify livestock exclosures so that they are large enough to provide hiding cover to GRSG and other wildlife and to reduce the possibility of wildlife collisions with fences (Christiansen 2009; Stevens 2011; NRCS 2012).

- MD LG 14 Compliance: The proposed fences will be constructed consistent with BLM H-1741-1, and fence markers will be

incorporated. The fences will be jack rail and barbed wire and will be large enough to ensure minimal impacts to wildlife species, including GRSG.

- MD LG 23: Fences shall not be constructed or reconstructed within 1.2 miles from the perimeter of occupied leks, unless the collision risk can be mitigated through design features or markings (e.g., mark, laydown fences, and design).

- MD LG 23 Compliance: The proposed fences will be constructed consistent with BLM H-1741-1, and fence markers will be incorporated. The fences will be majorly comprised of jack rail, and any barbed wire component will contain fence markers to mitigate collision risk.

- RDF Gen 12: Control the spread and effects of nonnative, invasive plant species (e.g., by washing vehicles and equipment, minimize unnecessary surface disturbance; Evangelista et al. 2011). All projects would be required to have a noxious weed management plan in place prior to construction and operations.

- RDF Gen 12 Compliance: In the NEPA associated with permitting the maintenance of the projects, any necessary washing of machinery/tools will be addressed/required.

1.4 Relationships to Statutes, Regulations, Policy or other Environmental Analysis

The proposed action and Alternatives would be in conformance, to the maximum extent possible, with the following Federal, BLM regulations:

- Taylor Grazing Act of 1934
- National Environmental Policy Act of 1969 (NEPA)
- National Historic Preservation Act of 1966, as Amended (NHPA)
- Endangered Species Act of 1973
- Federal Land Policy and Management Act of 1976 (FLPMA)
- Public Rangelands Improvement Act of 1978
- 43 CFR §4160 and §4180

- Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (ARMPA), 2015

Figure 1.4 Overview of Fire Creek

Figure 1.4.1 Overview of Ferris Creek

Figure 1.4.2 Overview of North Fork of Mill Creek

1.5 Scoping and Public Involvement

An internal BLM scoping meeting was held on October 29, 2015. The interdisciplinary team identified several potential resource issues including;

- The possible presence of cultural resources around riparian areas where the fences would be constructed;
- The effects of fences on GRSG (collision potential and perches for predators);
- Fencing across an existing unauthorized road and the effect on OHV recreation;
- The effects of fencing off riparian and water on livestock grazing management; and
- The potential spread of weeds and non-native species by vehicles during the installation phase;

Letters were sent to the Battle Mountain Band of the TeMoak Shoshone tribe, and the TeMoak Shoshone Tribe on November 25, 2015. The tribes have not responded with any comments or concerns.

Public Scoping was initiated through letters mailed on December 18, 2015. BLM requested that scoping comments be submitted by 4:30 on January 5, 2016. Four comment letters were submitted and included the following NEPA related concerns:

- Effects of the proposed project on GRSG PHMA & GHMA, burrowing owl, big game and other rare/sensitive species habitats;
- Delaying the analysis of the projects until the permit renewal process which would include resting the Argenta Allotment in 2016 and incorporating the projects into one NEPA analysis; and
- Whether the project is consistent with the Approved Resource Management Plan Amendment for the Northeastern California-Nevada Sage-grouse planning area.

Chapter Two: Proposed Action and Alternatives

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2.1 Description of the Proposed Action

The proposed action aims to improve riparian habitat along three stream segments in the Argenta Allotment: Fire Creek, Ferris Creek and North Fork of Mill Creek. This is to be accomplished by permanently excluding the selected riparian areas from livestock use through installing three separate fences. The stream segments are currently degraded from the impacts of current and historic livestock use and other uses such as off road vehicle travel. The fenced area would protect the riparian habitat by excluding livestock access to the stream segments reducing soil compaction and erosion, and increasing stream bank stabilization and water, as well as allowing for vegetation to reach its potential. Each stream segment will be fenced with jack rail fencing to keep livestock out of streams, while providing wildlife access. Where jack rail fencing is not feasible due to topography or other physical limitations barbed wire fencing will be used. Barbed wire fencing will be constructed to meet BLM wildlife compatibility specifications including sage grouse deterrent markers. Fence construction and maintenance will be assigned to the permittees on the Argenta Allotment through a cooperative agreement and assignment of range improvements. BLM will periodically inspect the range improvement to ensure proper maintenance is occurring.

The proposed Fire Creek exclosure would be located at T. 30 N R. 47 E Sec. 22 Mount Diablo Meridian (MDM) and project area would be approximately 25.9 acres. The fence would be 1.7 miles and would exclose 21.6 acres of riparian habitat and adjacent uplands (see Map 2.3.1). Currently a BLM Decision issued September 2, 2015 authorized the construction of a small exclosure around the lentic spring source that is the headwater of Fire Creek. This proposed exclosure extends that smaller exclosure to include the majority of the lentic portion of Fire Creek on BLM administered lands. This fence will block access to an existing unauthorized road and facilitate reclamation of that road, totaling 0.32 miles.

The proposed Ferris Creek exclosure would be located at T. 28 N R. 46 E Sec. 4&9 MDM and project area would be approximately 23.4 acres, tying in to the Carico Lake/Argenta Allotment boundary fence. The fence would be 0.8 miles and would exclose 21.3 acres of riparian habitat and adjacent uplands (see Map 2.3.2). This proposed exclosure includes the lotic portion of Ferris Creek within the Argenta Allotment.

The proposed North Fork of Mill Creek exclosure would be located at the T. 29 N R. 45 E Sec. 36 MDM and project area would be approximately 11.2 acres. The fence would be 1.1 miles and would enclose 8.8 acresof riparian habitat and adjacent uplands (see Map 2.3.3). Currently a BLM Decision issued September 2, 2015 authorized the construction of a small exclosure around the lentic spring source that is the headwater of North Fork of Mill Creek. This proposed exclosure extends that smaller exclosure to include the lotic portion of North Fork of Mill Creek on that section of BLM administered land. A water gap and road crossing would be constructed where the existing road crosses the stream. Additionally,

two cattle guards would be installed allowing the road to continue in its existing course to include an additional spring in the exclosure.

The fence lines in the project area would be buffered by 20 feet in order to estimate the potential ground disturbance of the proposed action. In addition, a 2,500 sq/ft temporary construction lay down area is proposed in previously disturbed areas for construction equipment and stock piling of fencing materials at each of the three locations. Access to the springs during construction would be through existing access roads; however, minimal (<0.1 mile) overland vehicle travel may be required to access each site. The total disturbance area for the proposed action, including the stream sections, fenced areas, and temporary lay down area is approximately 60.35 acres.

2.2 Design Features Common to All Action Alternatives

Cultural Resources
Where feasible, the fences would be constructed at least 10 meters from the boundaries of historic properties identified in the project areas, as stipulated by Section V. E. 7 in the *State Protocol Agreement between The Bureau of Land Management, Nevada and The Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act*.

A BLM qualified archaeological monitor would be present during construction to ensure appropriate placement of the fence so the eligibility of identified sites would not be affected.

Livestock Grazing
Each exclosure would have a gate to allow for removal of livestock that may be trapped inside the exclosures.

Fences would be constructed in accordance with BLM Handbook 1741-1 Chapter 4 Fence Design and Construction Standards.

To the extent possible, fence lines would be placed where existing disturbance and topography would limit impacts of livestock trailing.
Access during construction would be reserved to existing roads and limited overland travel by vehicles to no more than 0.1 mile at each site.

Cattle guards would be installed to allow continued use of existing open roads.
All activities would be halted immediately in the event of a discovery of a cultural resource.

Noxious Weeds, Invasive and Non-Native Species
Any equipment or vehicles exposed to weed infestations or arriving on site carrying soil or plant debris would be cleaned before moving into or within the

project area to help control the spread of weed infestations along roadsides and other areas.

Wastes, Hazardous or Solid
All refuse generated during the project would be removed and disposed of in an authorized off-site landfill facility, consistent with applicable regulations. No refuse would be disposed of or left on site. A portable chemical toilet would be used during the time the construction crew is on site.

Diesel fuel and gasoline would be store in fuel delivery systems (i.e. manufacturer installed gas tanks) on construction equipment and support vehicles. All containers of hazardous substances would be labeled, handled, and stored in accordance with the Nevada Division of Environmental Protection (NDEP) regulations. If regulated materials such as gasoline or diesel fuel are spilled at the project site, the operator should take measures to control the extent of the spill and contact the NDEP (888-331-6337) and BLM (775-635-4000). Any hazardous substance spills would be cleaned up immediately and any resulting waste would be transferred offsite in accordance with all applicable local, state, and federal regulations. Contract construction crews would maintain spill kits on site in case of a spill.

Migratory Birds
In order to avoid potential impacts to breeding migratory birds, a nest survey would be conducted by a BLM biologist prior to building the riparian exclosures during the avian breeding season (March 1 through July 31 for raptors, and April 1 through July 31 for other avian species). 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. If active nests are located around the project area, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nest material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) would be delineated and the buffer area avoided to prevent destruction or disturbance to nests or birds until they are no longer actively breeding or rearing young. The site characteristics to be used to determine the size of the buffer area are as follows: 1) topographic screening; b) distance from disturbance to nest; c) the size and quality of foraging habitat surrounding the nest; d) sensitivity of the species to nest disturbances; and e) the protection status of the species.

Wildlife
The proposed fencing will be designed and constructed in accordance with BLM's H-1741-1 Fencing Standards Manual (BLM 1990). For barb wire fence, the fourth strand will be a smooth wire for safe ingress and egress for all wildlife species including mule deer and pronghorn antelope.

Greater Sage-Grouse
To avoid potential anthropogenic noise impacts to Greater Sage-Grouse (GRSG), surface-disturbing activities in GRSG PHMA and GHMA, certain

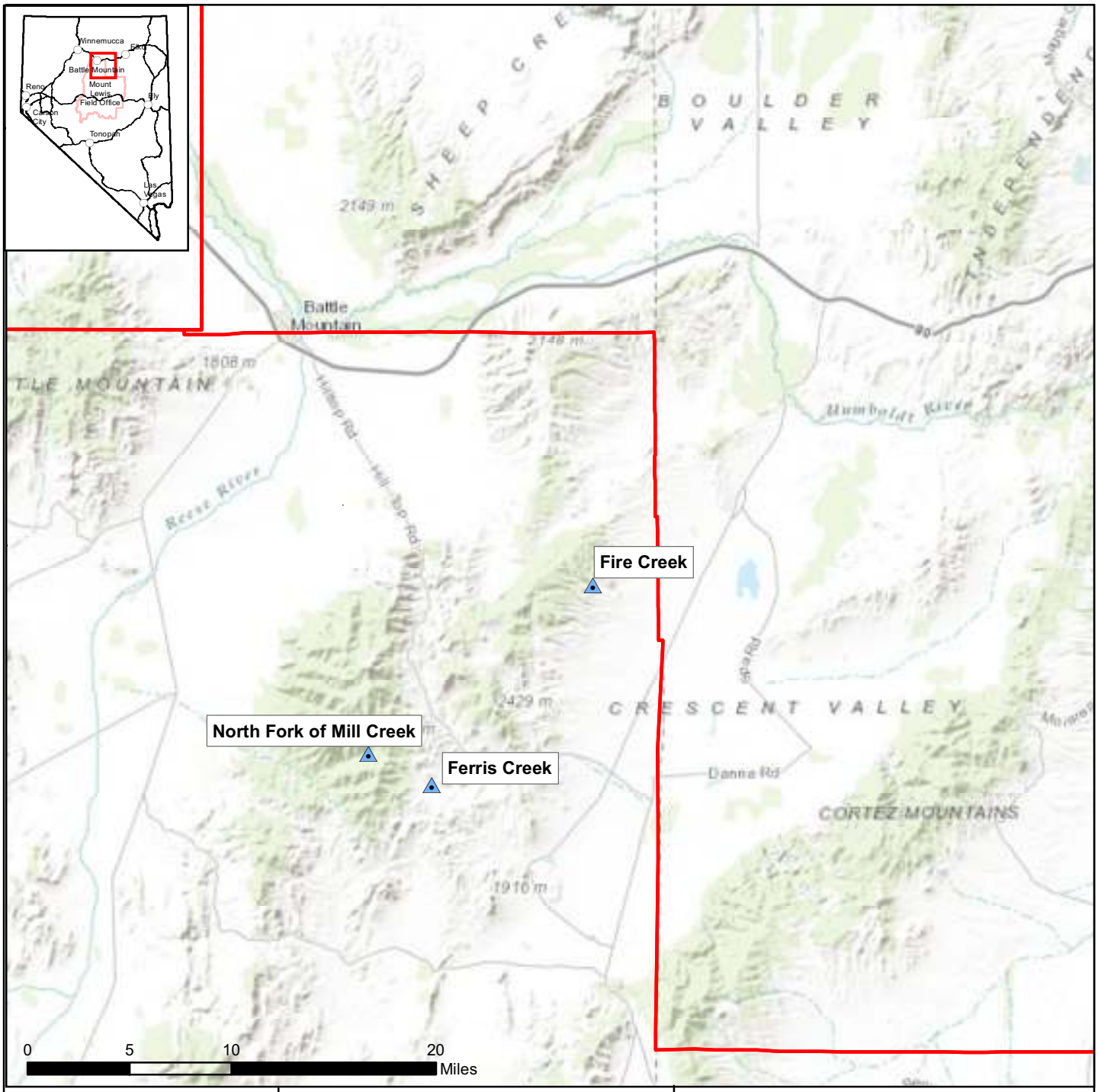
seasonal restrictions will be followed from the GRSG ARMPA (MD-SSS 2 and MD-SSS-3) for constructing each of the exclosures:

Ferris Creek: construction will only take place through September 16th through October 31st

North Fork Mill Creek: construction will only take place through September 16th through October 31st

Fire Creek: construction will only take place through September 16th through October 31st

GRSG reflective fence markers will be added to the exclosures that contain sections of barb wire fence to reduce GRSG collisions.



Project

Mount Lewis Field Office Boundary

January 15, 2016

United States Department of the Interior
Bureau of Land Management
Battle Mountain District Office
Mount Lewis Field Office
50 Bastian Road
Battle Mountain, NV 89820

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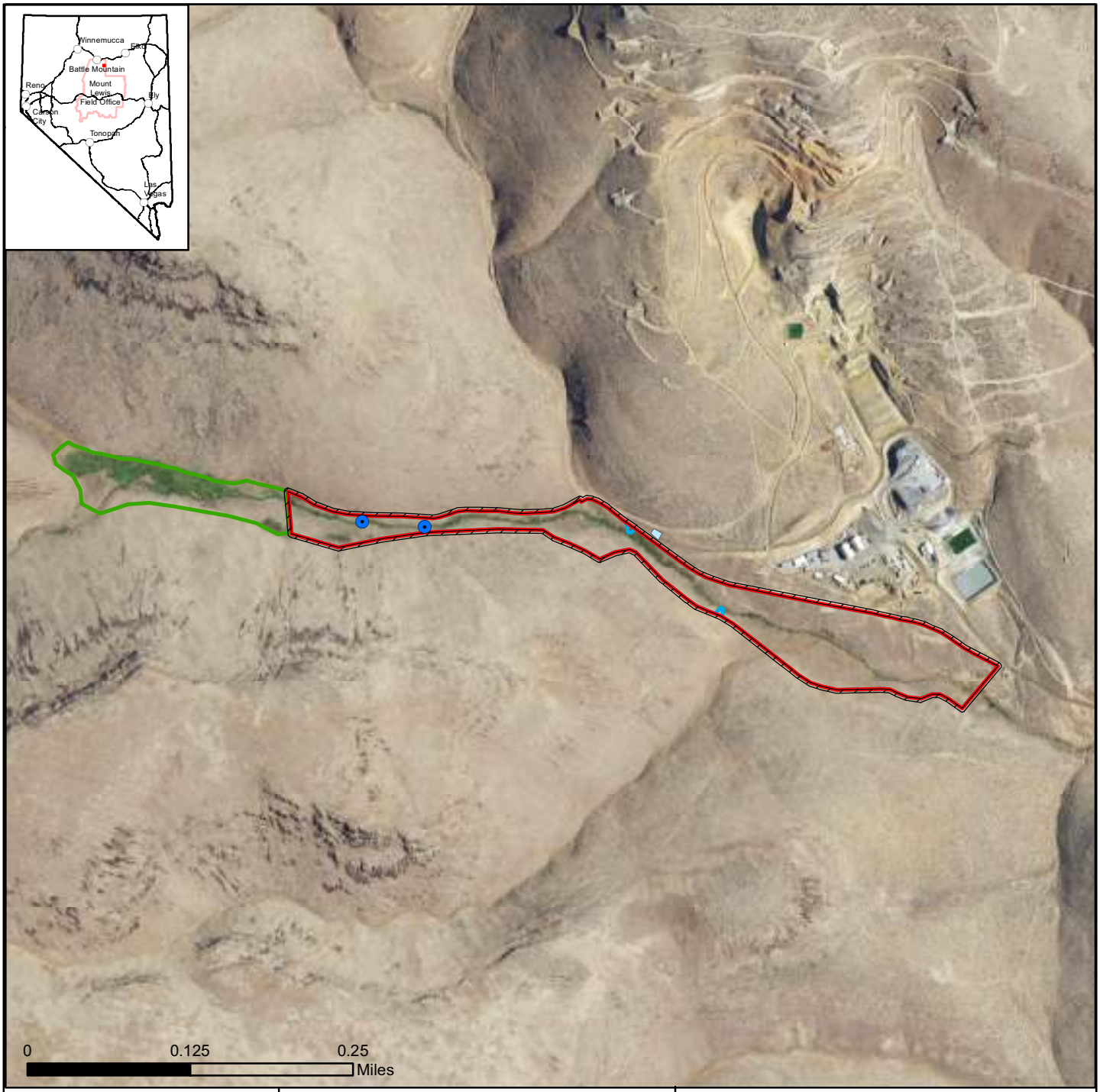
BUREAU OF LAND MANAGEMENT

Argenta Settlement Agreement
Environmental Assessment

General Location and Project Areas

Map 2.2 General Location and Project Areas



Proposed Fencelines

Approved Range Improvement

Water Gap

Potential Disturbance Area

MIM Site

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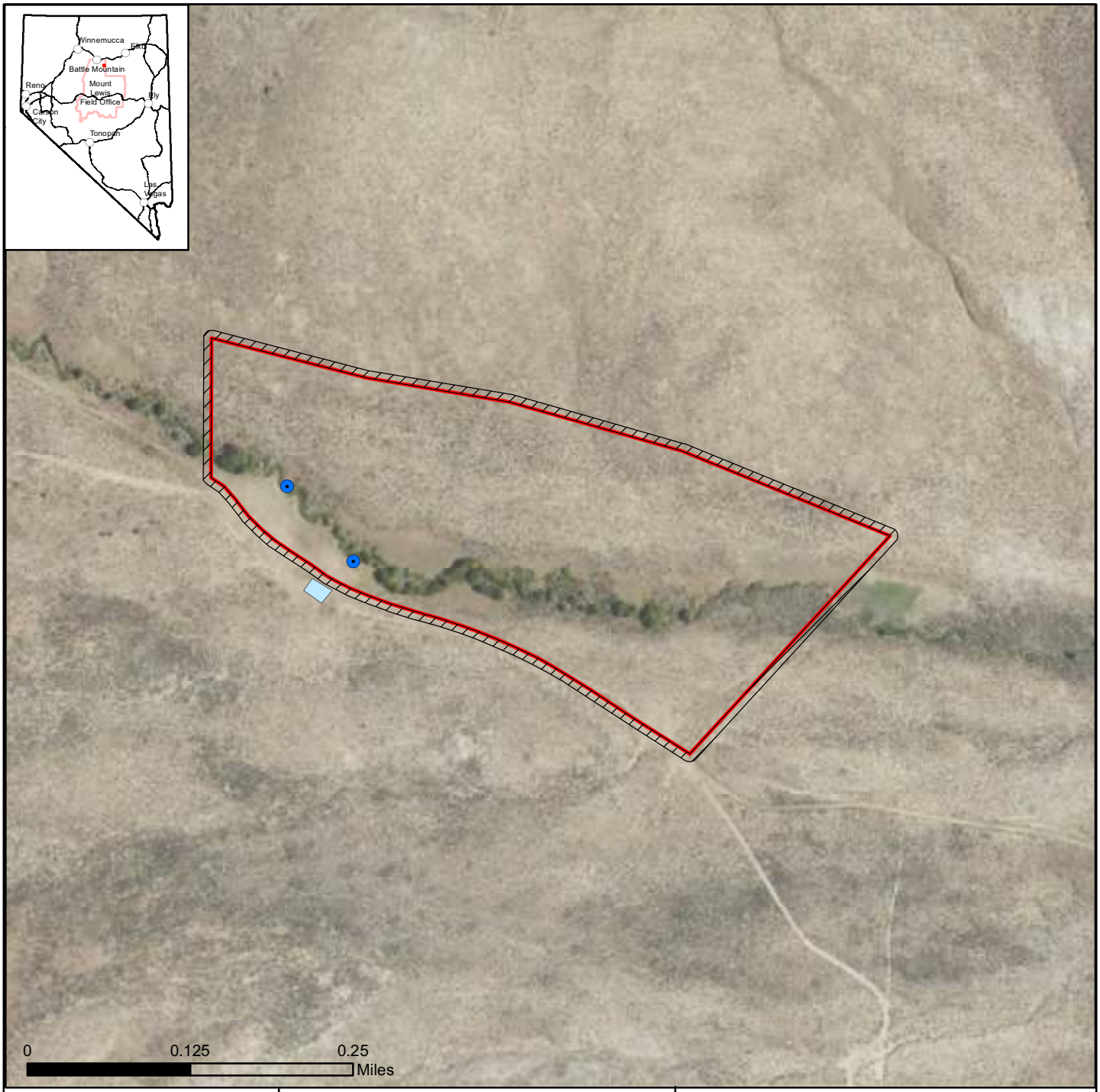
Fire Creek Project Area with Proposed Fences

Map 2.2.1 Fire Creek Project Area with Proposed Fences



Proposed Fencelines

Potential Disturbance Area

Construction Lay Down Area

MIM Site

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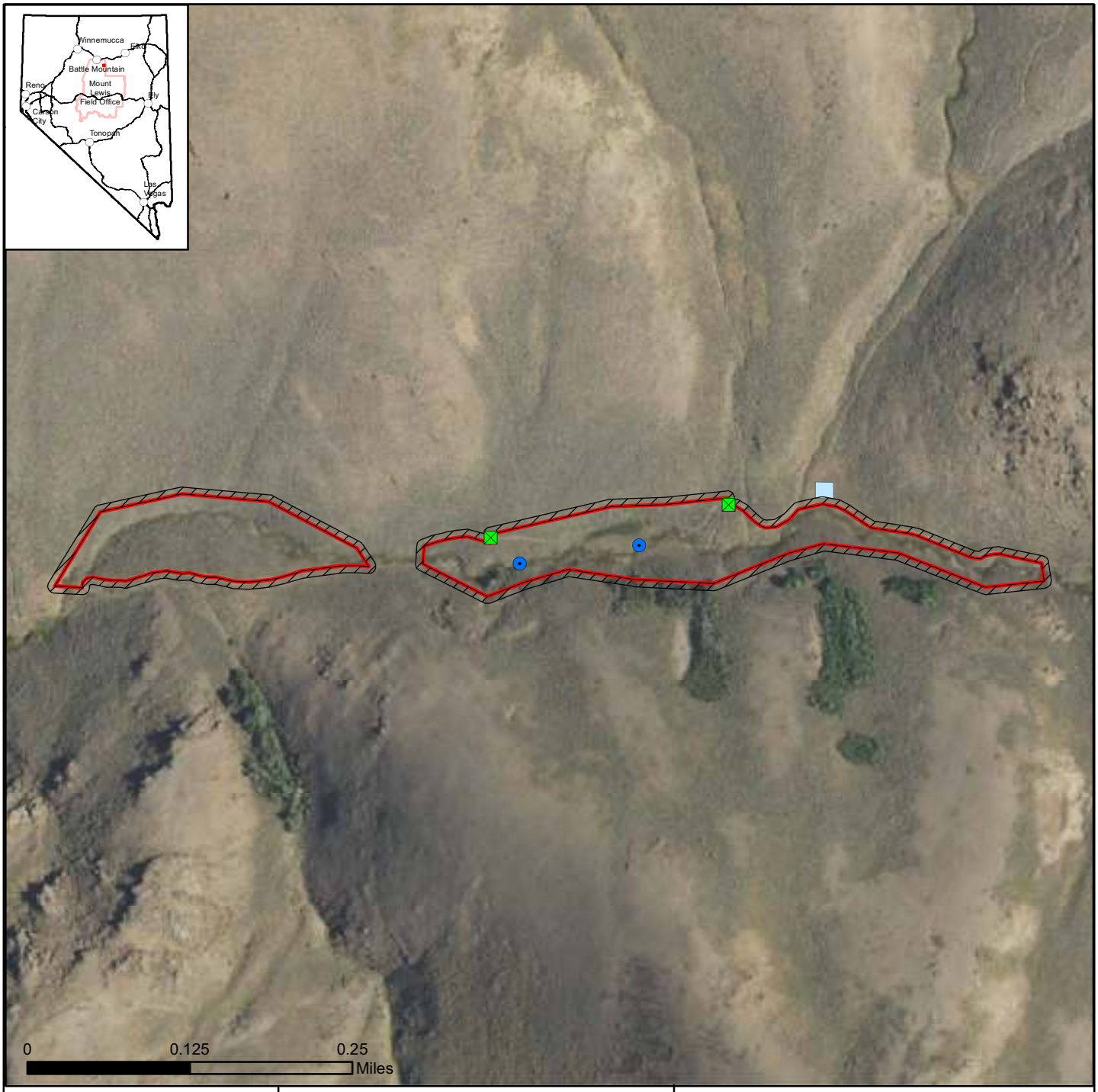
Argenta Settlement Agreement
Environmental Assessment

Ferris Creek Project Area with Proposed Fences

Map 2.2.2 Ferris Creek Project Area with Proposed Fences



Proposed Fencelines

Potential Disturbance Area

Construction Lay Down Area

Cattle Gaurd

MIM Site

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Argenta Settlement Agreement
Environmental Assessment

North Fork of Mill Creek Project Area with Proposed Fencelines

Map 2.2.3 North Fork of Mill Creek Project Area with Proposed Fences

2.3 Alternatives to the Proposed Action

The National Environmental Policy Act (NEPA) requires the consideration of alternatives other than the proposed action. Specifically, it states that agencies must "study, develop, and describe appropriate alternatives to recommend courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources" (42 USC 4332). The alternatives should address the issue(s) the proposed action attempts to achieve, but using other methods and should consider technical and economic factors.

2.3.1 Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps. They would be placed in the Fire Creek exclosure fence; one on the north side and one on the south side of the exclosure (see Map 2.3.1). Location and placement of the water gaps may vary from, what is shown on map, depending on site conditions during installation. The water gaps would have rock placed along the stream bank and surrounding benches armoring the bank from livestock trampling. The water gaps would provide livestock access no larger than 20 feet at each location. Removable Fence Sections or/gates would be added to the water gaps help control livestock movements by controlling timing of access to water in the use area. The design would be consistent with all BLM, state, and federal laws, regulations, and policies. The design would also be reviewed and approved by a qualified BLM engineer.

2.3.2 No Action Alternative

Under the No Action Alternative, the fencing project would not commence. The three stream segments identified in the proposed action would remain in their current condition, unless livestock operators modified grazing practices in other ways within their annually authorized permitted use, which could include reducing intensity of grazing near riparian areas, voluntary deferment of timing of livestock use, and increased stockmanship.

2.3.3 Alternative Proposed but not Considered

2.3.3.1 No Grazing Alternative

This alternative would eliminate grazing on the Argenta Allotment. This is not a feasible alternative because it fails to meet the need of the proposed action and is not consistent with the current Shoshone-

Eureka Resource Management Plan, Federal Land Policy and Management Act of 1976, or the Taylor Grazing Act of 1934.

Chapter 3: Affected Environment and Environmental Consequences

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3.1 Supplemental Authorities to be Considered

Table 3.1: Supplemental Authorities Considered in the EA

Supplemental Authority	Not Present	Present/Not Affected	Present/May be Affected	Rationale
Air Quality		X		Effect to air quality would be minimal and temporarily limited to the construction phase. The resource was not brought forward for analysis.
Cultural/Historical		X		Effects to cultural resources would be avoided by complete avoidance or avoiding all aspects contributing to a site's eligibility. The resource was not brought forward for cumulative analysis because there would be no effects through avoidance. See discussions in Sections 3.3
Fish Habitat			X	See discussions in Sections 3.13 and 4.2.9
Forests and Rangelands (Healthy Forest Restoration Act [HFRA] only)	X			Forest and Rangelands are special designated areas which are not present in the Battle Mountain District.
Migratory Birds			X	See discussion in Sections 3.13 and 4.2.9
Native American Cultural Concerns			X	See discussion in Sections 3.4 and 4.2.1
Threatened or Endangered Species			X	See discussion in Sections 3.13 and 4.2.9
Wastes, Hazardous or Solid		X		Hazardous materials on site would be minimal and limited to the construction phase. Mitigation is provided through design features to eliminate the potential for effect.
Water Quality Drinking-Ground			X	See discussion in Sections 3.6 and 4.2.3
Wild and Scenic Rivers	X			No wild and scenic rivers in the Battle Mountain District.
Wilderness	X			No wilderness areas in or adjacent to the project area.
Environmental Justice	X			No low income or minority populations would be effected by the project.
Floodplains		X		There are no designated floodplains in the project area. Some of the projects may cross areas subject to flooding. The projects would not impact other floodplains or floodplain functions and therefore be omitted from further analysis.
Wetlands-Riparian Zones			X	See discussion in Sections 3.7 and 4.2.4

3.2 Other Resources Considered in the EA

Table 3.2: Other Resources Considered in the EA

Other Resources	Not Present	Present/Not Affected	Present/May be Affected	Rationale
Areas of Critical Environmental Concern (ACEC)	X			No ACECs are present in the project area.
Farm Lands (Prime or Unique)	X			No Farm Lands (Prime or Unique) in the project area.
Human Health and Safety (Herbicide Projects)	X			No herbicides would be used during fence construction.
Noxious Weeds, Invasive and Non-Native Species			X	See discussion in Sections 3.5 and 4.2.2
Grazing Management			X	See discussion in Sections 3.8 and 4.2.5
Land Use Authorization	X			There are no existing Rights of Way near the project area.
Minerals		X		Mineral resources are not affected by riparian exclosures. It will not be analyzed further in this document.
Paleontological Resources	X			The project has no effect on any bedrock formations in the area.
Recreation			X	See discussion in Sections 3.9 and 4.2.6
Social and Economic Values		X		There would be no jobs created by the project and there would be no AUMs lost as a result of the exclosures. Social and Economic Values are not carried forward for analysis.
Soils			X	See discussion in Sections 3.10 and 4.2.7
Special Status Species (Plants and Wildlife)			X	See discussion in Sections 3.13 and 4.2.9
Vegetation			X	See discussion in Sections 3.11 and 4.2.8
Visual Resources			X	The project area is in a Class IV Visual Resources Management Area. The effects would be minimal and were not carried forward for cumulative analysis.
Wild Horses and Burros	X			Project is not in a Herd Management Area.
Wildlife			X	See discussion in Sections 3.13 and 4.2.9

3.3 Cultural Resources

Affected Environment

To evaluate any potential effects to cultural resources, the State Protocol states that the BLM will define the Area of Potential Effect (APE) for each undertaking, and that this area will include direct and indirect physical effects, and visual, audible, and atmospheric effects. The APE for this analysis consists of the surface area that the fence line will be placed on and a 10 meter buffer on the outside of the exclosure that may receive increased cattle trailing.

The primary laws regulating the preservation of cultural resources are Title 54 U.S.C. §300101, et. seq., commonly known as the National Historic Preservation Act of 1966, as amended (NHPA), the Archaeological Resources Protection Act (ARPA) of 1979, and the Native American Graves Protection and Repatrian Act (NAGPRA) of 1990. Federal regulations obligate federal agencies to protect and manage cultural resource properties and prohibit the destruction of significant cultural sites and historic properties without first mitigating the adverse effect (36 CFR 800.3-800.7). These regulations apply to all federal undertakings and all cultural resources. To accomplish compliance under the NHPA, the Nevada BLM uses the *State Protocol Agreement between The Bureau of Land Management, Nevada and The Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act* (State Protocol).

Historic properties are defined as sites that are eligible for inclusion in the National Register of Historic Places (NRHP) or those that have not yet been evaluated for NHRP inclusion. For a property to be considered eligible, it must meet at least one of the following criteria:

Criterion A: The resource is associated with events that have made a significant contribution to the broad pattern of history.

Criterion B: The resource is associated with the lives of people significant in the past.

Criterion C: The resource embodies distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic value; or represents a significant and distinguishable entity whose components may lack individual distinction.

Criterion D: The resource has yielded, or may be likely to yield, information important in prehistory or history.

To initially identify, record, and evaluate historic properties, the Nevada BLM typically requires a Class III Inventory, as defined by the *Guidelines and Standards for Archaeological Inventory, January 2012-Fifth Edition*. Each of the locations have had varying amounts of previous inventories completed, some of which have identified historic properties.

Fire Creek

Multiple inventories have been completed in the Fire Creek project area (BLM6-1314; BLM6-2734-0; BLM6-2734-5; BLM6-2734-17), mainly due to the extensive mining activities in the area. The proposed exclosure lies within the boundaries of the Fire Creek Archaeological District (FCAD). The FCAD is a National Register-eligible district. The National Park Service defines a district as possessing “a significant concentration, linkage or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development”. Individual sites or loci within a district are evaluated as “contributing” or “non-contributing” to the district’s significance. The district consists of 178 total loci; 28 contribute to the district’s significance eligibility and 41 are unevaluated. Only two of the contributing loci fall within the physical footprint of the proposed fence line. These two loci in the project area are currently affected by an existing access road running alongside the creek, as well as surface disturbance due to overgrazing.

Ferris Creek

At the Ferris Creek location, a Class III inventory of the entire physical APE was completed. Two historic properties were identified during this inventory. These sites are currently affected by a road and fence that were previously constructed, and the surface integrity of each of these sites has been heavily impacted by overgrazing at this location.

North Fork of Mill Creek

The North Fork of Mill Creek area has never been inventoried; therefore there are no known historic properties in this location. This area is currently affected by an existing road, and the ground surface has been impacted by overgrazing.

Environmental Consequences

Proposed Action

The direct physical effects of this proposed action would be the surface disturbance of any T-post fences that will be used during the construction of the fences. To minimize the surface disturbance of fencing materials, jack rail fencing will be used instead of T-posts whenever possible. Instead of being physically staked into the ground, jack rail fences lie on the surface. Indirect physical effects of the proposed action would consist of the surface disturbance created from any cattle trailing/trampling along the outside of the fences once the exclosure is established. This would affect the ground surface within a 10 meter buffer zone outside of each fence line. Visual, audible, and atmospheric effects will have no impact to the eligibility determinations of any of the historic properties in the affected environment.

According to Section V. E. 7. of the State Protocol, fences can be categorically determined to have no adverse effect when fences are constructed with a 10 meter buffer zone from known boundaries of historic properties, or if they follow existing roads or similar surface disturbances. This procedure only applies when an area has been sufficiently inventoried and evaluated by a BLM-qualified archaeologist. In the areas that have not been inventoried, a Class III inventory will be conducted prior to the construction of the fence so this stipulation can be met. The Fire Creek and North Fork of Mill Creek exclosures will be constructed to avoid all historic properties by 10 meters and/or follow existing disturbances to satisfy these measures. At the Ferris Creek location, a portion of the fence line will be placed across segments of an eligible site. The integrity of the surface of this site in these areas has already been compromised due to cattle trampling, therefore any cattle trailing alongside the outside of the proposed fence will not have any additional effects that the site has not already incurred. Utilizing these construction parameters at each of these locations, the research potential (Criterion D) of the historic properties will not be affected.

The proposed action would also effectively stabilize the condition of any historic properties located within the exclosures. No cattle intrusions into the interior of the exclosures would prevent further surface disturbance to those sites inside. It would also most likely deter entrance from the general public to these locations, decreasing the risk of the unauthorized surface collection of artifacts.

Water Gap Alternative
The effects of the water gap alternative would be identical to the effects of the proposed action.

No Action Alternative
Implementing a No Action Alternative would result in no fences being built in these locations. This would result in the continuation of existing conditions and trends at these locations, most notably, the continued degradation of the surface condition of known historic properties due to grazing in these areas.

3.4 Native American Concerns

Affected Environment

Located within the traditional territory of the Western Shoshone, the Mount Lewis Field Office administrative boundary contains spiritual, traditional, and cultural resources, and sites to engage in social practices that aid in maintaining and strengthening the social, cultural, and spiritual integrity of the Tribes. In accordance with the NHPA (P.L. 89-665), NEPA (P.L. 91-190), the Federal Land Policy and Management Act (P.L.94-579), the American Indian Religious Freedom Act (P.L. 95-341), the Native American Graves Protection and Repatriation Act (P.L. 101-601), and Executive Order 13007, the BLM must provide affected tribes an opportunity to comment and consult on the proposed project. BLM must attempt to identify locations having traditional/cultural importance and reduce or possibly

eliminate any negative impacts to identified traditional, cultural, spiritual sites, activities, and/or resources.

The following document has also produced descriptions of past traditional/cultural use of locations near the project boundary: *Behind the Argenta Rim: Prehistoric Land Use in Whirlwind Valley and the Northern Shoshone Range* (Robert Elston and Margaret Bullock. 1994).

Known locations (to BLM) of cultural/traditional significance within the region are: Mule Canyon (to the Northeast) which shows extensive plant processing, and the Whirlwind Valley (to the northeast), which once contained a large geyser and hot spring complex.

Public notice letters seeking input from the Battle Mountain Band and the Te-Moak Tribe of the West Shoshone Nation were sent out on November 25, 2015. A follow up call on December 2, 2015 to the Te-Moak Tribe and Battle Mountain Band seeking input was also made. Currently no formal comments on input have been provided from either group.

Social activities of Native Americans continue to define places of cultural importance across lands currently administered by the BLM. Some Western Shoshone maintain cultural, spiritual, and traditional activities, visit their sacred sites, hunt game, and gather available medicinal and edible plants. Through oral history (the practice of handing down knowledge from the elders to the younger generations), some Western Shoshone continue to maintain a world view similar to that of their ancestors.

Cultural, traditional, and spiritual sites and activities of importance to Tribes include, but are not limited to the following:

- Existing animal traps;
- Certain mountain tops used for vision questing and prayer;
- Medicinal and edible plant gathering locations;
- Sites associated with creation stories;
- Hot and cold springs;
- Collection of materials used for basketry and cradle board making;
- Locations of stone tools such as points and grinding stones (mano and matate);
- Chert and obsidian quarries;
- Hunting sites;
- Rock collecting for use in offerings and medicine gathering;

- Rock shelters;

- Lands or resources that are near, within, or bordering current reservation boundaries;

- Actions that conflict with tribal land acquisition efforts.

Environmental Consequences

Various Tribes and Bands of the Western Shoshone have stated federal projects and land actions can have widespread effects to their culture and religion as they consider the landscape as sacred and as a provider. Various locations throughout the BLM MLFO Battle Mountain administrative area host certain traditional, spiritual, and cultural use activities today, as in the past. Traditional Cultural Property (TCP), designated by the Tribes, is not known to exist in or within the vicinity of the Project Area. The BLM continues to solicit input from local tribal entities. The BLM is continuing to coordinate with the Tribes to identify any other sites or artifacts, or cultural, traditional, and spiritual use resources and activities that might experience an impact.

If any TCPs, tribal resources, sacred sites, etc. are identified within or in close proximity to the Project boundary, a protective “buffer zone” may be acceptable, if doing so satisfies the needs of the BLM, the proponent, and affected Tribe. The size of any “buffer zone” would be determined through coordination and communication between all participating entities.

During the Project's activities, if any cultural properties, items, or artifacts (i.e., stone tools, projectile points, etc.) are encountered, it must be stressed to those involved in the proposed project activities that such items are not to be collected. The design features in Section 2.2 states that all activities would be halted immediately in the event of a discovery of a cultural resource. Cultural and archaeological resources are protected under the ARPA (16 US Code 470ii) and the FLPMA.

Though the possibility of disturbing Native American gravesites within most project areas is extremely low, inadvertent discovery procedures must be noted. Under the NAGPRA, Section (3)(d)(1), the discovering individual must notify the authorized officer in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation.

At this time, no impacts related to Native American Concerns have been identified and are not anticipated from the proposed action. Tribal relations and coordination does not terminate with the land use decision itself, but rather continues to engage Tribes regarding treatments, mitigation, reclamation, and disposition of artifacts and deports.

3.5 Noxious Weeds, Invasive, and Non-Native Species

Affected Environment

Noxious weeds, invasive and non-native species are species that are highly competitive, aggressive and spread easily. They typically establish and infest disturbed sites, along roadsides and waterways. Changes in plant community composition from native species to non-native species can change fire regimes, negatively affect habitat quality, biodiversity, and ecosystem structure and function.

Noxious weeds and invasive plant species have been defined as pests by law or regulation. The BLM defines a noxious weed as, “a plant that interferes with management objectives for a given area of land at a given point in time” (BLM, 2016). The Federal Noxious Weed Act of 1974 (as amended by Section 15, Management of Undesirable Plants on Federal Lands, 1990) authorizes cooperation among federal and state agencies in the control of weeds. The BLM Battle Mountain District recognizes the current noxious weed list designated by the State of Nevada Department of Agriculture (NDOA) statute, found in NAC 555.010. Currently the list contains 47 noxious weed species. When considering whether to add a species to the list, the NDOA makes a recommendation after consulting with outside experts and a panel comprising Nevada Weed Action Committee members. Per NAC 555.005, if a species is found probable to be "detrimental or destructive and difficult to control or eradicate", the NDOA, with approval of the Board of Agriculture, designates the species as a noxious weed. The species is then added to the noxious weed list in NAC 555.010. Upon listing, the NDOA will also assign a rating of "A", "B", or "C" to the species. The rating reflects the NDOA view of the statewide importance of the noxious weed, the likelihood that eradication or control efforts would be successful, and the present distribution of noxious weeds within the state.

An “invasive species” is defined as a species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (EO 13112, signed February 3, 1999).

The BLM’s policy relating to the management and coordination of noxious weeds and invasive plant species is set forth in the BLM Manual 9015 – Integrated Weed Management. The BLM’s primary focus is providing adequate capability to detect and treat smaller weed infestations before they have a chance to spread. Noxious weed control is based on a program of prevention, early detection, and rapid response.

Noxious weeds, invasive and non-native species are known to exist on public lands within the project area and are a concern for site function and productivity, threatening biodiversity, habitat quality and ecosystem stability. Guidelines for managing noxious weeds, invasive and non-native species in the Argenta Allotment

have been followed in accordance with the BLM District Integrated Weed Management Plan.

Several species of noxious weeds and invasive species have been documented within the project area. Noxious weeds within the project area include hoary cress (*Cardaria draba*), scotch thistle (*Onopordum acanthium*), musk thistle (*Carduus nutans*) and saltcedar (*Tamarix* spp.). Invasive and non-native species include bull thistle (*Cirsium vulgare*), pale madwort (*Alyssum alyssoides*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), tansy mustard (*Descurainia pimmata*), halogeton (*Halogeton glomeratus*), Russian thistle (*Salsola tragus*) and cheatgrass (*Bromus tectorum*).

Environmental Consequences

Proposed Action

Under the proposed action there is a low potential for promoting the spread and establishment of noxious weeds, invasive and non-native species. Surface ground disturbance during fence construction may introduce or spread weeds already present in the project area. Additionally, vehicles present in the area temporarily during fence construction may facilitate the spread and establishment of weeds. Any equipment or vehicles exposed to weed infestations or arriving on site carrying soil or plant debris would be cleaned before moving into or within the project area to help control the spread of weed infestations along roadsides and other areas.

The proposed action would promote improved condition of plant communities and reduce the vulnerability of the project area to weed infestations by excluding livestock from grazing and ground disturbance. Maintaining healthy rangeland will support native shrubs, understory grasses and forbs that remain intact and compete with the invasive annual and perennial species. When the recovery of drought stressed vegetation begins to improve and become more resilient, native vegetation will better compete and help protect against noxious weeds, invasive and non-native species.

Considering the size of the proposed action, impacts related to noxious weeds, invasive and non-native species would be negligible.

Water Gap Alternative

The Water Gap Alternative would be similar to the proposed action, with the exception of installing two water gaps in the Fire Creek fence exlosure to allow livestock access to the stream. Under the Water Gap Alternative there would be a slight increase in ground disturbance that may facilitate the spread and establishment of additional weeds. As with the proposed action any equipment or vehicles exposed to weed infestations or arriving on site carrying soil or plant debris would be cleaned before moving into or within the project area to help control the spread of weed infestations along roadsides and other areas.

No Action Alternative

Under the No Action Alternative, no fences would be constructed and there would be no direct impacts expected. However, the continuation of concentrated use by livestock in the riparian areas would continue. The incremental impacts from noxious weeds, invasive and non-native species as a result of the No Action Alternative, in combination with past and present actions and RFFAs, are expected to be minimal.

3.6 Water Resources and Water Quality

Affected Environment

The Clean Water Act (CWA) is the primary law protecting waters of the US. Section 404 of the CWA (33 USC 1344) prevents the discharge of dredged or fill material into waters of the US without a permit from the US Army Corps of Engineers. The Safe Drinking Water Act (SDWA) sets standards for public water systems in the US for many contaminants. SDWA also sets secondary standards for other pollutants that may cause cosmetic effects, but are not enforceable. The State of Nevada however has more stringent guidelines and enforces the EPA's secondary water standards. The Nevada Bureau of Water Quality Planning has water quality standards for toxic materials applicable to designated waters and livestock water standards (NAC 445A.1236). No data was available on these streams regarding Section 303(d) (water quality standards) of the Clean Water Act 1977.

The three project areas lie in the Humboldt River Basin (NDWR 1992). Each stream segment is located on BLM land. Klondex Gold & Silver Mining Co. holds several water rights for ground water in the in the Fire Creek Project area. Julian Tomeara Ranches Inc. holds a water right (V07579) that covers the North Fork of Mill Creek project area. The water right is located in Mills Creek[1]in a natural channel in the Sections of Township 29N & 30N and Ranges 44E &45E M.D.M. The water right is used for stock watering for up to 300 cattle, 20 horses, and 2,000 sheep. The water right states that the calculated diversion of water is 0.022 cubic feet per second (CFS), which equates to approximately 14,220 gallons per day. The period of use for the water right is from January 1 through December 31. No water discharge data is available for springs North Fork of Mill Creek. Ferris Creek currently has no water rights associated with it.

[1] V07579 names the water right as Mills Creek, which is synonymous with North Fork of Mill Creek.

Environmental Consequences

Proposed Action

The proposed action would have positive impacts to water resources in the project area. In each stream segment the water quality would likely improve from being fenced off and excluding livestock. Practices that improve livestock distribution and attract livestock away from stream sides are recommended in meeting water quality standards (Tiedemann et al. 1987). Proper management practices on degraded riparian areas allows vegetation and succession to start and the riparian system begin to function properly as the benefits begin to reappear, including improved water quality (Elmore and Breschhta 1987). Livestock would not be able to trample the area and defecate directly in the spring water, thus improving water quality. The exclusionary fencing would enable riparian vegetation near the streams to recover. Over time, this would reduce soil compaction and erosion, increase porosity, and reduce stream bank alteration. The increased porosity and reduced surficial drainage that is expected to occur after livestock exclusion would increase the soil's storage capacity and help to stabilize flows in the stream.

In the short-term, erosion and soil compaction associated with the land disturbance in the upland and riparian zones may increase from construction activities. However, the disturbance should revegetate and reverse the adverse effects caused by project construction. It is expected that riparian health and water quality would improve.

Erosion and soil compaction around the fence lines would likely increase as trailing of livestock occurs (Swanson Wyman and Evans 2015). However, because riparian areas are significantly more productive than the upland sites where the fence lines would be located and would benefit a greater area than trailing would negatively impact, the net effect is expected to be positive for the ecosystem, livestock, and wildlife. Trailing impacts would also be mitigated by the placing the fences mainly along roads where disturbance already exists; or along steep slopes where livestock are less likely to traverse (Holechek 1988).

The current water right on the North Fork of Mill Creek allocates that 300 cattle, 20 horses, 2,000 sheep can use the water right. Water requirements and intake by cattle can vary based upon a number of variables (size of animal, lactating, temperature, etc.) (Smith, Leung and Love 1986). BLM specialists estimated approximately 15 gal/day for the use within the project area. According to these estimates 4,500 gallons of water would be used for cattle, 300 gallons of water for horses, and approximately 3,000 gallons of water per day for sheep, totaling 7,800 gallons of water per day for the stream. Water would continue to be available at the water gap as well as other portions of the stream outside of the exclosure on both public and private lands.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek Exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The addition of the Fire Creek water gaps would allow livestock to access Fire Creek for two 20-foot sections. This alternative would have the same positive effects to water quality that the proposed action has. However those benefits would be less; due to the increased livestock access to the stream. Fence design and rock armoring of the stream bank would limit livestock impacts on water quality, by limiting hoof action and livestock excrement from the stream bank and channel.

No Action Alternative

The No Action Alternative would result in continued conditions and trends of the three stream segments resulting from livestock use. The current conditions allow livestock to traverse the stream segments, which results in impacts to water quality through trampling. This trampling causes erosion and sedimentation of the waters. Water quality is also impacted by livestock defecating directly in the water. Even with modified management practices, water quality in the stream segments would likely continue to degrade under the No Action Alternative.

3.7 Wetlands and Riparian Zones

Affected Environment

Both Federal and State laws and regulations protect waters of the state, which includes wetlands. The Clean Water Act (CWA) is the primary law protecting US waters. Section 404 of the CWA (33 USC 1344) prevents the discharge of dredged or fill material into waters of the US without a permit from the USACE. EO 11990 (Protection of Wetlands) requires Federal agencies to take action to minimize the destruction, loss or degradation of wetlands, and to conserve and enhance the beneficial values of wetlands.

National Wetland Inventory (NWI) data was viewed in GIS and it was found that no wetland areas were identified within the project areas. The NWI is not a comprehensive survey of wetlands and in Nevada focus primarily on the larger systems, typically in the valleys. Thus, small isolated wetlands may be present, but have not been mapped.

Riparian areas act as a transition zone around bodies of water from upland areas to aquatic zones. The riparian areas surrounding the stream segments are degraded due to current management practices which have compacted the soils around the streams. The saturated soils surrounding the springs have been compacted from livestock trampling to the point that vegetation reestablishment is reduced. This accelerated runoff has decreased the spatial extent of the saturated soils and

corresponding riparian vegetation. The condition of the riparian areas surrounding the streams is trending downwards as soil erosion has increased due to insufficient vegetation to bind the soil and slow runoff. The loss of organic rich soil has decreased the long-term potential of the site. In addition multiple head cuts on Fire Creek continue to impact stream conditions.

Within each of the proposed exclosures, the stream is perennial. According to the Rosgen Stream Class System, Fire Creek is classified as a B4, Ferris Creek is classified as a G5, and North Fork of Mill Creek as a B3a.[2]

A Proper Functioning Condition (PFC) assessment on Fire Creek in 2013 showed the segment as non-functional and therefore would not meet the Standards for Rangeland Health, which is PFC. Of the seventeen indicators on the PFC assessment for the lotic sections, three were not applicable, five were positive, and nine were negative. The field notes indicated a low abundance of stabilizing species, numerous headcuts that were actively migrating and livestock trampling having widened stream channels. The banks were mostly bare dirt and significant sloughing documented.

Ferris Creek was assessed for PFC in 2005 and was functional at risk with a downward trend and therefore also would not meet the Standards for Rangeland Health. Of the seventeen indicators on the PFC assessment for the lotic sections, one was not applicable, eleven were positive, and five were negative. The field notes indicated that there was significant bank shearing, inadequate vegetation along banks, the riparian zone was confined by down cutting, and the woody species were in poor vigor.

Portions of the North Fork of Mill Creek within the project area was assessed for PFC in 2005 showed lotic sections as functional at risk with a downward trend and lentic sections as non-functional with a downward trend; therefore both would not meet the Standards for Rangeland Health. Of the seventeen indicators on the PFC assessment for the lotic sections, two were not applicable, thirteen were positive, and two were negative. The field notes indicated excessive bank shearing along this reach. Of the twenty indicators on the PFC assessment for the lentic three were not applicable, fifteen were positive, and two were negative. Field notes indicated that the wetland area was shrinking from dewatering and surface disturbance and flow patterns were altered by hoof action from livestock and vehicle travel.

Environmental Consequences

Proposed Action

The proposed action would fence off the three stream segments aiming to restore the streams by eliminating livestock access and subsequent trampling, over-utilization, and erosion. Removing livestock from the streams, by including

[2] http://cfpub.epa.gov/watertrain/moduleFrame.cfm?parent_object_id=1199

exclusionary fencing, would allow the streams and their corresponding riparian area to regain PFC by increasing the riparian extent, increasing soil water storage, biological integrity, and ecological value. Maintaining proper amounts of herbaceous vegetation is a critical part of increasing sediment deposition and enhancing channel restoration in small stream systems (Clary et al. 1996). Proper management practices on degraded riparian areas vegetation and succession starts and the riparian system begins to function properly the benefits begin to reappear, including more stable stream channels, a shift towards a more perennial stream flow and reduced flood peaks (Elmore and Breschhta 1987). Placing the proposed exclusionary fences beyond the current riparian extent would allow for future expansion of the riparian areas as the soils rehydrate and the riparian vegetation returns and increases.

In the short-term, erosion and soil compaction associated with the land disturbance in the riparian zone may increase from construction activities. However, the disturbance would revegetate and reverse the adverse effects caused by project construction. It is expected that riparian health would improve.

The majority of Fire Creek on public land would be exclosed from livestock use. Distribution changes of livestock outside of the exclosure would not affect any public riparian resources in the Fire Creek Use Area. There are no other known springs on or water on public land in the Fire Creek Use Area other than Fire Creek. Water for livestock would still be available on public and private land outside of the exclosure. In addition the permittee that primarily uses this use area is currently working on developing additional water sources in the Fire Creek Use Area on private lands. Any changes in upland utilization due to the loss of available forage would be minimal. The exclosure would be 21.6 acres out of 19,317 acres for the total use area making up about 0.1% of the Fire Creek Use Area (see Map at 2.3.1).

The South Maysville Use Area, containing Ferris Creek is comprised of public and private land. The Ferris Creek exclosure would exclude livestock on the public portion of the use area. The remaining unfenced segments in the upper portion of Ferris Creek on public land are steep, rocky and intermittent. The lower portion of Ferris Creek in the Indian Creek use area is separated by an existing drift fence and no changes to current livestock impacts on the lower sections would occur. Due to the small size of this exclosure cattle distribution and impacts would likely not change at this location outside of the exclosure. Any changes in upland utilization due to the loss of available forage would be minimal. The exclosure would be 21.3 acres out of 15,433 acres, which is about 0.1% of the South Maysville Use Area. Water for livestock would be available outside of the exclosure on both public and private lands (see Map at 2.3.2).

The proposed North Fork of Mill Creek exclosure is in the upper segment of the stream which is the most sensitive to change from management practices. The lower segments of North Fork of Mill Creek have a steeper gradient, banks are more rock dominant and the vegetation is more of woody dominated (Willow and Aspen). Each of these attributes on the lower segments of North Fork of Mill Creek lead to streams being more resilient to the impacts of livestock grazing and other

management activities. The same level of livestock impacts on the lower segments have not been observed and changes in distribution from the installation of the proposed exclosure would not significantly change livestock impacts outside of the exclosure. Any changes in upland utilization due to the loss of available forage would be minimal. The exclosure would be 8.4 acres out of 4,915 acres for the total use area making up about 0.2% of the North Fork of Mill Creek Use Area. Water for livestock would be available outside of the exclosure on both public and private lands. A water gap will also be left at the location where the current two-track road crosses the stream, leaving water available for livestock use at that location (see Map at 2.3.3).

This alternative is expected to have an overall net positive effect on streams within the exclosures by eliminating livestock use within the exclosures, allowing for streams to recover within the exclosures. Changes to riparian areas use outside of the exclosures would be expected to be minimal and impacts and trends would remain similar to current management practices.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek Exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The addition of the Fire Creek water gaps would allow livestock to access Fire Creek for two 20-foot sections. This alternative would have the same positive effects to wetland and riparian zones as the proposed action. However, those benefits would be less due to the increased livestock access to the stream and riparian vegetation within the gaps. Riparian vegetation at the gaps would likely be heavily impacted by livestock concentration. Fence design and rock armoring of the stream bank would limit livestock impacts on wetlands and riparian zones, by limiting hoof action from the stream bank and channel.

No Action Alternative

The No Action Alternative would not result in the construction of the exclosure fences. Conditions in the Argenta Allotment would remain the same as the current management. This Alternative would continue to limit the ability of these riparian areas to recover from the current impacts of livestock grazing on the stream sections.

3.8 Grazing Management

Affected Environment

The project area is located within the Fire Creek, South Maysville and North Fork Use Areas of the Argenta Allotment on BLM administered lands; adjacent private lands are near the project area (Map 2.3). The Argenta Allotment consists of approximately 331,518 total acres of which 141,689 acres are administered by the

BLM. 18,025 AUMs associated with the public lands are currently permitted between six different permittees in the Argenta Allotment. Livestock grazing is permitted year round (March 1 – February 28) on the allotment though each permit is not necessarily a year round permit. Cattle, sheep and horses are each permitted to graze on the Argenta Allotment. The following table shows the permitted livestock use for the Argenta Allotment:

Table 3.8 Permitted Livestock Use on the Argenta Allotment

Permittee	Auth. #	Number	Kind	Begin	End	PL%	AUMs
Chiara Ranch	2706006	183	Cattle	3/1	11/30	61	1009
		15	Cattle	6/1	6/30	61	9
C Ranches	2702926*	64	Cattle	3/1	2/28	56	430
	2703274	308	Cattle	3/1	3/31	100	314
		206	Cattle	11/1	2/28	100	813
Elko Land and Livestock Company	2701589	159	Cattle	11/15	2/28	70	388
		159	Cattle	3/1	3/1	70	4
Filippini Jr. Henry	2700159	48	Cattle	3/16	12/31	100	459
		1	Cattle	3/16	4/16	100	1
Julian Tomera Ranches Inc.	2706005	2106	Sheep	2/16	2/28	100	180
		1490	Sheep	4/1	9/30	100	1793
	2706028	1760	Cattle	3/1	2/28	56	11827
		1	Cattle	3/1	4/30	56	1
		11	Horses	3/1	12/31	56	62
Rand Properties	2703388	30	Horses	3/1	12/30	100	301

* Lease has expired and is in process to be renewed or returned to Julian Tomera Ranches Inc. Permit

The Fire Creek exclosure is located in the Fire Creek Use Area and is primarily used by Henry Filippini Jr. The Fire Creek Use Area is unfenced from other use areas and livestock of other permittees occasionally drift into the use area. The portion of the project area in Ferris Creek is located in the South Maysville Use Area and is primarily used by Julian Tomera Ranches Inc. The Maysville South Use Area is also unfenced and occasional drift from the other permittees' livestock occurs in the use area. The portion of the project area in the North Fork of Mill Creek is located in the North Fork Use Area and is primarily used in common by Julian Tomera Ranches Inc. and Chiara Ranch. Like the other two use areas the North Fork Use Area is unfenced; unlike the other two use areas drift from other permittees livestock has not been observed/recorded.

Environmental Consequences

Proposed Action

The proposed action would completely remove the impacts of livestock grazing on the stream segments within the exclosures. The proposed action would impact grazing distribution outside of the proposed exclosures; however these impacts

would be expected to be minimal and/or localized. Increased grazing pressures outside of exclosures around the water sources could lead to negative impacts through heavier-utilization of these riparian areas, increased localized soil compaction, increased runoff and erosion, and increased probability of weed infestation. These impacts would be expected to be minimal on BLM administered lands due to the exclosures being placed on the most sensitive segments of their respective streams. Impacts from increased livestock trailing along new fence lines may occur. These impacts are typically small and would be further mitigated by much of the fence lines following existing roads, loafing areas and/or traversing steeper slopes where disturbance already exists or livestock typically avoid.

The majority of Fire Creek on BLM administered land would be exclosed from livestock use. Distribution changes of livestock outside of the exclosure would not significantly change current management of public riparian resources in the Fire Creek Use Area. There are no other known springs on streams on public land in the Fire Creek Use Area. Water for livestock would still be available on public and private land outside of the exclosure. In addition, the permittee that primarily uses this use area is currently working on developing additional water sources in the Fire Creek Use Area on private lands. Any changes in upland utilization due to the loss of available forage would be minimal. The exclosure would be 21.6 acres out of 19,317 acres for the total use area making up about 0.1% of the Fire Creek Use Area.

The South Maysville Use Area, containing Ferris Creek, is comprised of public and private land. The Ferris Creek exclosure would exclude livestock on the public portion of the use area. The remaining unfenced segments in the upper portion of Ferris Creek on public land are steep, rocky and intermittent. The lower portion of Ferris Creek in the Indian Creek use area is separated by an existing drift fence and no changes to current livestock impacts on the lower segments would occur. Due to the small size of this exclosure cattle distribution and impacts would likely not change at this location outside of the exclosure. Any changes in upland utilization due to the loss of available forage would be minimal. The exclosure would be 21.3 acres out of 15,433 acres for the total use area making up about 0.1% of the Fire Creek Use Area. Water for livestock would be available outside of the exclosure on both public and private lands.

The upper segment is the most sensitive segment of the North Fork of Mill Creek and is proposed to be fenced. The lower segments of North Fork of Mill Creek have a steeper gradient, banks are more rock dominant and the vegetation is more woody dominated (Willow and Aspen). Each of these attributes on the lower segments lead to the stream being more resilient to the potential impacts of livestock grazing. The same level of livestock impacts on the lower segments have not been observed and chances in distribution from the installation of the proposed exclosure would not significantly change livestock impacts outside of the exclosure. Any changes in upland utilization due to the loss of available forage would be minimal. The exclosure would be 8.4 acres out of 4.915 acres for the total use area making up about 0.2% of the North Fork of Mill Creek Use Area. Water for livestock would be available outside of the exclosure on both public and private lands. A

water gap would also be left at the location where the current two-track road crosses the stream, leaving water available for livestock use at that location.

This alternative is expected to have an overall net positive effect on streams within the exclosures by eliminating livestock use. Changes to livestock use outside of the exclosures would be expected to be minimal.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek Exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The addition of the Fire Creek water gaps would allow livestock to access Fire Creek for two 20-foot sections. This alternative would have the similar effects to grazing management as the proposed action. However, the benefits to grazing management would be increased due to the increased livestock access to water. Additionally, the ability to use gates or letdown fences would allow the permittee to control livestock access to the water gaps increasing their ability to control livestock use in the use area. As access and control of water availability increases it increases livestock operators ability to control livestock as well as improve livestock distribution (Holechek, Pieper, Herbel 2011). Livestock would concentrate near gaps and livestock impacts would increase. Fence design and rock armoring of stream banks would mitigate the increased impacts of grazing near the gaps.

No Action Alternative

The No Action Alternative would not allow for construction of the exclosure fences. Condition trends in the Argenta Allotment would remain unchanged under the current management. This Alternative would continue to limit the ability of these riparian areas to recover from the current impacts of livestock grazing on the stream sections.

3.9 Recreation

Affected Environment

The Project Area is relatively isolated and undeveloped. There are no recreation facilities within the project area and vicinity, and in this part of Nevada, developed recreational opportunities are relatively sparse. In the Project Area, opportunities for public recreation are considered as dispersed in nature and primarily including off-highway vehicle use, hunting and camping, mountain biking, horseback riding, sightseeing, outdoor photography, nature study, wildlife viewing, bird watching and rock collecting may also occur.

Environmental Consequences

Proposed Action

There would be negligible impacts to recreational opportunities due to the proposed action. The Fire Creek exclosure would block motorized access to a spring by fencing off 0.32 miles of unauthorized road. This elimination of motorized traffic would be beneficial to the springs and stimulate regeneration of native plant communities from the lack of soil compaction and other perturbations to the landscape. Healthy plant communities can lure in wildlife and increase the likelihood of successful hunting opportunities. Overall, the 51.3 acre footprint (area of combined exclosures) of the riparian exclosures would have negligible impact to recreation within the area.

Water Gap Alternative

There would be minor impacts to recreation following the Water Gap Alternative. The alternative would incorporate two water gaps into the Fire Creek exclosure to allow minimal access to the stream by grazing livestock. All other aspects of the project would remain the same. Fencing off the riparian areas would still impede motorized traffic to the streams. Reduced motorized traffic and exclusion of livestock from riparian areas would still allow the area to recover from past disturbances.

No Action Alternative

Under the No Action Alternative, the BLM would not approve the proposed action. The riparian areas would continue to be degraded from overuse by livestock and motorized vehicles would continue to be able to access the spring at the Fire Creek area. The continued degradation would lead to further soil erosion from the inability of plant communities to stabilize the stream banks. This could lead to deeply incised streams and loss of ecological function. This cascading effect would reduce wildlife populations in the area and decrease hunting or other recreational opportunities.

3.10 Soils

Affected Environment

Soils are unconsolidated materials overlying bedrock or other parent material. Soils play a critical role in both the natural and human environment. Soil structure, elasticity, strength, shrink-swell potential, and erodability determine the ground's ability to support vegetation, man-made conservation practices, structures, and facilities. Soils are typically described in terms of complex type, slope, physical characteristics and relative compatibility or constraining properties with regard to types of land use and/or construction activities.

Fire Creek

The Fire Creek project area is comprised of one major soil composition according to the Natural Resources Conservation Service (NRCS) (NRCS 2013, NRCS 1980). The project area lies in Walti-Cleavage-Softscrabble (3127) association (WCS) and is close to contacting the Trunk-Dewar-Stingdorn (1085) association (TDS).

WCS soils are primarily found in mountains in elevations of 6,500 to 7,900 feet with slopes between 2 and 35%. The project area falls primarily within inclusion 2 which is a Cumulic Haplaquolls which makes up approximately 4% of the WCS association. Its position on the landscape is described as adjacent to seeps, springs and drainages. They are somewhat poorly drained soils. Walti and Softscrabble soils are on the sloped fringes of the project areas and are likely a minor component of the project area. Combined they do make up about 60% of the total association. Both have a severe erodability rating to water and a slight erodability rating for wind.

Ferris Creek

The Ferris Creek project area is comprised of one major soil composition according to the NRCS (NRCS 2013, NRCS 1980). The project area lies in Welch loam (4140) association (WL) and is close to contacting the Robson-Wiskan (3150) association (RW) and the Wieland-Allor (1670) association (WA).

WL soils are primarily found on inset fans in elevations of 6,500 to 8,200 feet with slopes between 2 and 8%. The WL association has one major component Welch soil that makes up approximately 90% of the association. The remaining 10% is made up of two inclusions. Inclusion 1 is located on the toe slopes adjacent to inset fans and inclusion 2 is located on unentrenched smooth flood plains of inset fans. Both have a slight risk of erodability rating to wind and water.

North Fork of Mill Creek

The North Fork of Mill Creek project area is comprised of two major soil compositions according to the NRCS (NRCS 2013, NRCS 1980). The project area lies in Hapgood-Tusel-Winada (466) association (HTW) and the Sumine-Winada Variant-Pernty (1429) association (SWVP).

HTW soils are primarily found in mountains in elevations of 7,200 to 8,000 feet with slopes between 30 and 75%. There are three major soil types that make up 90% of this association: Hapgood very gravely loam, Tusel very gravely loam, and Winada gravely loam. The other 10% is made up of three separate inclusions which are not present within the project area. Erodability from water ranges from moderate to severe and slight erodability rating for wind.

SWVP soils are primarily found in mountains in elevations of 6,500 to 9,200 feet with slopes between 30 and 50%. There are also three major soil types that make up 90% of this association: Sumine very gravely loam, Winada Variant very fine sandy loam and Pernty very gravelly sandy loam. The other 10% is made up of two separate inclusions which are not present within the project area. Erodability from water is moderate and slight erodability for wind.

Environmental Consequences

Proposed Action

The proposed action is estimated to impact up to approximately 60.35 acres of soils through the introduction of equipment, construction crews, and the installation of small permanent structures. The disruption of soils will only be temporary, as the project is estimated to take two weeks. The construction crew will utilize existing roads and minimize overland travel paths to reduce the amount of new soil disturbance.

The proposed action will benefit soil health within the three project locations as well as water quality by reducing erosion and sedimentation potential. However, impacts to soils from concentrated livestock trailing along fence lines are expected. These impacts would include soil compaction, increased wind driven soil erosion as vegetation is denuded (Holechek et al. 2011; Thurow et al 1986). Increased soil erosion via water could occur during storm events in areas where vegetation has been denuded. These impacts areas along fence lines are typically small and would be further mitigated by following existing roads or traversing steeper slopes where disturbances already exist or livestock typically avoid. Additionally, it is anticipated that larger areas within the exclosures would see a reduction of soil erosion and compaction through the removal of livestock use, thus creating a net positive effect.

The proposed action would increase soil stability and water holding capacity in fenced off areas, allowing riparian vegetation to expand. The increased root structure and surface roughness would reduce future erosion and downstream sedimentation.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek Exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The addition of the Fire Creek water gaps would allow livestock to access Fire Creek for two 20-foot sections. This alternative would have the same positive effects to soils as the proposed action. However, those benefits would be less due to the increased livestock access to the streambank and smaller exclosed areas. Quantifiable information regarding the difference of impacts is not

available. Fence design and rock armoring of the stream bank would limit livestock impacts on soils, by limiting hoof action which would minimize soil erosion and compaction from the stream bank and channel. Increased use near the water gap would locally increase impacts to soils from livestock concentration.

No Action Alternative

The No Action Alternative would result in continued impacts to soils from livestock trampling of the wet soils around the streams. Livestock would continue to alter the soil health near all three stream segments.

3.11 Vegetation

Affected Environment

The project lies in the Central Nevada High Valleys ecotone in the Great Basin, which is mostly composed of rolling hills and valleys over 5,000 feet. Wyoming big sagebrush (*Artemisia tridentate var. wyomingensis)* tends to dominate flatter areas and black sage brush (*Artemisia nova)* is commonly present on alluvial fans and volcanic hills (Bryce *et al.* 2003).

Fire Creek

Upland Vegetation

The Fire Creek project area contains many native vegetation species. It is located in a South Slope 12-16" P.Z. and a Claypan 12-16" P.Z. Upland species identified during the site visits included sagebrush (*Artemisia spp*.) western wheatgrass (*Pascopyrum smithii*), Wood's rose (*Rosa woodsii*) and rabbitbrush (*Chrysothamnus sp.*). Other upland species identified during the BLM survey included, Sandberg's bluegrass (*Poa secunda*), bottlebrush squirreltail (*Elymus elymoides)*, spiny phlox (*Phlox hoodii*), longleaf phlox (*Phlox longifolia*), basin wildrye (*Leymus cinereus)*, deathcamas (*Zigadenus sp.*), cheatgrass (Bromus tectorum) and annual mustard (*lepidium spp.*). There were also noxious weeds and invasive and non-native weedy species documented, discussed in Section 3.5.

Wetland/Riparian Vegetation

Some of the species identified during 2015 Multiple Indicator Monitoring (MIM) have an Obligate Wetland, or Facultative Wetland status. Wood's rose is listed as a Facultative Upland, which indicates it's primarily found in upland habitats but can be found in wetland and riparian areas. In Fire Creek, Wood's rose is primarily found on the perimeters of wetland and riparian habitats. This species was recorded near the stream during the site visit. In addition the following species were recorded: Nebraska sedge

(*Carex nebrascensis*), artic rush (*Juncus articus*), and panicled bulrush (*Scirpus microcarpus*).

Ferris Creek

Upland Vegetation

The Ferris Creek project area contains many native vegetation species. It is located in a Loamy Bottom 8-14" P.Z., Loamy 8-10" P.Z. and a Claypan 10-12" P.Z. Upland species identified during the site visits included sagebrush and rabbitbrush. Other upland species identified during the BLM survey included, Sandberg's bluegrass, bottlebrush squirreltail, spiny phlox, longleaf phlox, cheatgrass and annual mustard. There were also weedy species documented, which are discussed in Section 3.5.

Wetland/Riparian Vegetation

Some of the species identified during 2015 MIM have an Obligate Wetland, or Facultative Wetland status. The following species were recorded: Nebraska sedge, artic rush, annual rabbitsfoot grass (*Polypogon monspeliensis*) and yellow willow (*Salix lutea*).

North Fork of Mill Creek

Upland Vegetation

The North Fork of Mill Creek project area contains many native vegetation species. It is located in a South Slope 12-16" P.Z. and a Loamy Slope 14+" P.Z. Upland species identified during the site visits included sagebrush, western wheatgrass (*Pascopyrum smithii*), Quaking Aspen (*Populus tremuloidies*) Utah Serviceberry (*Amalanchier utahensis*) and rabbitbrush. Other upland species identified during the BLM survey included, Letterman's Needle Grass (*Achnatherum lettermanii*), Mountain Brome (*Bromus marginatus*), Lupine (Lupinus spp.), bottlebrush squirreltail, spiny phlox, longleaf phlox, basin wildrye (*Leymus cinereus)*, and deathcamas (*Zigadenus sp.*).

Wetland/Riparian Vegetation

Some of the species identified during 2015 MIM have an Obligate Wetland, or Facultative Wetland status. Wood's rose is listed as a Facultative Upland, which indicates it's primarily found in upland habitats but can be found in wetland and riparian areas. In North Fork of Mill Creek, limited Wood's rose is found on the perimeters of wetland and riparian habitats. This species was observed near the stream during the site visit. In addition the following Species were recorded: creeping bentgrass (*Agrostis stolonifera*), shortawn foxtail (*Alopecurus aequalis*), smallwing sedge (*Carex microptera*), meadow barley (*Hordeum*

brachyantherum), artic rush, toad rush (*Juncus bufonius*) and swordleaf rush (*Juncus ensifolius*).

Environmental Consequences

Proposed Action

Upland Habitats

The proposed action would potentially disturb approximately 60.35 acres (this was calculated by buffering 20 feet around the proposed fencelines, including the exclosures and lay down areas) of upland and wetland/riparian vegetation. The majority of the disturbance would occur within the temporary disturbance associated with construction activity. Short term disturbance would occur as a result of overland travel, site work, and installation of the fencing. These impacts are expected to be small, where construction crews would be working. These short-term impacts would be minimized and mitigated by having construction crews use areas that are not vegetated to reduce overall disturbance, and seeding of areas impacted by these activities to re-establish vegetation. Due to the relatively small surface area disturbed by the installation of the proposed project it is proposed that revegetation of the disturbed area would consist of hand seeding and hand raking. The seed mixture and time of year proposed for the reseeding would be approved by the BLM.

Long-term disturbance would result from trampling of vegetation due to increased trailing along the fence lines by livestock. These impacts are typically small and would be further mitigated by placing most of the fence lines along existing roads, loafing areas or traversing steeper slopes where disturbances already exist or livestock typically avoid. The area inside the exclosure that would benefit from removal of livestock use would be larger than any areas negatively impacted due to trailing along fence lines. The placement of the fencing around the streams would limit activity in these areas as long as the fencing remains.

Wetland/Riparian Habitats

Existing riparian vegetation is limited in the vicinity of the streams due to trampling of soils and utilization of vegetation by livestock. During construction, some vegetation would be impacted by installation of the fencing, but due to past livestock activity this will result in minimal impact because workers will stay on previously disturbed ground to the extent possible. The installation of the exclusionary fence would be to prevent livestock from accessing each stream segment. This would allow native riparian and wetland vegetation, as well as upland vegetation on the spring fringes, to re-establish and reach its potential. Riparian vegetation is expected to improve overtime as a result of restricting livestock access to the stream segments. As vegetation growth recovers

around the stream segments, evapotranspiration could increase through greater surface area and increased plant vegetation. However, as vegetation stabilizes the soils, water would travel through the system much more slowly (subsurface vs. overland), increasing the amount of water being stored in the soils. Overtime, this would expand the extent of the riparian area and increase the frequency and composition of riparian vegetation. The project would not remove the current road impacts that to the adjacent spring and at the stream crossing, but the removal of livestock impacts from the adjacent spring would result in a net gain for the stream health. With proper management practices on degraded riparian vegetation, succession would start and the riparian system would begin to function properly and the benefits would begin to reappear (Elmore and Breschhta 1987).

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The addition of the Fire Creek water gaps would allow livestock to access Fire Creek for two 20-foot sections. This alternative would have the same positive effects to vegetation as the proposed action. However, those benefits would be less due to the increased livestock access to the streambank and smaller exclosed areas. Quantifiable information regarding the difference of impacts is not available. Increased use near the water gap would locally increase livestock impacts on vegetation. This could lead to areas at the water gap denuded of vegetation.

No Action Alternative

Under the No Action Alternative vegetation degradation around the three stream segments from livestock trampling and utilization would continue. Current vegetation trends would continue.

3.12 Visual Resources

Affected Environment

Scenic quality is a measurement of visual appeal of a parcel of land. Section 102(a) of FLPMA
sited importance on the protection of the quality of the scenic resources on public lands. Section
101(b) of NEPA of 1969 required that measurements to be taken to ensure that aesthetically pleasing surroundings be retained for all Americans. To ensure that these objectives are met, the BLM devised the Visual Resource Management (VRM) System. The VRM system provides a means to identify visual values, establish objectives for managing these values, and provide information to evaluate the visual effects of proposed projects. The inventory of visual values combines

evaluations of scenic quality, sensitive levels, and distance zones to establish visual resource inventory classes, which are "informal in nature and provide basis for considering visual values in the land use planning process. They do not establish management direction and should not be used as a basis for constraining or limiting surface disturbing activities" (BLM 1986). VRM classes are typically assigned to public land units through the BLM's land use planning process. One of four VRM classes is assigned to each unit of public lands. The specific objectives of each VRM class are presented in Table 3.12. The project area lies completely within Class IV management areas.

Table 3.12 BLM Visual Resources Management Classes Description

Class	Description
I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any change must repeat the basis element of form, line, color, and texture found in the predominate natural features of the characteristic landscape.
III	The objective of this class is partially retaining the existing character of the landscape. The level of change of character should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
IV	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may dominate the view and be the major focus of the viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.
Source: BLM 1986	

Environmental Consequences

Proposed Action

The exclosures would only have a small impact to the landscape due to their low profile and remote location. Fencing off the riparian area would likely increase the health and vitality of the area from the decreased disturbance to the landscape from livestock. These changes to the landscape would lead to a more visually appealing area from the reestablishment of native vegetation.

Water Gap

This alternative would have the same effects on visual resources as the proposed action.

No Action

Under the No-Action Alternative, the BLM would not approve the proposed action. The project area would continue its downward trend from the overuse by livestock. The continued degradation would lead to further soil erosion from the inability of plant communities to stabilize the stream banks. This continued degradation to the streams would lead to reduced visual resources within the area.

3.13 Wildlife

Regulatory Framework

Wildlife and fish resources and their habitat on public lands are managed cooperatively by the BLM and the Nevada Department of Wildlife (NDOW) under a Memorandum of Understanding (MOU) as established in 1971. The MOU describes the BLM's commitment to manage wildlife and fisheries resource habitat, and NDOW's role in managing populations. The ecological definition of population is a group of organisms of one species that interbreed and live in the same place at the same time. The BLM meets its obligations by managing public lands to protect and enhance food, shelter, and breeding areas for wild animals. The NDOW assures healthy wildlife numbers through a variety of management tools including wildlife and fisheries stocking programs, hunting and fishing regulations, land purchases for wildlife management, cooperative enhancement projects, and other activities.

“Migratory bird” means any bird listed in 50 CFR § 10.13. All native birds commonly found in the U.S., with the exception of native resident game birds, are protected under the Migratory Bird Treaty Act (MBTA). The MBTA prohibits the taking of migratory birds, their parts, nests, eggs, and nestlings without a permit. Executive Order 13186, signed January 10, 2001, directs federal agencies to protect migratory birds by integrating bird conservation principles, measures and practices.

The Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended, prohibits the "take" or possession of bald and golden eagles with limited exceptions. Take, as defined in the BGEPA, includes, “to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” Disturb means, “to agitate or bother a bald or golden eagle to a degree that causes or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding or sheltering behavior.”

Additional direction comes from the MOU between the BLM and the United States Fish and Wildlife Service (USFWS), signed January 17, 2010. The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between the BLM and the USFWS, in coordination with state, tribal, and local governments. The USFWS’ MOU with the BLM states, in

part, that both parties shall, as practicable, protect, restore, and conserve habitat of migratory birds; follow the USFWS Bald Eagle Management Guidelines; follow other migratory bird conservation measures as appropriate and consistent with agency missions; work collaboratively to identify and address issues that affect species of concern; promote and contribute migratory bird population and habitat data to interagency partnership databases (BLM, 2010). The MOU also commits the BLM to, among other measures, participate in planning efforts of Bird Conservation Regions and, at the project level, evaluate the effects of the BLM's actions on migratory birds during the NEPA process (BLM, 2010).

Special Status Species

The BLM's policy for management of special status species (SSS) is in the BLM Manual Section 6840 (BLM 2008b). Special status species include the following:

- Federally Threatened or Endangered Species: Any species the USFWS has listed as an endangered or threatened species under the Endangered Species Act of 1973, as amended (ESA) throughout all or a significant portion of its range;

- Proposed Threatened or Endangered Species: Any species the USFWS has proposed for listing as a federally endangered or threatened species under the ESA;

- Candidate Species: Plant and animal taxa under consideration for possible listing as threatened or endangered under the ESA;

- Delisted Species: Any species in the five years following their delisting;

- BLM Sensitive Species: Native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either: 1) there is information that a species has undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range; or 2) the species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk (BLM 2008b); and

- State of Nevada Listed Species: State-protected animals that have been determined to meet BLM's Manual 6840 policy definition.

Affected Environment

Greater Sage-Grouse

Greater Sage-Grouse, an upland game bird, is largely dependent on sagebrush for nesting and brood rearing and feed almost exclusively on sagebrush leaves during the winter. GRSG are found in 11 western states and two Canadian provinces. In Nevada, the GRSG habitat includes sagebrush, montane shrubland, and wet meadow. The greatest threats to the GRSG in Nevada are loss of habitat due to fire and piñon-juniper encroachment and a decline in habitat quality due to invasive plants and inadequate grazing management systems, which can particularly impact brood-rearing meadows (GBBO 2010). In 2010, the population in Nevada was estimated to be between 68,000 and 88,000, which represented approximately 50 percent of the global population (GBBO 2010). In 2014, the BLM closed the Argenta Allotment, located in GRSG Hunt Unit 152, due to the detrimental effects of overgrazing during the drought. The hunt unit that encompasses the Argenta Allotment has been closed to GRSG hunting and remains closed due to GRSG population decline and poor habitat condition (NDOW 2015). GRSG have specific habitat requirements to carry out their life cycle functions. Greater sage-grouse breeding habitats are defined as those where lek attendance, nesting, and early brood-rearing occur (Connelly et al. 2004).

The BLM has issued two IMs for the management of GRSG habitat, IM 2012-043, “Greater Sage-Grouse Interim Management Policies and Procedures” and IM 2012-044, “BLM National Greater Sage-Grouse Land Use Planning Strategy” (BLM 2011a and 2011b). These IMs provide the BLM with interim policies, procedures, and conservation measures to be applied to ongoing and proposed authorizations that affect GRSG. The IMs incorporate the following principles regarding GRSG habitat and exclosures:

- Protection of unfragmented habitats;
- Management of habitats to maintain, enhance, or restore conditions that meet GRSG life history needs;
- Consider deferring fence construction unless the objective is to benefit GRSG habitat, improve land health, promote successful reclamation, or provide resource protection; and
- fences posing higher risks to GRSG include those where fence densities exceed 1.6 miles of fence per section (640 acres).

To provide guidance to field offices about how to promote these principles, IM 2012-043 transmits policies and procedures that apply to ongoing and proposed BLM actions within PPH (now PHMA) and PGH (now PHMA). PHMA comprises areas that have been identified as having the highest conservation value, and GHMA comprises areas of occupied seasonal or year-round habitat outside of priority habitat.

In September 2015, the BLM issued the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including

the Greater Sage-Grouse Sub-Regions of Idaho and southwestern Montana, Nevada and Northeastern California, Oregon, and Utah, which details the GRSG habitat management plan for Nevada (2015 ROD) (BLM 2015). This document and associated mapping identifies the following four habitat management categories for GRSG:

- Sage Brush Focal Areas (SFA)
- Priority Habitat Management Areas (PHMA);
- General Habitat Management Areas (GHMA);
- Other Habitat Management Areas (OHMA)

The Management Decisions and Required Design Features (RDFs) from the GRSG ARMPA for this project, located in section 1.3 of this EA, will be implemented to protect GRSG and enhance GRSG habitat.

Fire Creek

Multiple general and focused wildlife surveys were conducted within the Fire Creek vicinity over a period of two years by Enviroscientists, Inc. (Enviroscientists, Inc. 2012 and 2013). The results of the surveys are summarized in a Baseline Biological Resources Summary Report (Rubicon Environmental Consulting, 2015). Prior to conducting the surveys, the NDOW, Nevada Natural Heritage Program (NNHP), and the USFWS were consulted in 2012 and 2013 for any information regarding threatened and endangered species, SSS, and general wildlife that occur within the project area. Further supporting documentation for the proposed exclosure is the Fire Creek Mine 2015 Draft Environmental Assessment (Klondex 2015) for the wildlife cumulative effects boundary and analysis.

The NDOW identified two known GRSG lek within four miles of Fire Creek and two hawk nests, three eagle nests, one falcon nest, and two owl nests in the vicinity of Fire Creek. The NDOW also identified mule deer (*Odocoileus hemionus*) and pronghorn antelope (*Antilocapra americana*) habitat. The NNHP determined that no known sensitive species populations occur within the vicinity of Fire Creek. However, the NNHP did specify that potential habitat within the Fire Creek area may be available for the pygmy rabbit (*Brachylagus idahoensis*), which is a Nevada BLM sensitive species.

The USFWS determined that two threatened, endangered, or candidate species may be present in the Project Area. These two species are Lahontan cutthroat trout (*Oncorhynchus clarkii* ssp. *henshawi*), a threatened species, and Greater Sage-Grouse (*Centrocercus urophasianus*), a Candidate species. No Lahontan cutthroat trout habitat is present within the Fire Creek portion of the project area and GRSG is addressed as a Nevada BLM special status species.

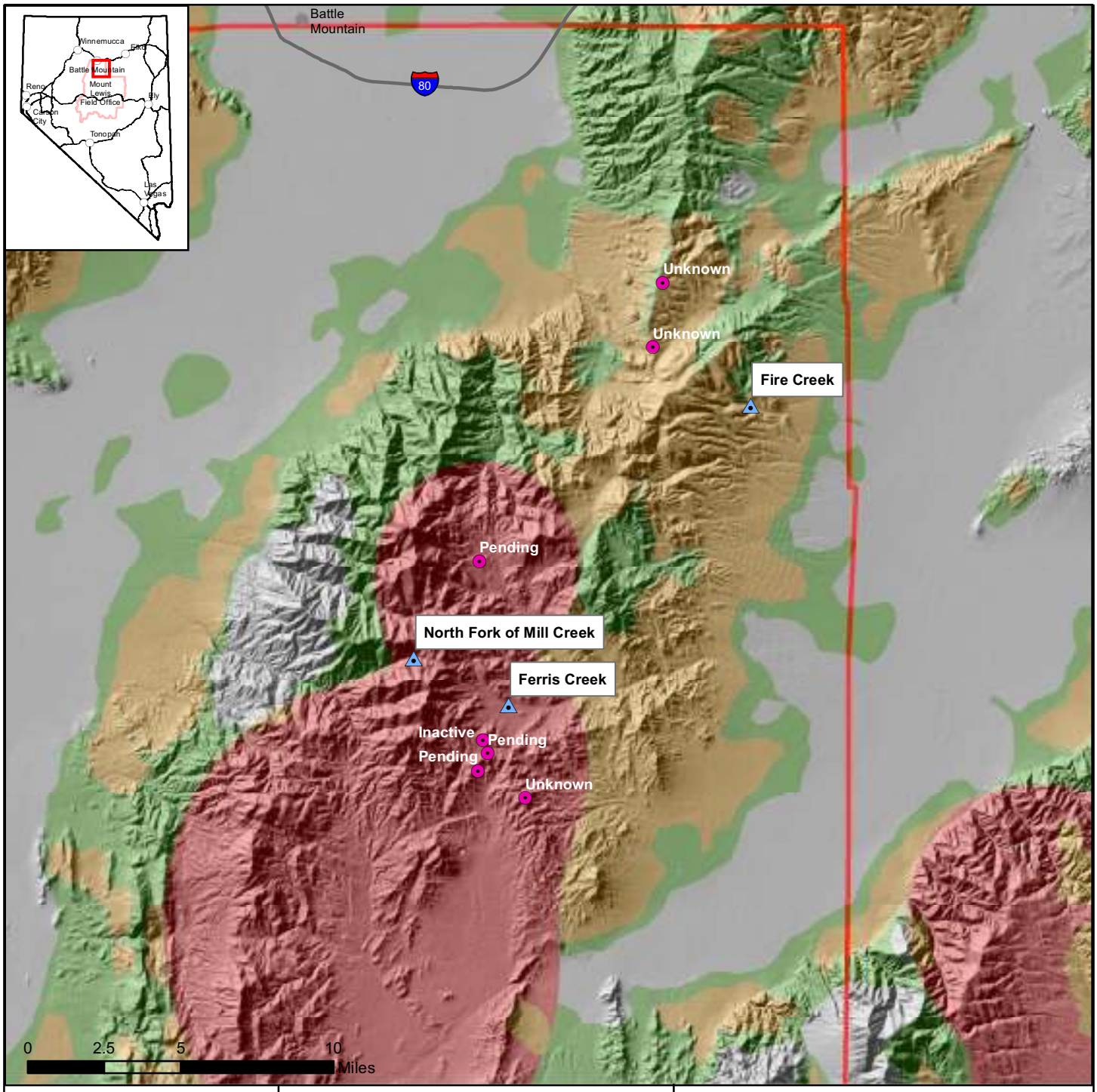
Special Status Species

To further support the preparation of this EA, the USFWS and the NDOW were contacted in 2015 to obtain a list of threatened and endangered and sensitive species that have the potential to occur within the proposed Fire Creek exclosure. The BLM State Office was

contacted regarding the projects in GRSG PHMA and GHMA. In addition, the most recent BLM Sensitive Species List, which includes threatened and endangered species, was evaluated to determine if any species had the potential to occur within the Project Area. The USFWS indicated that Lahontan cutthroat trout, a threatened species, may be impacted by the proposed activities (USFWS 2015). However, from field surveys and local NDOW information (BLM 2015), there are no present or historic populations of Lahontan cutthroat trout that exist within the project area.

Greater Sage-Grouse

A GRSG habitat map (Map 3.13) was prepared in accordance with the new habitat management classifications per the 2015 ROD document and shows the management categories within the proposed Fire Creek exclosure site. Based on these data, there are 21 acres of GHMA being exclosed at the Fire Creek project area. PHMA is not present within or adjacent to the exclosure. NDOW has mapped and identified GRSG seasonal habitat on the landscape. Fire Creek has been mapped and identified as GRSG winter, summer, and nesting habitat. There are two unknown leks within 5 miles of Fire Creek: Horse Heaven 2 (3.5 miles away) and Horse Heaven 1 (4.7 miles away). Although NDOW has these two leks currently categorized as unknown, Robison Wildlife Consulting (2015) surveyed both in March of 2015 and counted two GRSG males in attendance at the Horse Heaven 1 lek and zero GRSG at the Horse Heaven 2 lek. Robison Wildlife Consulting (2015) further stated that 3 female GRSG were flushed about one mile from the Horse Heaven 2 lek.



- Project Areas
- Core (PPH)
- Priority (PGH)
- General (Mapped Habitat)
- Non-Habitat
- Sage Grouse Lek Status
- BLM Field Office Boundary
- Battle Mountain
- Major Road

January 15, 2016

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Greater Sage-Grouse Habitat

Map 3.13 Greater Sage-Grouse Habitat

Pygmy Rabbit

Suitable pygmy rabbit habitat consists of areas with mature big sagebrush, drainages, sagebrush draws, patches of sagebrush that appear uneven in both height and density, and areas with friable soil that allows for burrowing. Suitable pygmy rabbit habitat is not present in the Fire Creek portion of the project area. The sagebrush community lacks the necessary height and density for pygmy rabbits. Enviroscientists, Inc (2012 and 2013) conducted surveys for pygmy rabbits in the Fire Creek exclosure area to detect sign and habitat during the general wildlife surveys and no evidence of pygmy rabbits or current or past occupancy was observed.

Bats

Acoustic bat surveys were conducted along Fire Creek by Enviroscientists (2012 and 2013) using Pettersson ultrasonic detectors (Model D240X). The habitat adjacent to the proposed Fire Creek exclosure consists of desert scrub vegetation dissected by various east-west trending drainages. It is possible for bats to temporarily roost in sagebrush at night and to forage over sagebrush. The detectors were strategically placed in potential bat use areas according to topography, potential foraging habitat, and proximity to rock outcrops or other potential roosting habitat.

Based on the results of the bat surveys the following species were detected: little brown bat (*Myotis lucifugus*); long-eared myotis (*Myotis evotis*); small-footed myotis (*Myotis melanorhinus*); and western pipistrelle (*Pipistrellus hesperus*). In addition to the species detected, the following species have the potential to occur: California myotis (*Myotis californicus*); little brown bat (*Myotis lucifugus*); fringed myotis (*Myotis thysanodes*); big free-tailed bat (*Nyctinomops macrotis*); and Brazilian free-tailed bat (*Tadarida brasiliensis*). The riparian areas along the Fire Creek drainage represent potential foraging habitat, and rock crevices and outcrops represent potential roosting sites. No habitat suitable for maternal or winter roosting sites was identified near Fire Creek.

Migratory Birds

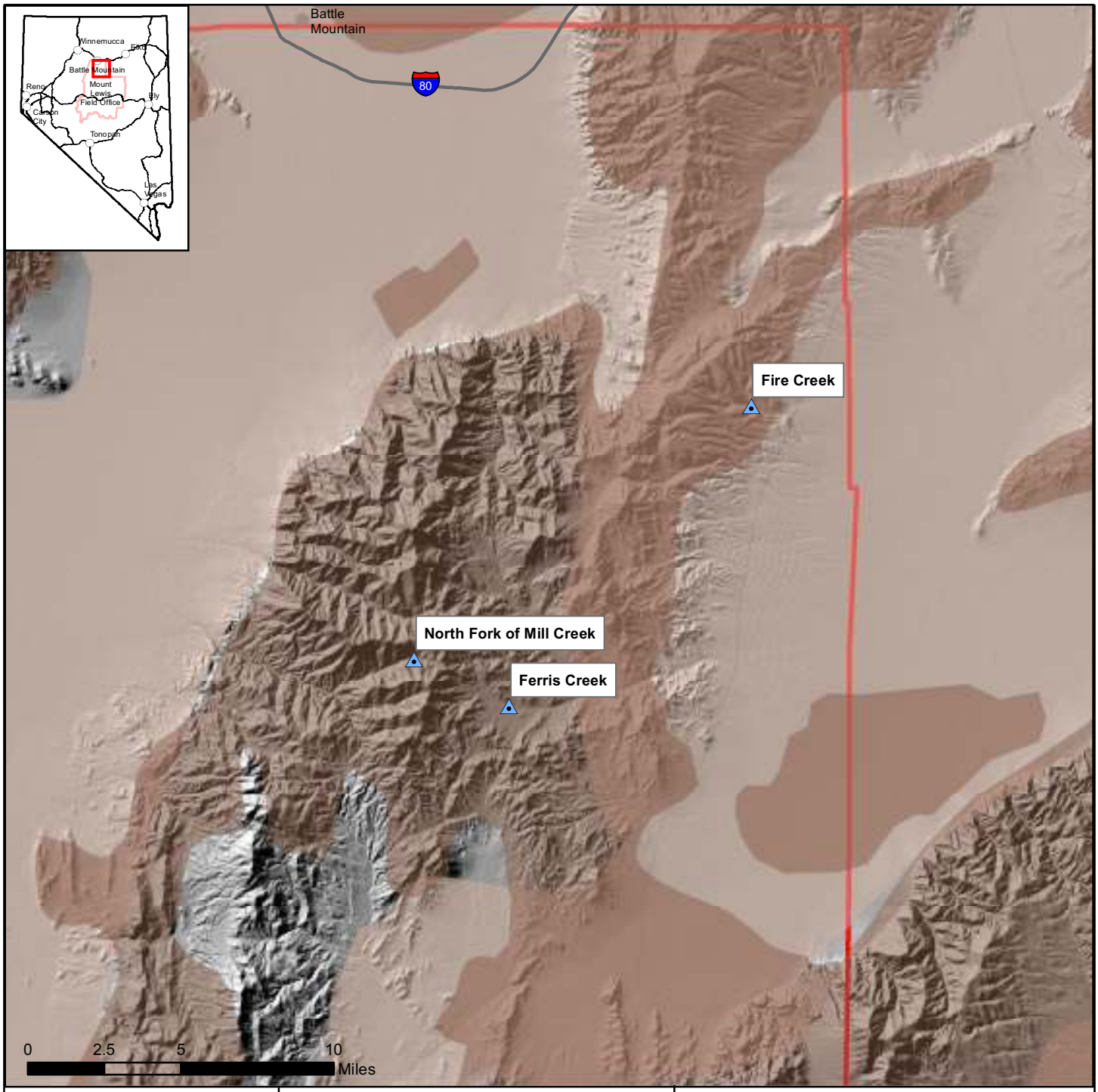
A migratory bird survey was conducted in conjunction with the general wildlife and habitat assessment in 2012 and 2013, and included the survey and evaluation of potential nesting and foraging habitats (Enviroscientists, Inc 2012 and 2013). These surveys included sunrise and sunset hours to detect periods of active avian foraging and use of the habitat in the Fire Creek portion of the project area. All avian species were recorded along with the behavior of the individuals in order to document potential breeding or nesting. Any

nest or breeding sign was documented and GPS coordinates recorded, if they had been encountered. The following migratory bird species were detected: American kestrel (*Falco sparverius*); black-billed magpie (*Pica hudsonia*); black-throated sparrow (*Amphispiza bilineata*); Brewer's blackbird (*Euphagus cyanocephalus*); Brewer's sparrow (*Spizella breweri*); brown headed cowbird (*Molothrus ater*); common nighthawk (*Chordeiles minor*); common poorwill (*Phalaenoptilus nuttallii*); common raven (*Corvus corax*); gray flycatcher (*Empidonax wrightii*); golden eagle (*Aquila chrysaetos*); horned lark (*Eremophila alpestris*); hummingbird (unknown species); killdeer (*Charadrius vociferus*); lark sparrow (*Chondestes grammacus*); Lazuli bunting (*Passerina amoena*); long-eared owl (*Asio flammeus*); Northern harrier (*Circus cyaneus*); prairie falcon (*Falco mexicanus*); red-tailed hawk (*Buteo jamaicensis*); rock wren (*Salpinctes obsoletus*); sage sparrow (*Amphispiza belli*); turkey vulture (*Cathartes aura*); and Western meadowlark (*Sturnella neglecta*).

General Wildlife

This section identifies the wildlife (mammals, upland game birds, reptiles, fish and amphibians) that have potential habitat or may occur in the Fire Creek portion of the project area. Multiple wildlife surveys were conducted between May 2012 and June 2013 to document the wildlife species utilizing the Fire Creek portion of the project area (Fire Creek Mine 2012, 2013). In 2012, a total of seven reptiles, 20 birds, and 12 mammals were directly observed or detected by tracks, scat, feathers, call, prey remains, or burrows. In 2013, a total of seven reptiles, 23 birds, and 16 mammals were directly observed or detected. The general wildlife species detected are common throughout the Great Basin Region (Fire Creek Mine biological report, 2012). Game birds detected include GRSG (e.g., scat), mourning dove (*Zenaida macroura*) and chukar (*Alectoris chukar*). GRSG and chukar were directly observed by BLM wildlife and rangeland specialists during rangeland monitoring visits.

The proposed Fire Creek exclosure was identified within the occupied distribution range of mule deer and pronghorn antelope. Both of these species were detected in the area. Mule deer scat and tracks were observed and occurred around the boundary of the proposed exclosures. Based on the habitat types and elevation, the proposed exclosure location and the surrounding area represent year-round habitat for pronghorn antelope and winter range habitat for mule deer. No other mule deer sign, such as sheds or skeletal remains, were observed. Pronghorn scat and tracks were noted in the lower elevation portions of the project area. Additional small game species observations within the project area include desert cottontail (*Sylvilagus audobonii*).



Project Areas
Mule Deer Habitat.lyr
Pronghorn.lyr
BLM Field Office Boundary
Battle Mountain
Major Road

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Mule Deer and Pronghorn Habitat

Map 3.13.1 Mule Deer and Pronghorn Habitat

Ferris Creek

A desktop analysis was performed to identify wildlife and its habitat that have the potential to exist within the Ferris Creek portion of the project area. Digital data were analyzed in GIS (ArcMap10.3) and included wildlife data provided by NDOW, the NNHP, and the USFWS IPAC. Field observations made by BLM wildlife biologists and range management specialists are also included in this analysis when available.

Special Status Species

Greater Sage-Grouse

The proposed Ferris Creek exclosure comprises approximately 21.29 acres of PHMA (Map 3.13). NDOW GIS data identifies the project site as year-round habitat for GRSG.

There are no active leks within four miles of the site. There are two leks within four miles of the site to the southwest that are designated as pending active: Utah Mine Camp 2 (1.67 miles away) and Utah Mine Camp 3 (2.32 miles away). The Utah Mine Camp 2 lek was last surveyed by NDOW in 2014 and had a maximum of twelve males in attendance. The Utah Mine Camp 3 lek was last surveyed by NDOW in 2014 and had a maximum of three males in attendance.

Pygmy Rabbit

Suitable pygmy rabbit habitat consists of areas with mature big sagebrush, drainages, sagebrush draws, patches of sagebrush that appear uneven in both height and density, and areas with friable soil that allows for burrowing.

Suitable pygmy rabbit habitat is not present in the Ferris Creek site. Where there is loamy soil suitable for burrowing, the sagebrush community lacks the necessary height and density and the remainder of the exclosure contains claypan soils unsuitable for burrowing (USDS ESD Loamy Bottom 8-14” P.Z., Claypan 10-12” P.Z., Loamy 8-10” P.Z.). No pygmy rabbits, sign, or suitable habitat was observed during field visits by BLM wildlife and range specialists.

Bats

Suitable foraging habitats for bats may be available in the proposed Ferris Creek exclosure. Riparian areas can attract foraging and drinking bats from a considerable distance. Roosting habitat may be found in the poplar trees adjacent to the proposed exclosure. It is also possible for bats to temporarily roost in sagebrush at night and to forage over sagebrush. Species that

have the potential to occur on this portion of the project area include little brown bat, long-eared myotis, small-footed myotis, western pipistrelle, California myotis, fringed myotis, big free-tailed bat, and Brazilian free-tailed bat.

Migratory Birds

The riparian and sagebrush habitats in the area of the proposed Ferris Creek exclosure have the potential to serve as suitable habitat for many migratory bird species. The poplar trees in the riparian area could serve as suitable nesting habitat for raptors such as red-tailed hawk (*Buteo jamaicensis*) and kestrel (*Falco sparverius*) and foraging habitat for species such as acorn woodpecker (*Melanerpes formicivorus*). The sagebrush habitat within and adjacent to the proposed Ferris Creek exclosure has the potential to serve as suitable nesting and foraging habitat for migratory bird species such as western scrub jay (*Aphelocoma californica*), black-billed magpie (*Pica hudsonia*), and various sparrow species (*Amphispiza* and *Spizella).*

General Wildlife

The riparian and sagebrush habitats within and adjacent to the proposed Ferris Creek exclosure have the potential to serve as habitat for many wildlife species, including desert cottontail mourning dove (*Zenaida macroura*), and other small game species. The site and surrounding area are identified as winter range habitat for mule deer. The proposed Ferris Creek exclosure does not include habitat for pronghorn antelope. GRSG and chukar were directly observed by BLM wildlife and rangeland specialists during rangeland monitoring visits.

North Fork of Mill Creek

A desktop analysis was performed to identify wildlife and its habitat that have the potential to exist within the North Fork of Mill Creek portion of the project area. Digital data were analyzed in GIS (ArcMap10.3) and included wildlife data provided by NDOW, the Nevada Natural Heritage Program (NNHP), and the USFWS IPAC. Field observations made by BLM wildlife biologists and range management specialists are also included when available.

Special Status Species

Greater Sage-Grouse

The North Fork of Mill Creek exclosure comprises approximately 8.4 acres of PHMA (Map 3.13). NDOW GIS data identifies the project as late summer and winter habitat for GRSG.
There are no active leks within four miles of the project site. There are two leks within four miles of the North Fork portion of the project area that are designated as pending active: Utah Mine Camp 2 (3.77 miles to the southeast of the site) and Indian Box

Spring (3.73 miles to the northeast of the site). The Utah Mine Camp 2 lek was last surveyed by NDOW in 2014 and had a maximum of twelve males in attendance. The Indian Box Spring lek was last surveyed by NDOW in 2014 and had a maximum of fifteen males in attendance.

Pygmy Rabbit

Suitable pygmy rabbit habitat consists of areas with mature big sagebrush, drainages, sagebrush draws, patches of sagebrush that appear uneven in both height and density, and areas with friable soil that allows for burrowing.

Suitable pygmy rabbit habitat is not present in the North Fork of Mill Creek portion of the project area. The sagebrush community lacks the necessary height and density for pygmy rabbits (USDA ESD Loamy Slope 14+" P.Z.). No pygmy rabbits, sign, or suitable habitat was observed during field visits by BLM wildlife and range specialists.

Bats

Suitable foraging habitats for bats may be available in the proposed Ferris Creek exclosure. Riparian areas can attract foraging and drinking bats from a considerable distance. Roosting habitat may be found in the aspen adjacent to the proposed exclosure. It is also possible for bats to temporarily roost in sagebrush at night and to forage over sagebrush. Species that have the potential to occur on this portion of the project area include little brown bat, long-eared myotis, small-footed myotis, western pipistrelle, California myotis, fringed myotis, big free-tailed bat, and Brazilian free-tailed bat.

Migratory Birds

The riparian and sagebrush habitats around the proposed North Fork of Mill Creek exclosure have the potential to serve as suitable habitat for many migratory bird species. The aspens adjacent to the riparian area could serve as suitable nesting habitat for raptors such as red-tailed hawk and kestrel and foraging habitat for species such as acorn woodpecker. BLM rangeland management specialists have observed an active hawk nest in the aspens. The sagebrush habitat within and adjacent to the proposed North Fork of Mill Creek exclosure has the potential to serve as suitable nesting and foraging habitat for migratory bird species species such as western scrub jay (Aphelocoma californica), black-billed magpie (Pica hudsonia), and various sparrow species

General Wildlife

The riparian and sagebrush habitats within and adjacent to the proposed North Fork of Mill Creek exclosure have the potential to

serve as habitat for many wildlife species, including desert cottontail, mourning dove ,and other small game species. The site and surrounding area are identified as winter range habitat for mule deer. The proposed North Fork of Mill Creek exclosure does not include habitat for pronghorn antelope.

Environmental Consequences

Proposed Action

The proposed action would not result in a net loss of potential sensitive species habitat and is not anticipated to contribute to a loss of viability for any particular sensitive species because the project is aimed at repairing the riparian areas. Although total area exclosed is approximately 51.3 acres, the actual disturbance footprint is less than 0.9 acres total (this was calculated by buffering the fence line by 2 feet). Disturbance decreases significantly with the more jack-rail pipe fencing used which is not considered a ground disturbing activity.

Special Status Species

Greater Sage-Grouse

Approximately 30 acres of GRSG PHMA and 21 acres of GRSG GHMA would be exclosed to livestock under the proposed action. Adding new fences can lead to further fragmentation of the landscape and potential habitat loss but according to the BLM Instruction Memorandum IM-2012-043, “Consider deferring fence construction unless the objective is to benefit GRSG habitat, improve land health, promote successful reclamation, or provide resource protection” (BLM 2011a). BLM IM-20-043 further states (BLM 2011a), “….fences posing higher risk to GRSG include those where fence densities exceed 1.6 miles of fence per section (640 acres).” The three exclosures do not exceed 1.6 miles per section and the construction of the exclosures would protect the riparian areas from further degradation thus enhancing the riparian areas and GRSG habitat over time. Federal Register (FR) 75 page 13,929 explains a few studies where long fences (over 2 miles) can negatively impact sage-grouse. There are no studies or mention in the FR 75 stating exclosures (<1 mile) negatively impact greater sage-grouse. FR 75 page 13,929 directly states “Not all fences present the same mortality risk to GRSG. Mortality risk appears to be dependent on a combination of factors including fence design, landscape topography, and spatial relationship with seasonal habitats” (FR 2010a).

The National Technical Team (NTT) report (2011) states to, “Design any new structural range improvements…to conserve, enhance, or restore sage-grouse habitat.” These three riparian areas are important brood-rearing habitat for GRSG and these exclosures would restore the riparian vegetation. According to Gregg and

Crawford (2009), “GRSG chick and brood survival were directly linked to availability of food and cover and in areas of degraded habitat, active restoration may be necessary to increase availability of herbaceous vegetation and insects.”

USFWS defines functional habitat loss as “…physical barriers that preclude use of otherwise suitable areas and activities that prevent animals from using suitable habitat patches due to behavioral avoidance.” (FR 75 2010). The exclosures proposed would be designed to allow GRSG to enter riparian areas and springs. Jack rail fencing minimizes collisions and allows GRSG, as well as other wildlife including deer and antelope, safe access to riparian areas inside the exclosures.

A potential direct impact to GRSG from constructing three riparian exclosures is collision risk. Since all three exclosures would be constructed within 4 miles of pending active leks, a GRSG Fence Collision Risk Tool (NRCS 2012) was used to model the exclosures to find the potential risk for GRSG collisions. All three riparian exclosures would meet the GRSG and wildlife fencing safety specifications in order to avoid collision risks. Adding GRSG fence markers for barbed wire fencing has been shown to reduce collisions by 83% (Stevens 2011). Based upon data from the Stevens study and other widely available covariate data, modeling was used to develop geospatial data that display relative risk of collision around leks (3-km radius). Terrain ruggedness and distance to lek were found to be the most important variables associated with risk. Overlaying this data with planned or existing fence locations will help planners avoid or reduce collision risks in breeding habitats (NRCS 2012). The Fence Collision Risk Tool considers distance to leks as an indicator for collision: the closer the lek to the fence the higher the risk of GRSG collision. The tool has predefined colors (low risk=green, medium risk=yellow, high risk=red) that display automatically when added to ArcMap. In the classified raster data, red = risk of >1 collision per lekking season (NRCS 2012). The proposed Fire Creek and North Fork Mill Creek exclosures did not meet the criteria for distance to leks so the tool was not used. For the proposed Ferris Creek exclosure, the area was green which means a low collision risk to GRSG.

Indirect impacts to the GRSG as a result of the proposed action would include possible perches for ravens and raptors species. For the proposed exclosure area for Fire Creek, red-tailed hawks have been identified in the vicinity perched on nearby rock outcroppings. The July 2015 NRST report for Fire Creek stated that “While fences and posts provide potential perch sites for birds of prey, there are numerous existing perches on rock outcrops that are available for perches; with normal wildlife mitigation no issues are added to threaten sage-grouse or other wildlife.” With natural perches already

existing in the proposed exclosure areas, the fencing would not contribute to additive mortality of GRSG by predation.

The three riparian exclosures would be providing improved GRSG brood-rearing habitat (Table 2-2 GRSG ARMPA 2015) thus ensuring successful and healthy populations of GRSG. The exclosures are expected to allow the exclosed areas to return to PFC. By adhering to the design features for GRSG, no significant impacts to GRSG habitat or populations would be expected.

Water Gap Alternative
No significant impacts to GRSG would be expected to occur with the addition of a water gap and let down fence. This Water Gap Alternative for the proposed Fire Creek exclosure would not likely increase the potential for GRSG collisions or potential raptor and raven perches.

No Action Alternative
Healthy riparian areas and wet meadow vegetation serve a crucial role for GRSG brood-rearing habitat. Specific requirements such as grass height for cover and forb diversity near riparian areas are important for GRSG chick survival (Hagen et al. 2007). Under the No Action Alternative, the three stream segments would continue to decline in health; trampling and hummocking would increase with continued livestock presence, resulting in destroyed riparian vegetation, increased sedimentation, altered stream banks, and more head-cuts.

Pygmy Rabbit
No pygmy rabbit habitat or evidence of pygmy rabbit use was observed during the survey and therefore this species would not be affected by the proposed action.

Bats
Nine sensitive bat species have been confirmed or have the potential to occur within the project area. The proposed disturbance would not result in the disturbance or removal of bat hibernacula or roosting sites. No disturbance to the riparian area within the project area would occur. By exclosing Fire Creek, the riparian area is expected to undergo a natural restoration, resulting in an increase in bat foraging habitat in the future. Healthy riparian areas have the potential to attract foraging and drinking bats from a considerable distance. The project would likely have an overall positive effect on bat habitat. With the riparian areas returning to proper functioning condition, increased insects would be present and improved water quality would be available to foraging bats in the areas.

Water Gap Alternative

No significant impacts to bats will occur with the addition of a water gap and let down fence.

No Action Alternative
With no exclosures to protect the riparian areas from livestock, the three proposed stream segments would continue to decline in health; trampling and hummocking would increase with continued livestock presence resulting in destroyed riparian vegetation, increased sedimentation, altered stream banks, and more head-cuts.

Migratory Birds
Under the proposed action, the project design features would minimize direct impacts to migratory birds. Noise impacts to migratory birds would be temporary in nature, and the overall ambient noise level would not increase beyond existing conditions at the site. By either completely avoiding construction activities during the breeding season or applying appropriate disturbance buffers if nests are found, it is unlikely the proposed action would result in a significant impact to or decline in local or regional migratory bird populations.

The proposed action would result in minimal disturbance to potential nesting and foraging habitat for migratory bird species. Under the proposed action, the project design features and environmental protection measures for migratory birds would minimize direct impacts to sensitive bird species.

Alternative Action
No significant impacts to migratory birds would occur with the addition of a water gap and let down fence.

No Action Alternative
With no exclosures to protect the riparian areas from livestock, the three proposed stream segments would continue to decline in health; trampling and hummocking would increase with continued livestock presence resulting in destroyed riparian vegetation, increased sedimentation, altered stream banks, and more head-cuts.

General Wildlife
Under the proposed action, the project design features would minimize impacts to general wildlife species, including big game. Both fence designs, jack-rail and barbed wire, would be in conformance with BLM H-1741-1, Fencing Standards Manual (BLM 1990), minimizing potential negative effects to wildlife species that utilize the area and allowing for safe ingress and egress to the water sources. The short lengths and design of the proposed exclosures would not impact or restrict big game and general wildlife movement patterns. The increased noise from fence construction would be temporary and

not expected to result in long term effects on big game and wildlife populations.

Water Gap Alternative

No significant impacts to general wildlife would occur with the addition of a water gap and let down fence. Wildlife, including big game, would still have safe and easy ingress and egress to the water and riparian vegetation.

No Action Alternative

With no exclosures to protect the riparian areas from livestock, the three proposed stream segments would continue to decline in health; trampling and hummocking would increase with continued livestock presence resulting in destroyed riparian vegetation, increased sedimentation, altered stream banks, and more head-cuts.

Chapter Four: Cumulative Impact Analysis

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4.1 Introduction

The proposed action has been examined for cumulative effects to the Assessment Area and the surroundings. Cumulative impacts are those effects on resources within an area or region caused by a combination of past, present and reasonable foreseeable future actions (RFFA's). These impacts may be individually minor but added together over time may become significant (40 CFR 1508.7).

There are three separate Cumulative Effects Study Areas (CESA) used by resource specialists to analyze the effects to each resource. The CESA and the Past, Present, and Reasonably Foreseeable Future Actions (RFFAs) are specific to each resource and are therefore discussed in each section.

4.2 Cumulative Impacts Evaluation

4.2.1 Native American Concerns

Past and Present Actions: Past actions that could have resulted in impacts to Native American religious concerns within the CESA include mineral exploration and mining operations, grazing, fuels reduction activities, wildland fire and fire suppression activities, and dispersed recreation.

Present actions that may result in impacts to Native American religious concerns within the CESA are the same as the past actions, including current mineral exploration and development activities being conducted within the CESA.

RFFAs: RFFAs that may result in impacts to Native American religious concerns within the CESA include mineral exploration and mining activities, dispersed recreation, fuel reduction activities, and wildland fire suppression efforts.

<u>Proposed Action</u>

Although the proposed action would create minimal disturbance, there is potential for impacts to Native American religious concerns within the CESA as a result of the past and present actions, and RFFAs when combined with the proposed action. However, cumulative impacts to Native American religious concerns would be limited or negligible due to implementation of BMP's and guidance solicited from the tribes.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The difference of the alternative to the proposed action would be 0.1 acres and would not make any significant change in the cumulative analysis of the proposed action.

4.2.2 Noxious Weeds, Invasive and Non-Native Species

The CESA for noxious weeds, invasive and non-native species are the Maysville South, Fire Creek, and North Fork Use Areas. This CESA encompasses approximately 39,665 acres and is shown on Map 4.2.5.

Past and Present Actions: Past and present actions with impacts created from noxious weeds, invasive and non-native species could have included and may currently include wildland fires, wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, and dispersed recreation. These actions could have disturbed vegetation and soils creating an opportunity for invasive plant colonization and the introduction of noxious weeds, invasive and non-native species seeds. There are no specific data to quantify impacts from noxious weeds, invasive and non-native species that resulted from wildlife habitat management, livestock grazing, or dispersed recreation.

Historic fires (2000–2015) have burned approximately 3,958 acres in the Use Areas CESA (approximately 10% of the CESA). Authorized and expired mineral exploration and Mining Notices and Plans of Operation total approximately 385 acres of surface disturbance. Approximately 468 acres of ROWs were issued within the Use Areas CESA that also had the potential to introduce noxious weeds, invasive and non-native species. The past and present actions that are quantifiable have disturbed approximately 12% of the CESA.

RFFAs: Potential impacts from noxious weeds, invasive and non-native species as a result of wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, dispersed recreation, or loss of native vegetation associated with potential wildland fires are expected to continue. There are no specific data to quantify impacts from noxious weeds, invasive and non-native species as a result of dispersed recreation, livestock grazing, wildlife habitat management, or potential wildland fires.

Proposed Action

The proposed action (approximately 62.35 acres) would impact approximately 0.02% of the CESA. Quantifiable past and present actions and RFFA disturbance in the Use Areas CESA total approximately 4,811 acres, which results in an incremental impact from the proposed action of approximately 12%. Since there are limited quantifiable data from all activities within the CESA, this calculation is a conservative analysis of the potential incremental impact of the proposed action. Therefore, based on the above analysis and findings, incremental impacts from noxious weeds, invasive and non-native species as a result of the proposed action, when combined with the impacts from the past and present actions and RFFAs, are expected to be minimal.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek Exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The difference of the alternative to the proposed action would be 0.05 acres and would not make any significant change in the cumulative analysis of the proposed action.

No Action Alternative

A total of the quantifiable past and present action and RFFA disturbance within the Use Areas CESA is approximately 4,811 acres, which is an impact to approximately 12% of the CESA. The No Action Alternative would not result in any impacts. Impacts from noxious weeds, invasive and non-native species from this alternative, in combination with past and present actions and RFFA disturbance, would be minimal.

4.2.3 Water Resources and Water Quality

The CESA for Water Resources and Water Quality is the three use areas that the project locations are located in Fire Creek, South Maysville, and North Fork Use Areas. This CESA encompasses approximately 39,665 acres and is shown on Map 4.2.5. Fire Creek Use Area consists of 19,317 acres of which 9,596 is BLM administered lands. Maysville South Use Area consists of 15,433 acres of which 7,647 is BLM administered lands. North Fork Use Area consists of 4,915 acres of which 2,148 is BLM administered lands.

Past and Present Actions: Past and present actions with impacts to Water Resources and Water Quality could have included and may currently include wildland fires, wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, and dispersed recreation. These actions have altered stream banks, compacted the soils and modified vegetation around the streams creating an opportunity for water quality to have been altered. There are no specific data to quantify impacts of water quality that resulted from wildland fires, wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, and dispersed recreation.

Historic fires (2000–2015) have burned approximately 3,958 acres in the CESA (approximately 10% of the CESA). Authorized and closed mineral exploration and Mining Notices and Plans of Operation total approximately 385 acres of surface disturbance. Approximately 468 acres of ROWs were issued within the CESA that also had the potential to changes in water quality. The past and present actions that are quantifiable have disturbed approximately 12% of the CESA.

RFFAs: Potential impacts from changes in water resources and water quality as a result of wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, dispersed recreation, or disturbance due to loss of native vegetation associated with potential wildland fires are expected to continue outside of the exclosures. There are no specific data to quantify impacts of water quality, as a result of dispersed recreation, livestock grazing, wildlife habitat management, or potential wildland fires.

However, scheduled or active projects could have impacts on the current upcoming project. A Final Decision Issued September 2, 2015 also approved 6 additional spring exclosures in the Argenta Allotment these projects are also awaiting construction, but will exclude approximately 23.0 acres. Two of these exclosures are within the CESA one on Fire Creek (6.96 acres) and one on in North Fork of Mill Creek (1.73 acres) and total 8.69 acres. Both are expected to have similar impacts as this project and would be physically connected to these projects. This previous action would make this project slightly larger than currently proposed. The only difference in the projects is the type of riparian area that the fencing is intended to protect (lentic stream sources vs lotic stream segments).

Proposed Action

The proposed action (approximately 60.35 acres) would impact approximately 0.2% of the CESA. Quantifiable past and present actions and RFFA disturbance in the CESA total approximately 4,811 acres, which results in an incremental impact of the proposed action of approximately 12%. Since there are limited quantifiable data from

all activities within the CESA, this calculation is a conservative analysis of the potential incremental impact of the proposed action. Therefore, based on the above analysis and findings, incremental impacts from water resources and water quality as a result of the proposed action, when combined with the impacts of the past and present actions and RFFAs, are expected to be insignificant.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek Exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The difference of the alternative to the proposed action would be 0.05 acres and would not make any significant change in the cumulative analysis of the proposed action.

4.2.4 Wetlands and Riparian Zones

The CESA for Wetlands and Riparian Zones is the three use areas that the project locations are located in Fire Creek, South Maysville, and North Fork Use Areas. This CESA encompasses approximately 39,665 acres and is shown on Map 4.2.5. Fire Creek Use Area consists of 19,316 acres of which 9,596 is BLM administered lands. Maysville South Use Area consists of 15,433 acres of which 7,647 is BLM administered lands. North Fork Use Area consists of 4,915 acres of which 2,148 is BLM administered lands.

Past and Present Actions: Past and present actions with impacts to Wetlands and Riparian Zones could have included and may currently include wildland fires, wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, and dispersed recreation. These actions have altered stream banks, compacted soils and modified vegetation around the streams creating an opportunity for riparian areas and wetlands to be disturbed. There are no specific data to quantify impacts vegetative disturbance that resulted from wildlife habitat management, livestock grazing, or dispersed recreation. Qualitative data in the form of PFC assessments have been completed in the past at some of the areas. Fire Creek was assessed in for PFC in 2013 and was assessed as currently non-functional and therefore would not meet the Standards for Rangeland Health, which is the properly functioning condition (PFC) of the streams. Ferris Creek was assessed in for PFC in 2005 and was assessed as functional at risk with a downward trend and therefore also would not meet the Standards for Rangeland Health. Portions of the North Fork of Mill Creek within the project area was

assessed for PFC in 2005 and was functional at risk with a downward trend and non-functional with a downward trend; therefore also would not meet the Standards for Rangeland Health.

Historic fires (2000–2015) have burned approximately 3,958 acres in the CESA (approximately 10% of the CESA). Authorized and closed mineral exploration and Mining Notices and Plans of Operation total approximately 385 acres of surface disturbance. Approximately 468 acres of ROWs were issued within the CESA that also had the potential to lead to vegetative disturbance. The past and present actions that are quantifiable have disturbed approximately 12% of the CESA.

RFFAs: Potential impacts from riparian and wetland disturbance as a result of wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, dispersed recreation, or disturbance due to loss of native vegetation associated with potential wildland fires are expected to continue outside of the exclosures. There are no specific data to quantify impacts of riparian and wetland disturbances, as a result of dispersed recreation, livestock grazing, wildlife habitat management, or potential wildland fires.

However, scheduled or active projects could have impacts on the current upcoming project. A Final Decision Issued September 2, 2015 also approved 6 additional spring exclosures in the Argenta Allotment these projects are also awaiting construction, but will exclude approximately 23.0 acres. Two of these exclosures are within the CESA one on Fire Creek (6.96 acres) and one on in North Fork of Mill Creek (1.73 acres) and total 8.69 acres. Both are expected to have similar impacts as this project and would be physically connected to these projects. This previous action would make this project slightly larger than currently proposed. The only difference in the projects is the type of riparian area that the fencing is intended to protect (lentic stream sources vs lotic stream segments).

Proposed Action

The proposed action (approximately 60.35 acres) would impact approximately 0.2% of the CESA. Quantifiable past and present actions and RFFA disturbance in the CESA total approximately 4,811 acres, which results in an incremental impact of the proposed action of approximately 12%. Since there are limited quantifiable data from all activities within the CESA, this calculation is a conservative analysis of the potential incremental impact of the proposed action. Therefore, based on the above analysis and findings, incremental impacts from riparian and wetland area disturbance as a result of the proposed action, when combined with the impacts of the past and present actions and RFFAs, are expected to be insignificant.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The difference of the alternative to the proposed action would be 0.05 acres and would not make any significant change in the cumulative analysis of the proposed action.

4.2.5 Grazing Management

The CESA for grazing management is the Argenta Allotment boundary. The CESA encompasses approximately 331,518 acres of which 141,689 acres area BLM administered lands, and is shown in Map 4.2.5.

Past and Present Actions: Past and present actions with impacts to grazing management include wildland fires, wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, and dispersed recreation. These actions create an opportunity for changes in livestock distribution and impacts. There are no specific data to quantify impacts of livestock distribution that resulted from these actions.

Historic fires (2000–2015) have burned approximately 73,772 acres in the CESA (approximately 22% of the CESA). Authorized and expired mineral exploration and mining notices and Plans of Operation total approximately 7,008 acres of surface disturbance. Approximately 6,427 acres of ROWs were issued within the CESA that also had the potential to modify livestock behavior and impacts. Permanent recreation sites have excluded 80.939 acres within the CESA. The past and present actions that are quantifiable have disturbed approximately 26% of the CESA.

RFFAs: Potential impacts to grazing management as a result of wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, dispersed recreation, or disturbance due to loss of native vegetation associated with potential wildland fires are expected to continue. There are no specific data to quantify impacts to grazing management, as a result of dispersed recreation, wildlife habitat management, or potential wildland fires.

Several scheduled or active projects could have impacts on the grazing management. The Klondex Mine Expansion in the Fire Creek Use Area has the potential to limit access to livestock to additional

acreage causing concentration of livestock outside the mine enclosure. Currently the Klondex Mine authorized disturbance is 1,988 acres. The expansion is currently expected to disturb 150 acres within the existing authorized disturbance.

The Mule Canyon Mitigation Project was approved in 2015 but has not been constructed. This project will enclose two springs and have a water development in the Mule Canyon Use Area; the project will enclose 0.14 acres.

In accordance with the Agreement, a Final Decision Issued September 2, 2015, also approved six additional spring exclosures in the Argenta Allotment. These projects are also not yet constructed, but will exclude a total of 23.01 acres. One of these exclosures (6.96 acres) will be attached to the Fire Creek exclosure and another (1.73 acres) adjacent to the North Fork exclosure. Additional projects in accordance with the Agreement may be proposed and analyzed with additional NEPA analysis. Because the projects have not yet been proposed, their effects on grazing management are not currently quantifiable.

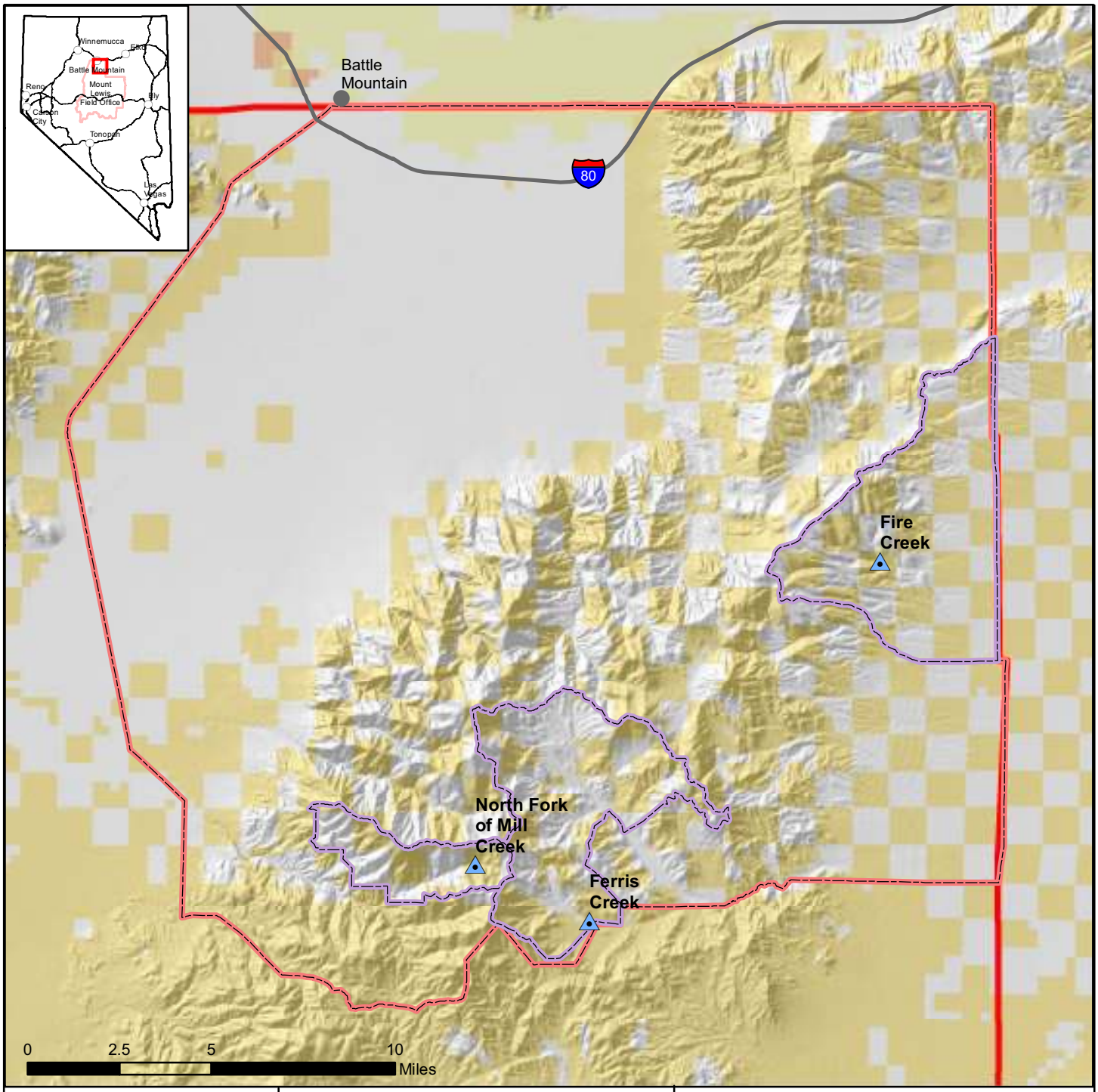
The Livestock Grazing Permit Renewal process is also scheduled to be completed by the end of Grazing Year 2017; at this time it is impossible to predict what the impacts or outcome of that process will be.

Proposed Action

The proposed action (approximately 60.35 acres) would impact approximately 0.2 % of the CESA. Quantifiable past and present actions and RFFA disturbance in the CESA total approximately 87,207 acres, which results in an incremental impact of the proposed action of approximately 0.02%. Since there are limited quantifiable data from all activities within the CESA, this calculation is a conservative analysis of the potential incremental impact of the proposed action. Therefore, based on the above analysis and findings, incremental impacts from grazing management as a result of the proposed action, when combined with the impacts of the past and present actions and RFFAs, are expected to be insignificant.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The difference of the alternative to the proposed action would be 0.05 acres and would not make any significant change in the cumulative analysis of the proposed action.



Project Areas
BLM Field Office Boundary
Grazing Management CESA
Use Areas CESA
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Reclamation
Private
Battle Mountain
Major Road

January 15, 2016

United States Department of the Interior
Bureau of Land Management
Battle Mountain District Office
Mount Lewis Field Office
50 Bastian Road
Battle Mountain, NV 89820

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BUREAU OF LAND MANAGEMENT

Argenta Settlement Agreement
Environmental Assessment

Grazing Management Cumulative Effects Study Area

Vegetation, Soils, Noxious Weeds, Invasive and Non-Native Species, Recreation, and Water Quality Cumulative Effects Study Area (Use Areas)

Map 4.2.5 Grazing Management Cumulative Effects Study Area

4.2.6 Recreation

The CESA encompasses the Maysville South, North Fork, and Fire Creek Use Areas. Recreation which occurs within the CESA is minimal. Overall, the Project Area is relatively isolated and undeveloped. Dispersed recreation may occur throughout the CESA.

Past and Present Action: Past and present actions effecting recreation may include activities such as mineral exploration and mining, ranching operations, wildlife use, wildfires, travel management, or an overall increased interest in the area from the public or prospecting individuals. These activities could impede recreation within the CESA through overland travel, reduced solitude, or decreased acreage through land development for recreation opportunities. There are no data on recreational use within the CESA, so quantifiable analysis cannot be applied.

Authorized and closed mineral exploration and Mining Notices and Plans of Operation total approximately 385 acres of surface disturbance. Wildfires in the past 15 years have burned approximately 3,958 acres within the CESA. The CESA also incorporates livestock grazing and provides habitat for wildlife. Generally, increases in travel through the area from dispersed recreation or land development could have temporary effects to recreation. These disturbances would be minimal and short-term if they do occur. The proposed action to increase the health and vitality of riparian areas would increase the appeal of the area through the reestablishment of native vegetation and possible increase in wildlife populations. These benefits would be beneficial to recreation within the area allowing for better hunting opportunities and improved aesthetics to the landscape.

RFFAs: Possible future effects to recreation throughout the CESA from mineral exploration and mining, ranching operations, wildlife use, wildfires, travel management, or an overall increased interest in the area from the public or prospecting individuals may continue. If potential future activities do impact recreation, they would be mitigated through the proper channels of the BLM. There are no data on recreational use within the CESA, so quantifiable analysis cannot be applied.

The Fire Creek Project, operated by Klondex Mines, is the largest commercial operation in the CESA. Klondex Mines is currently operating active gold mines and should be considered for future impacts to recreation within the CESA. Additionally, roads may also be constructed through mining operations, which ultimately would lead to greater access to the CESA from the recreating public. All

impacts to recreation would be analyzed in any future actions within the CESA.

Proposed Action

The proposed action (approximately 60.35 acres) would impact approximately 0.2% of the CESA. Quantifiable past and present actions and RFFA disturbance in the CESA total approximately 4,811 acres, which results in an incremental impact of the proposed action of approximately 12%.

There are at least 32 miles of open roads within the CESA. The effect of fencing off access to 0.32 miles of roads would amount to 1.0% of the total road access.

Since there are limited quantifiable data from all activities within the CESA, this calculation is a conservative analysis of the potential incremental impact of the proposed action. Therefore, based on the above analysis and findings, incremental impacts towards recreation as a result of the proposed action, when combined with the impacts of the past and present actions and RFFAs, are expected to be insignificant.

4.2.7 Soils

The CESA for soils is comprised of the three use areas that the project areas are located in. They are the Fire Creek, South Maysville, and North Fork Use Areas. It encompasses approximately 39,665 acres and is shown on Map 4.2.5. Fire Creek Use Area consists of 19,317 acres of which 9,596 is BLM administered lands. Maysville South Use Area consists of 15,433 acres of which 7,647 is BLM administered lands. North Fork Use Area consists of 4,915 acres of which 2,148 is BLM administered lands.

Past and Present Actions: Past and present actions with impacts to soils include wildland fires, wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, and dispersed recreation. These actions could have disturbed soils creating an opportunity for erosion and compaction of soils. There are no specific data to quantify impacts of soil erosion and compaction that resulted from these actions.

Historic fires (2000–2015) have burned approximately 3,958 acres in the CESA (approximately 10% of the CESA). Authorized and expired mineral exploration and mining notices and Plans of Operation total approximately 385 acres of surface disturbance. Approximately 468 acres of ROWs were issued within the CESA that also had the potential to lead to erosion and compaction of soils. The past and

present actions that are quantifiable have disturbed approximately 12% of the CESA.

RFFAs: Potential impacts from soil disturbance as a result of wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, dispersed recreation, or disturbance due to loss of native vegetation associated with potential wildland fires are expected to continue. There are no specific data to quantify impacts of soil disturbance, as a result of dispersed recreation, livestock grazing, wildlife habitat management, or potential wildland fires.

Several scheduled or active projects could have impacts on the soil. The Klondex Mine Expansion in the Fire Creek Use Area has the potential to limit access to livestock to additional acreage causing concentration of livestock outside the mine enclosure. Currently the Klondex Mine authorized disturbance is 1,988 acres. The expansion is currently expected to disturb 150 acres within the existing authorized disturbance.

In accordance with the Settlement Agreement, a Final Decision Issued September 2, 2015, also approved six additional spring exclosures in the Argenta Allotment. These projects are also awaiting construction, but will exclude 23 acres. Additional projects in accordance with the Settlement Agreement may be proposed and analyzed with additional NEPA analysis. Because the projects have not yet been proposed, their effects on soils are not currently quantifiable.

Proposed Action

The proposed action (approximately 60.35 acres) would impact approximately 0.2% of the CESA. Quantifiable past and present actions and RFFA disturbance in the CESA total approximately 4,811 acres, which results in an incremental impact of the proposed action of approximately 12%. Since there are limited quantifiable data from all activities within the CESA, this calculation is a conservative analysis of the potential incremental impact of the proposed action. Therefore, based on the above analysis and findings, incremental impacts from Livestock Management as a result of the proposed action, when combined with the impacts of the past and present actions and RFFAs, are expected to be insignificant.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The

difference of the alternative to the proposed action would be 0.05 acres and would not make any significant change in the cumulative analysis of the proposed action.

4.2.8 Vegetation

The CESA for vegetation is comprised of the three use areas that the projects are located in. They are the Fire Creek, South Maysville, and North Fork Use Areas. This CESA encompasses approximately 39,665 acres and is shown on Map 4.2.5. Fire Creek Use Area consists of 19,317 acres of which 9,596 is BLM administered lands. Maysville South Use Area consists of 15,433 acres of which 7,647 is BLM administered lands. North Fork Use Area consists of 4,915 acres of which 2,148 is BLM administered lands.

Past and Present Actions: Past and present actions with impacts to vegetation include wildland fires, wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, and dispersed recreation. These actions could have disturbed vegetation creating an opportunity to lead to changes in vegetative composition, or plant community succession. There are no specific data to quantify changes in vegetation that resulted from these actions.

Historic fires (2000–2015) have burned approximately 3,958 acres in the CESA (approximately 10% of the CESA). Authorized and expired mineral exploration and mining notices and Plans of Operation total approximately 385 acres of surface disturbance. Approximately 468 acres of ROWs were issued within the CESA that also had the potential to lead to vegetative disturbance. The past and present actions that are quantifiable have disturbed approximately 12% of the CESA.

RFFAs: Potential impacts to vegetation as a result of wildlife habitat management, ROW construction and maintenance, mineral exploration and mining, livestock grazing, dispersed recreation, or disturbance due to loss of native vegetation associated with potential wildland fires are expected to continue. There are no specific data to quantify impacts to vegetation as a result of dispersed recreation, wildlife habitat management, or potential wildland fires.

Several scheduled or active projects could have impacts on the vegetation. The Klondex Mine Expansion in the Fire Creek Use Area has the potential to limit access to livestock to additional acreage causing concentration of livestock outside the mine enclosure impacting vegetation. Currently the Klondex Mine authorized

disturbance is 1,988 acres. The expansion is currently expected to disturb 150 acres within the existing authorized disturbance.

In accordance with the Settlement Agreement, a Final Decision Issued September 2, 2015, also approved six additional spring exclosures in the Argenta Allotment. These projects are also not yet constructed, but will exclude a total of 23.01 acres. One of these exclosures (6.96 acres) will be attached to the Fire Creek exclosure and another (1.73 acres) adjacent to the North Fork exclosure. Additional projects in accordance with the Settlement Agreement may be proposed and analyzed with additional NEPA analysis. Because the projects have not yet been proposed, their effects on vegetation are not currently quantifiable.

Proposed Action

The proposed action (approximately 60.35 acres) would impact approximately 0.2% of the CESA. Quantifiable past and present actions and RFFA disturbance in the CESA total approximately 4,811 acres, which results in an incremental impact of the proposed action of approximately 12%. Since there are limited quantifiable data from all activities within the CESA, this calculation is a conservative analysis of the potential incremental impact of the proposed action. Therefore, based on the above analysis and findings, incremental impacts from vegetative disturbance as a result of the proposed action, when combined with the impacts of the past and present actions and RFFAs, are expected to be insignificant.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek Exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The difference of the alternative to the proposed action would be 0.05 acres and would not make any significant change in the cumulative analysis of the proposed action.

4.2.9 Wildlife

The Wildlife CESA represents the immediate area of the Shoshone Mountain Range in which the project area is located, bounded by major roads and drainages thereby representing the use area for wildlife species. The Wildlife CESA measures 257,588 acres and is shown on Map 4.2.9. This section addresses Migratory Birds, General Wildlife, and Special Status Wildlife species.

Past and Present Actions: Past and present actions that could have impacted and may be currently impacting migratory birds, special status wildlife, and general wildlife and their habitat include livestock grazing, wildlife and game habitat management, wildland fires, dispersed recreation, utility and other ROW construction and maintenance, mineral exploration, and mining. Impacts to these resources and their habitat have resulted from the following: 1) indirect impacts for the destruction of habitat associated with building roads and clearing vegetation; 2) indirect impacts from disruption of migratory bird habitat from human presence or noise from mining or other heavy equipment, water trucks, and four-wheel drive pickups; and 3) direct impacts or harm to migratory birds that result from the removal of trees and shrubs containing viable nests or ground nests destroyed by construction or ranching equipment. Impacts to habitat from grazing include trampling of vegetation or nesting areas near streams, springs, or riparian areas within the CESA. Impacts to habitat from recreation activities include destruction of native vegetation or nesting areas from off-road vehicles that traveled off established roadways.

Historic fires (1994–2014) have burned approximately 55,292 acres in the Use Areas CESA (approximately 21% of the CESA). Authorized and expired mineral exploration and Mining Notices and Plans of Operation total approximately 20,641 acres of surface disturbance. Approximately 18,276 acres of ROWs were issued within the CESA that also had the potential to impact wildlife species and their habitat. The past and present actions that are quantifiable have disturbed approximately 37% of the CESA.

Non-quantifiable past and present activities include dispersed recreation, livestock grazing and associated management that may create noise and disturbance to habitat. In addition, these activities could have impacted wildlife species and their habitat.

RFFAs: Potential impacts to migratory birds and wildlife species and their habitat from livestock grazing, wildlife and game habitat management, dispersed recreation, mineral exploration, mining, or loss of native vegetation associated with potential wildland fires could occur. There are no specific data to quantify impacts to migratory birds and wildlife or their habitat as a result of livestock grazing, wildlife and game habitat management, dispersed recreation, or potential wildland fires within the CESAs. Currently, a total of approximately 3,179 acres of mineral activities (including approximately 4.99 acres associated with Klondex's South Exploration Notice), 188 acres of disturbance for Fire Creek Mine and approximately 0.3 acres of ROW projects are proposed within the CESA. These pending projects are all required to incorporate protection measures for migratory birds and likely to have protection measures for sensitive wildlife species and, therefore are not

expected to directly harm migratory birds or sensitive wildlife species but may result in habitat removal or alteration.

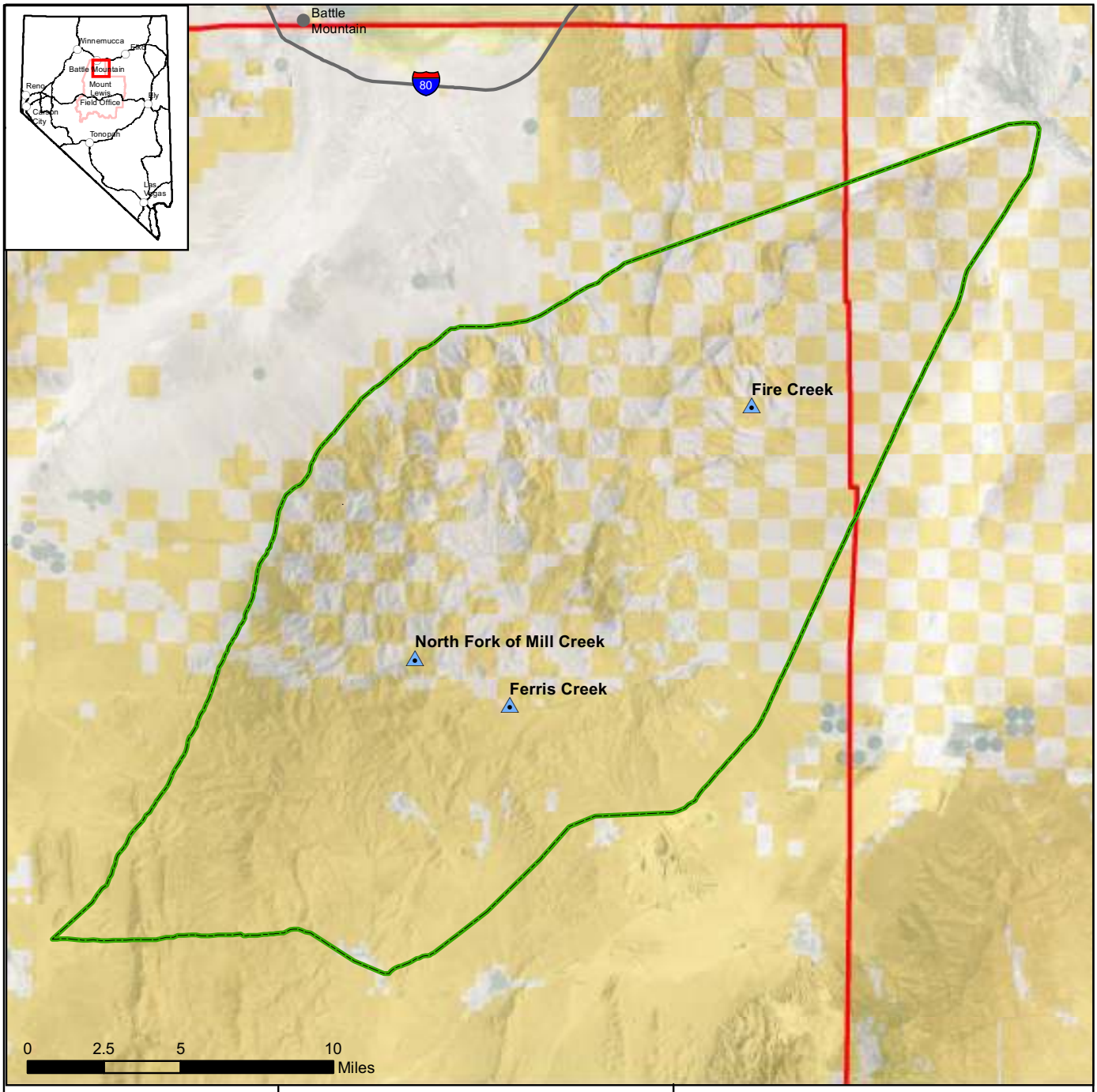
Cumulative Impacts: The proposed action would impact up to approximately 60.35 acres of habitat. When added to the past, present, and RFFA disturbance acres, the cumulative total is 4,811 acres (representing 12% of the CESA). Based on the above analysis and findings, incremental cumulative impacts to migratory birds, special status wildlife species, and general wildlife as a result of the proposed action would represent disturbance to an incremental disturbance of 0.2% within the CESA. Cumulative indirect effects would primarily be a result in human presence and disturbance during the construction phase of the proposed action, as wildlife may be displaced by activities, but would likely shift spatially into adjacent available habitat. There is similar habitat within and adjacent to the project area where mobile wildlife could relocate. The existing operations at Fire Creek Mine serve as baseline conditions for indirect effects and when added cumulatively to other activities within the CESA would be considered incremental and temporary in nature. Environmental protection measures incorporated into the proposed action and concurrent associated with project activities would lessen the potential impacts.

Proposed Action

The proposed action (approximately 60.35 acres) would impact approximately 0.2% of the CESA. Quantifiable past and present actions and RFFA disturbance in the CESA total approximately 4,811 acres, which results in an incremental impact of the proposed action of approximately 12%. Since there are limited quantifiable data from all activities within the CESA, this calculation is a conservative analysis of the potential incremental impact of the proposed action. Therefore, based on the above analysis and findings, incremental impacts to wildlife as a result of the proposed action, when combined with the impacts of the past and present actions and RFFAs, are expected to be insignificant.

Water Gap Alternative

Under the Water Gap Alternative, the fencing project would be identical to the proposed action with the exception of two water gaps placed in the Fire Creek exclosure. All analysis in the proposed action would be the same with the exception of Fire Creek. The difference of the alternative to the proposed action would be 0.05 acres and would not make any significant change in the cumulative analysis for wildlife of the proposed action.



Project Areas
Mount Lewis Field Office Boundary
Wildlife CESA
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Reclamation
Private
Battle Mountain
Major Road

January 15, 2016

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United States Department of the Interior
Bureau of Land Management
Battle Mountain District Office
Mount Lewis Field Office
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BUREAU OF LAND MANAGEMENT

Argenta Settlement Agreement
Environmental Assessment

Wildlife Cumulative Effects Study Area

Map 4.2.9 Wildlife Cumulative Effects Study Area

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Chapter Five: Consultation and Coordination

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5.1 Tribes and Agencies Contacted

Te-Moak Tribe of Western Shoshone

Battle Mountain Band of the Te-Moak Tribe of Western Shoshone

United States Fish and Wildlife Service

Nevada Department of Wildlife

Nevada State Clearinghouse

Department of Interior Bureau of Reclamation

Eureka County Department of Natural Resources

Town of Tonopah

Lander County Planning

Lander County PLUAC

Esmeralda County Commissioners

Nevada Department of Transportation

Nevada Department of Agriculture

Lander County Commissioners

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Chapter Six: List of Preparers

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6.1 List of Preparers

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Jessica Kahler, Mount Lewis Field Office, Environmental Protection Specialist

Juan Martinez, Battle Mountain District Office, Native American Coordinator

Justin Demaio, Mount Lewis Field Office, Archaeologist

Kathy Graham, Battle Mountain District Office, GIS Specialist

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Stephaney Cox, Mount Lewis Field Office, Wildlife Biologist

Victoria Sanderson, Great Basin Institute, NEPA Technician

William O'Neill, Mount Lewis Field Office, Wildlife Biologist

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Chapter Seven: References

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