

**WEST PEQUOP PROJECT, LLC
WEST PEQUOP EXPLORATION PROJECT
ELKO COUNTY, NEVADA**

**Environmental Assessment
DOI-BLM-NV-N030-2010-0008-EA**

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**U.S. Department of the Interior
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Wells Field Office**

**WEST PEQUOP PROJECT, LLC
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ENVIRONMENTAL ASSESSMENT**

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APPENDIX

Appendix A: Soils in the West Pequop Exploration Project Area

ACRONYM AND ABBREVIATION LIST

amsl	above mean sea level
ASM	ASM Affiliates, Inc.
AUM	animal unit month
AUX	AuEx Ventures, Inc.
BLM	Bureau of Land Management
BMP	Best Management Practice
BMRR	Bureau of Mining Regulation and Reclamation
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CESA	Cumulative Effects Study Area
CFR	Code of Federal Regulations
CO ₂	carbon dioxide
DWR	Division of Water Resources
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EA	Environmental Assessment
°F	degrees Fahrenheit
FLPMA	Federal Land Policy and Management Act of 1976
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
GPS	Geographic Positioning System
HMA	Herd Management Area
I-80	Interstate 80
IM	Instruction Memorandum
IB	Informational Bulletin
MBTA	Migratory Bird Treaty Act
MDB&M	Mount Diablo Base & Meridian
Mining Law	General Mining Law of 1872, as amended
MSHA	Mine Safety and Health Administration
MOU	Memorandum of Understanding
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NFS	National Forest Systems
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRP	Nevada Reclamation Permit
NRS	Nevada Revised Statutes
OHV	off highway vehicle
Plan/NRP	Plan of Operations/Nevada Reclamation Permit
PLS	pure live seed
PNG	Pittston Nevada Gold Company, Ltd.
Project	West Pequop Exploration Project
RFFAs	Reasonably Foreseeable Future Actions

ROW	Right-of-Way
RMP	Resource Management Plan
SHPO	State Historic Preservation Office
SWIP	Southwest Intertie Project
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management
WPP	West Pequop Project, LLC

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ENVIRONMENTAL ASSESSMENT**

1 INTRODUCTION

The Pequop Exploration Project was originally permitted May 2000 by Pittston Nevada Gold Company, Ltd. (PNG). The Decision Record and the Finding of No Significant Impact (FONSI) for the Pequop Project Environmental Assessment (EA) BLM/EK/PL-2000/011, were signed May 24, 2000. AuEx Ventures, Inc. (AUX) acquired the project in July 2005, as well as other assets from PNG. West Pequop Project, LLC (WPP) entered into a joint venture with AUX and is currently conducting exploration activities on the project. WPP has renamed the Pequop Project to the West Pequop Exploration Project (Project).

WPP proposes to expand mineral exploration activities beyond the existing Plan of Operations #NVN-071287/Nevada Reclamation Permit (NRP) No. 0193 (Plan) boundary. The Project is located on public lands managed by the Elko District Office of the Bureau of Land Management (BLM) and is subject to 43 Code of Federal Regulations (CFR) 3809 and private land. Mining and exploration activities on private lands are subject to the Nevada Administrative Code 519A, administered by the Nevada Division of Environmental Protection (NDEP) Bureau of Mining Regulation and Reclamation (BMRR). The Project is located in Elko County, Nevada, in the western Pequop Mountains. Elevations in the expanded Project area range between 6,400 feet above mean sea level (amsl) to 9,200 feet amsl. The expanded Project is located approximately 20 miles east-southeast of the city of Wells, Nevada.

The Project is currently accessed by traveling approximately 12 miles east of Wells, Nevada, on Interstate 80 (I-80) to the Independence Exit, then traveling approximately 1.5 miles east on a frontage road to the main road in the eastern portion of Independence Valley, then traveling 7.5 miles south on an unimproved road to the main Project. From this point the Project is accessed by traveling approximately three miles east on one of two existing roads known as the Acrobat Road and the Section 34 Road. WPP would perform major maintenance on an existing jeep trail known as the Karst Canyon Road that would be utilized as access to the southern portion of the expanded Project area from the unimproved dirt road. A second access route from the east side of the Project area is proposed under this amendment. The second access route from the east side of the Project area originates at the Oasis exit approximately 27 miles east of Wells, Nevada, on I-80, then is traveled south for approximately 1.4 miles to the Six Mile Canyon Road and then 4.55 miles west-southwest into the Project area.

WPP submitted an Amendment (2010-1) to the Plan on March 9, 2010, in accordance with 43 CFR 3809.400, to the BLM and the NDEP Bureau of Mining Regulation and Reclamation BMRR. The amended Plan expands the boundary and acreage of the Project from approximately 3,253 acres to 11,941 acres of public land. A total of 26.3 acres of the Project area would be located on private land. The Plan also increases the amount of surface disturbance from 100 approved acres to a total of 400 acres of disturbance occurring in phases throughout the expanded Project area over ten years (Proposed Action). This EA, which addresses the expanded boundary and analyzes the 300-acre increase in surface disturbance acreage described in the 2010 Amendment to the Plan, has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA).

1.1 Project Area

The Project is located in parts or all of Sections 13, 14, 15, 22, 23, 24, 25, 26, 27,28, 29, 32, 33, 34, 35, and 36, Township 36 North, Range 65 East (T36N, R65E), and Sections 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, and 15, T35N, R65E, Mount Diablo Base & Meridian (MDB&M), Elko County, Nevada (Project Area) (Figure 1.1.1).

1.2 Purpose and Need

The Elko District BLM's purpose is to review the proposed Plan, analyze the potential impacts of the Proposed Action and alternatives, including the No Action Alternative under the NEPA, to determine whether the Plan conforms with the General Mining Law of 1872, as amended (Mining Law) and other applicable laws and regulations, and then issue a reasoned decision. The Elko District BLM's need is to comply with statutes and regulations that relate to the Plan, such as the 43 CFR 3809 regulations and the processes required by the NEPA. The Mining Law allows the location and use of mining claims “under such regulations prescribed by law” and Section 302(b) of under the Mining Law and the Federal Land Policy and Management Act of 1976 (FLPMA) recognizes the entry and rights of mining claimants while directing that the BLM take any action necessary to prevent unnecessary or undue degradation of the lands. These two laws form the primary statutory basis for the Surface Management Regulation codified at 43 CFR 3809 and BLM’s purpose and need in reviewing and approving the Plan.

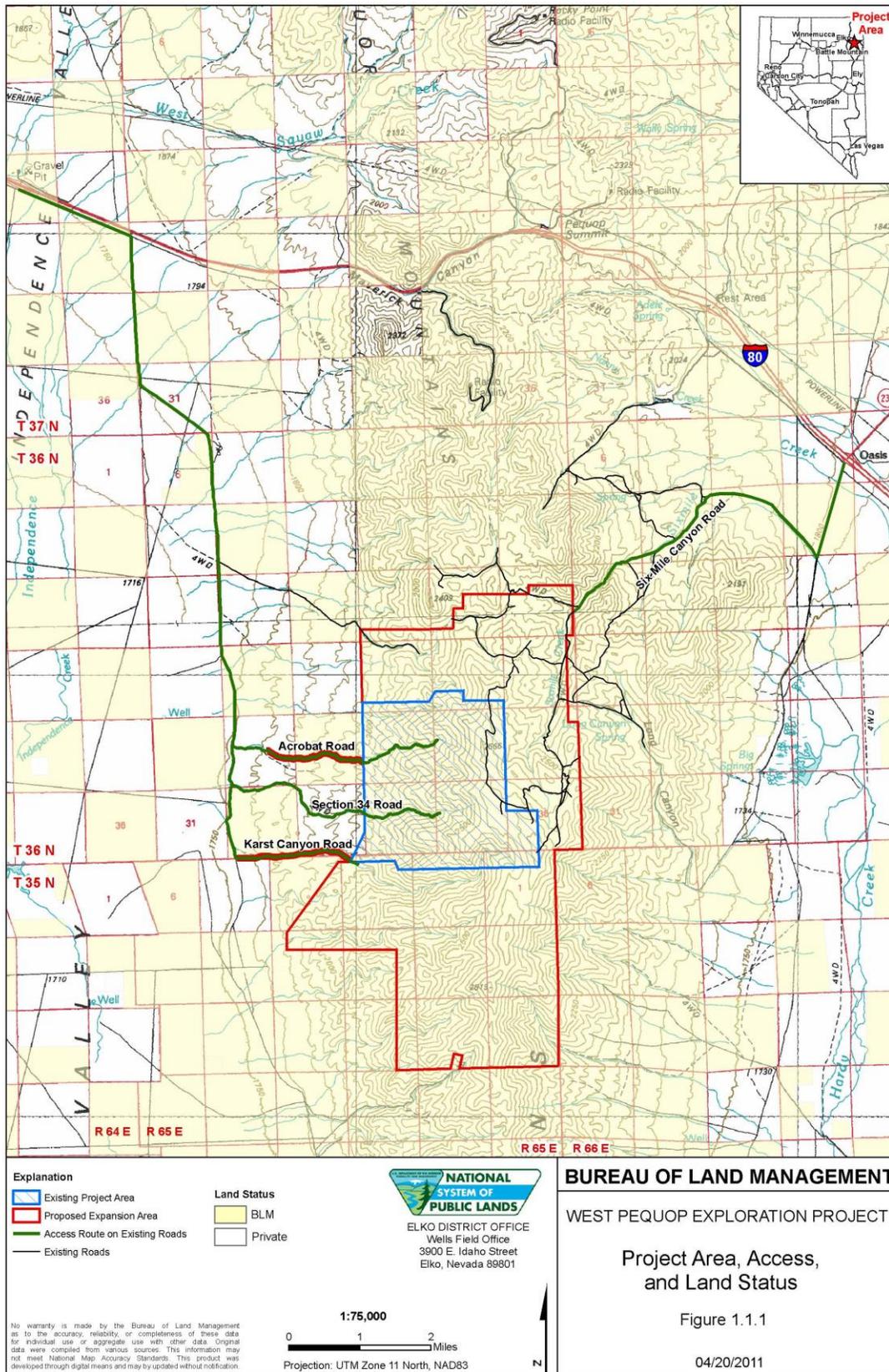
On lands open to location under the Mining Law, the BLM administers the surface acres of public land and federal subsurface mineral estate under FLPMA. The FLPMA also governs BLM’s administration of public lands not open to location under the Mining Law. WPP’s purpose in proposing the expanded West Pequop Exploration Project is to explore for, locate and delineate precious metal (gold) deposits on public land open to location under the Mining Law within the Project Area. The proposed activities are needed to further evaluate the mineral potential of the land. In order to conduct the proposed exploration activities, WPP submitted the 2010 Plan Amendment to the BLM and BMRR in March 2010, in accordance with BLM Surface Management Regulations 43 CFR 3809 and Nevada reclamation regulations at Nevada Administrative Code (NAC) 519A.

The BLM decision to be made is whether to authorize the proposed mineral exploration activities and, if authorized, what if any, stipulations or mitigation should be required of the proponent.

1.3 Land Use Plan Conformance

The Proposed Action as described in Chapter 2 is in conformance with the Wells Resource Management Plan (RMP) Record of Decision, approved 1985, page 25, Minerals and Energy (BLM, 1985). The decision states “the public lands would be managed in a manner which recognizes the Nation’s needs for domestic sources of minerals.”

Figure 1.1.1: Project Area, Access, and Land Status



1.4 Relationship to Other Laws, Policies, and Plans

The Proposed Action is further consistent with other federal, state and local laws, regulations, and plans to the maximum extent possible. As noted for the purpose and need statement, this includes FLPMA, BLM's 43 CFR surface management regulations and State of Nevada mining statutes and regulations.

The surface management regulations recognize that the BLM is required to comply with the NEPA through preparation of an environmental document, in this case an EA, which analyzes the potential impacts the Proposed Action and any consultation required under other laws including the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA).

2 PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

The Project Area, approved boundary, expanded boundary, access routes, and land status are shown on Figure 1.1.1. Existing surface disturbance in the Project Area is shown on Figure 2.1.1. BMRR issued Nevada Reclamation Permit (NRP) No. 0193 in April 2000 authorizing 100 acres of surface disturbance for mineral exploration within the 3,253-acre approved boundary on public land. WPP is currently conducting exploration activities under the existing approval. The total proposed expanded boundary measures 11,967 acres of which 26.3 acres are located on private land in Section 33, T36N, R65E.

Table 2.1-1 outlines the total authorized and proposed surface disturbance acreage, by type of disturbance, for the Project. The approved disturbance includes a total of 100 acres (86.33 acres of existing disturbance in addition to 13.67 acres of approved anticipated disturbance) within the authorized Project boundary. The 100 acres of approved disturbance are included in the total proposed surface disturbance of 400 acres for the Project. The 2010 Plan Amendment would allow WPP to use the remaining approved 13.67 acres within either the authorized Project boundary or the expanded boundary. Surface disturbance under Phase I of the Proposed Action totals 28 acres. The general locations of the proposed Phase I activities are shown on Figure 2.1.2. The acres of disturbance in subsequent phases, outlined by activity in Table 2.1-1, could be redistributed throughout the entire expanded Project Area and occur over a ten-year period. As results from drilling in each phase become available and WPP determines where the next phase of exploration would occur, WPP would submit work plans and updated reclamation costs to the BLM and BMRR to advise the agencies where the next phase of exploration activities would occur within the Project Area.

2.2 Existing and Proposed Exploration Activities

WPP's authorized exploration activities include access road maintenance, road building including water bars, drill pad construction, exploration drilling, and reclamation. Authorized surface disturbance on public land is 100 acres. Some of this disturbance has been reclaimed as shown on Figure 2.1.1. A total disturbance of 400 acres on public land (Table 2.1-1) within the expanded Project Area would include the existing (86.33 acres) and authorized surface disturbance (13.67 acres), proposed Phase I disturbance (28 acres), and proposed subsequent phases of disturbance (272 acres).

The 2010 Plan Amendment proposes to expand the Project Area boundary and increase the amount of surface disturbance associated with exploration activities. In addition to the activities listed above, overland travel routes and drill sites would be included as well as construction of trenches, one lay down yard, up to five ground water monitoring wells, and major and minor maintenance of existing access roads. Project activities would be implemented using the appropriate Best Management Practices (BMPs) established by the NDEP and the Nevada Division of Conservation Districts (1994) *Handbook of Best Management Practices*, adopted by the State Environmental Commission December 7, 1994. The following sections describe general operating procedures, construction techniques, and equipment WPP anticipates using.

Figure 2.1.1: Existing Surface Disturbance

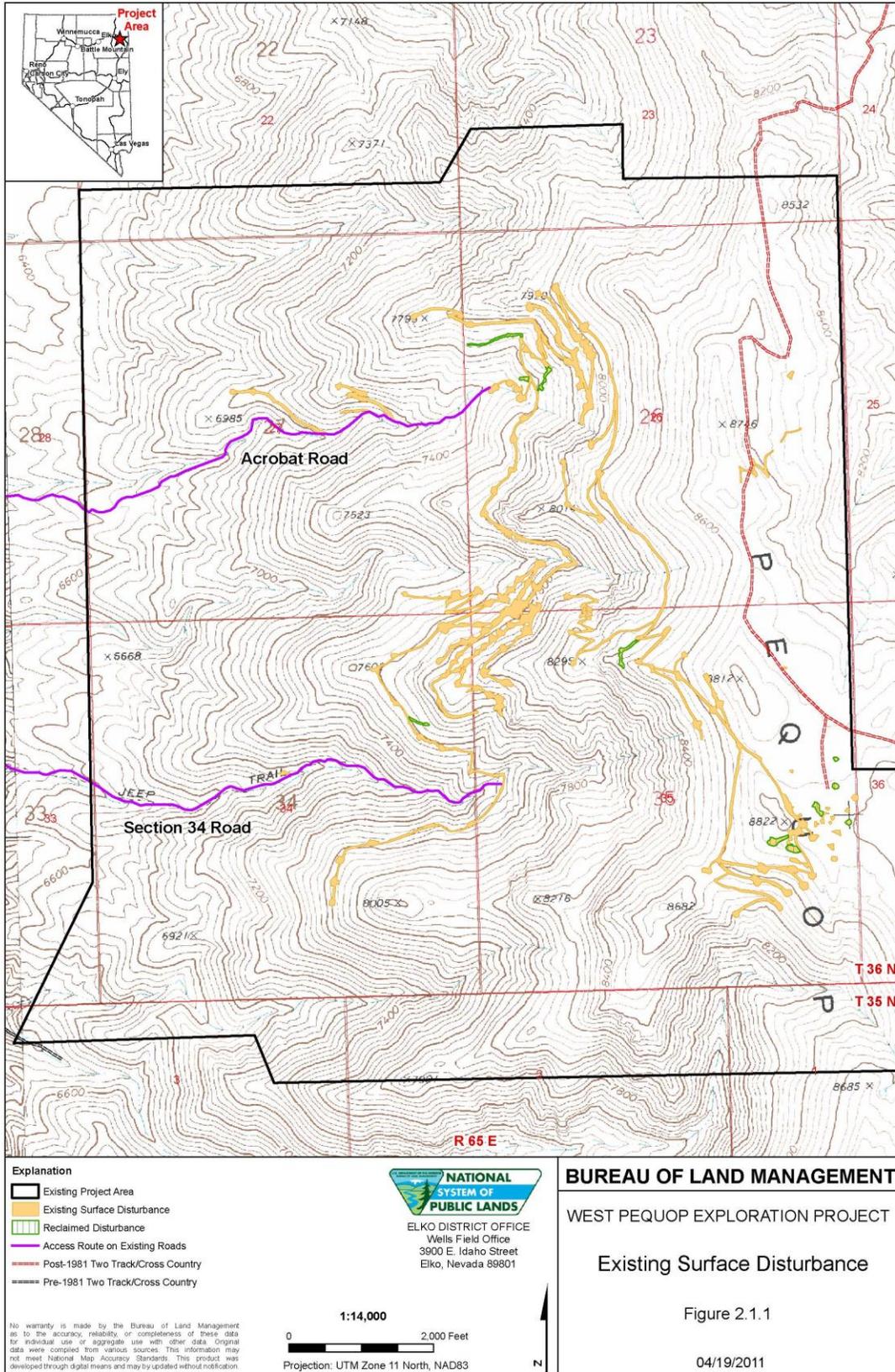


Figure 2.1.2: Proposed Expanded Project Area and Phase I Exploration Areas

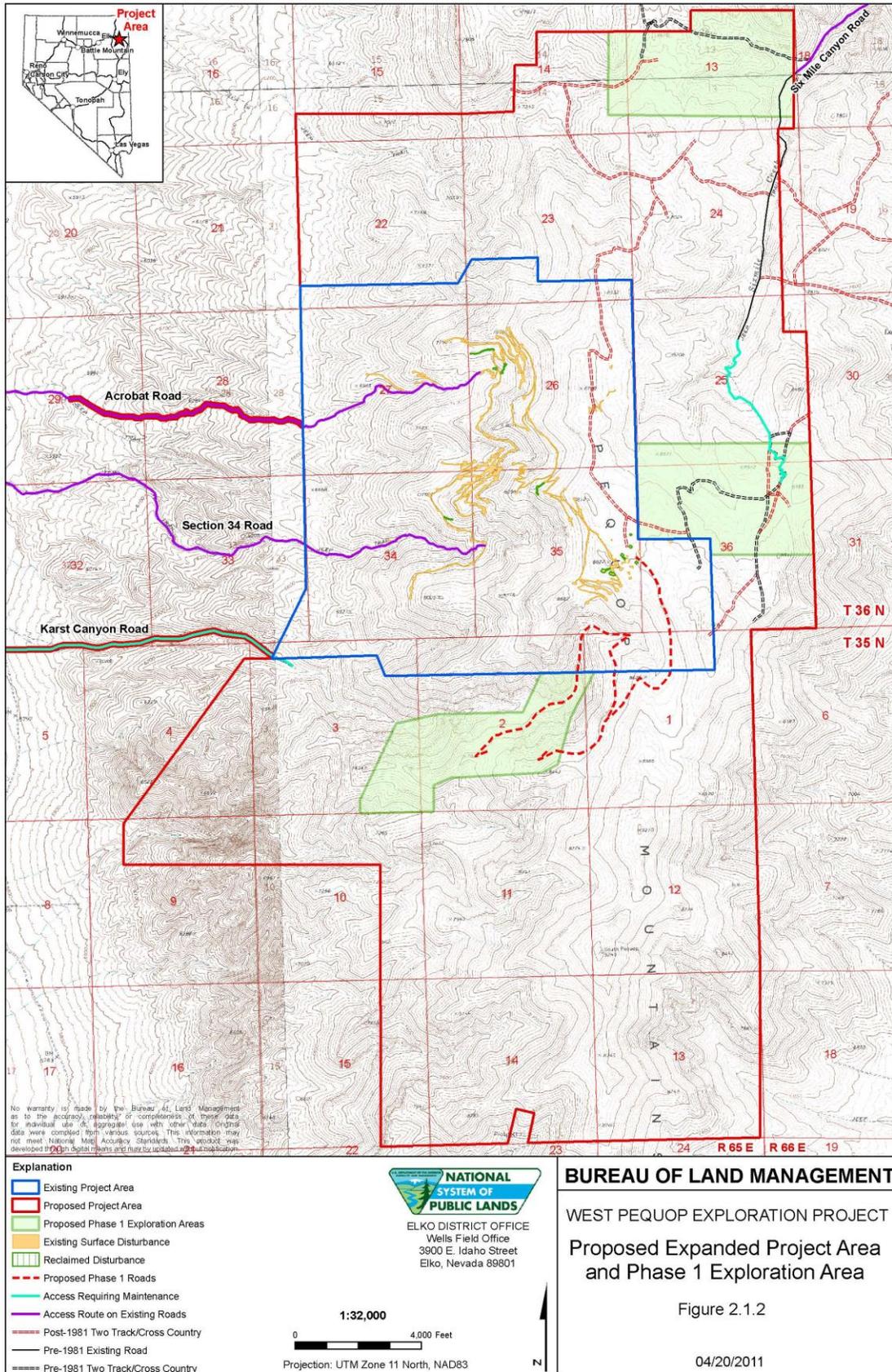


Table 2.1-1: Existing and Proposed Project Related Surface Disturbance

Project Component	Land Status	Approved Acres (2000 Plan)		Proposed Acres		Total Acres
		Existing Disturbance (acres)	Not Disturbed (acres)	Phase I (acres)	Future Phases (acres)	Total Project-Related Disturbance (acres)
Access Roads (including maintenance)	Public	5.11	0.00	9.12	7.60	21.83
	Private	1.18	0.00	0.88	0.00	2.06
Constructed Roads	Public	48.56	9.53	9.00	129.59	196.68
Constructed Drill Sites, Sumps, and Spoil Piles	Public	25.26	4.14	7.00	117.56	154.56
Overland Travel	Public	3.30	0.00	2.00	10.00	14.70
Trenches	Public	0.00	0.00	0.00	5.00	5.00
Monitoring Wells	Public	0.00	0.00	0.00	2.00	2.00
Lay Down Yard	Public	0.00	0.00	0.00	0.25	0.25
Reclaimed Areas Requiring Revegetation	Public	2.92	0.00	0.00	0.00	2.92
Total Disturbance		86.33	13.67	28.00	272.00	400.00
Total Disturbance by Land Status	Private	1.18	0.00	0.88	0.00	2.06
	Public	86.33	13.67	27.12	272.00	397.94

2.2.1 Lay Down Yard

WPP, to the extent possible, would utilize drill site disturbance to store drilling supplies and equipment. However, as the Project progresses and a greater number of drill rigs are utilized, WPP may elect to construct a lay down area to store drilling supplies and equipment in subsequent phases. The lay down area would measure approximately 100 feet long by 100 feet wide and would likely be constructed in an area with a gentle or flat slope to minimize surface disturbance. Construction would consist of clearing vegetation and topsoil to create a clearing with a slight grade to reduce ponding of meteoric waters. Topsoil would be cleared and stockpiled within the disturbance area of the yard to be later utilized for reclamation. The lay down yard would be fenced. The lay down yard would not be constructed in Phase I. The exact location of the lay down yard would be determined at a later time and is not expected to impact an entire population of any unique plant community in the Project Area. WPP would consult with the BLM on the location of the Lay Down Yard prior to construction.

2.2.2 Drill Sites and Drilling Procedures

New drill site disturbance would be kept to the minimum necessary for safe access and a safe working area for equipment and crew. Sites would be constructed with working areas of approximately 0.03 acre. Sumps located adjacent to the drill sites would be constructed as necessary to collect drill cuttings and manage drilling fluids. Spoil piles would be located at the edge of the sump to facilitate backfilling during reclamation. Sump and spoil pile working areas would average approximately 0.02 acre. Drill site construction would occur in areas of varying topography; therefore, actual disturbance would vary. In flat and gentle terrain, the disturbance areas would not greatly exceed the working areas. In steeper terrain, disturbance areas for drill

sites, sumps, and spoil piles could measure up to approximately 0.35 acre. When feasible, WPP would avoid disturbance activities where the toe of fill from a road cut or drill pad cut meets the top of a lower cut or disturbance and would use alternate routes or locations.

WPP has disturbed approximately 23.40 acres through drill site construction at the Project Area (Figure 2.1.1). Once the 2010 Plan Amendment is approved, WPP anticipates up to nine acres would be disturbed in the construction of 20 to 25 drill sites as part of Phase I.

Drill holes would be both vertical and angled with average drill depths of approximately 1,000 feet. Cuttings not bagged and removed during sample collection would be used as a source of backfill and placed back down the borehole. Generally, all drill holes would be plugged prior to the drill rig moving from the drill site in accordance with Nevada Revised Statute (NRS) 534 and NAC 534.4369 and NAC 534.4371. In subsequent phases, up to three drill holes would be collared with a reverse circulation drill rig and completed using a core rig. Once the core rig has completed drilling, the hole would be plugged. If casings are set in a borehole, the boreholes would be completed as wells and plugged pursuant to NRS 534.420, or the casings would be completely removed from the boreholes when they are plugged pursuant to Section 31. The upper portion of the borehole may be permanently cased if the annulus is completely sealed from the casing shoe to surface pursuant to NAC 534.380.

2.2.3 Trenching and Bulk Sampling

WPP would perform trenching activities in subsequent phases of the Project for the purpose of obtaining bulk samples. Trenches would be excavated using a Caterpillar 320 excavator or equivalent. Excavated materials would be stockpiled along the length each trench, or otherwise placed in close proximity to facilitate backfilling. Exact dimensions and locations of the trenches/bulk samples cannot be identified at this time because sample sites would depend upon exploration results; however, this would depend on drilling results and larger trenches may be necessary. It is expected that these activities could disturb up to five acres over the life of the Project. Surface disturbance would include the excavation, the spoil pile, and any required equipment access. Once the locations of trenches have been determined, and prior to excavation, WPP would notify the BMRR and BLM and provide an updated reclamation cost estimate.

2.2.4 Road Construction and Access

The Project Area would be accessed from I-80 via existing roads (Figure 1.1.1). A total of four access routes would be utilized throughout the life of the Project. Three routes would access the western portion of the Project, and one route would be utilized to access the eastern portion of the Project. The Acrobat access route on the west side of the Project was partially constructed by PNG in the 1990s. The other three access roads were constructed prior to January 1, 1981. WPP would use all access roads to transport heavy equipment and personnel to the Project Area. It is anticipated that the primary access would occur from the west portion of the Project Area on the Acrobat access. WPP would utilize the Section 34 and Karst Canyon access routes to transport drill rigs and personnel as the Project progresses, and exploration activities move south. WPP would use the Six Mile Canyon access route to transport drill rigs and project personnel to the easternmost portions of the expanded Project Area. In addition, WPP would require the Six Mile Canyon access as a secondary escape route in the case of fire or other instance where personnel would require an emergency exit from the Project Area.

Portions of the Six Mile Canyon and Karst Canyon access roads would require major maintenance to allow safe passage of Project-related equipment. Major maintenance could include repairing erosion damage, repairing water bars or other surface drainage, grading, blading, widening, and placing berms as warranted and required by the Mine Safety and Health Administration (MSHA). The areas requiring major maintenance are shown on Figure 2.1.2. The remaining portions of existing access roads would also be maintained by WPP to ensure public safety and reduce damage from erosion. Minor maintenance activities would be limited to the footprint of the existing road and would not increase the surface disturbance. Minor maintenance of access roads would include minor seasonal regrading and reestablishment of water bars as necessary, as outlined in the BLM Manual 9113, smoothing rutted surfaces and potholes, and potential graveling to reduce erosion and formation of bug dust. If road gravel is necessary to improve some of the roads in the area, the gravel would be obtained from a BLM approved source. Minor maintenance of access roads would be conducted only on an as-needed basis and would include minor seasonal regrading and maintenance of drainage features as necessary. All minor maintenance activities would be consistent with applicable BLM approved BMPs. Erosion control would be monitored in the spring and fall.

When new road construction is necessary, roads would be built with an 18-foot running surface including a safety berm where required. Road construction would occur in areas with varying topography. As a result, the disturbance width would vary between 18 feet and 43 feet. Balanced cut and fill construction would be used to the extent practicable to minimize the exposed cut slopes and the volume of fill material. Since the depth of cut would be kept to a minimum, growth media removed during construction would be stockpiled as part of the fill slope to be used during reclamation. Road construction within drainages would be avoided whenever possible and the deposition of materials would not occur within the active channel. When drainages must be crossed with a road, BMPs established by the Nevada Division of Conservation Districts Handbook of Best Management Practices, adopted by the State Environmental Commission on December 7, 1994, would be followed to minimize the surface disturbance and erosion potential. Culverts would generally not be installed on exploration roads. However, if a culvert is necessary, the placement and size would be approved by the BLM and the NDEP.

Road construction would be performed with a dozer or a trackhoe and would occur intermittently throughout the life of the Project. As previously stated, WPP would utilize existing roads to the fullest extent possible. Road grades would be kept to an average of ten percent or less to minimize erosion. Where steeper grades are unavoidable, water bar spacing would not exceed 400 feet.

2.2.5 Ground Water Monitoring Wells

WPP would construct up to five ground water monitoring wells within the Project Area in subsequent phases to collect baseline data for future use. Ground water monitoring wells would be drilled in accordance with NAC 534.4351 through 534.4363. WPP would either complete up to five exploration drill holes for use as ground water monitoring wells or drill new wells, if needed. In accordance with NAC 534.4361.1, a surface pad would be constructed around each monitoring well. It is anticipated each monitoring well surface pad would measure approximately 0.4 acre. The monitoring wells would be plugged in accordance with NAC 534.4365.

Monitoring wells would not be constructed in Phase I. The location and depth of potential ground water monitoring wells would be determined at a later time. Once determined, WPP would notify the BLM, BMRR, and the Division of Water Resources (DWR), and adjust the reclamation cost estimate accordingly.

2.2.6 Equipment

Project personnel would access the Project Area in four-wheel drive vehicles. Over the life of the Project, drilling would be conducted with up to five truck-mounted reverse circulation drill rigs and two core drill rigs or equivalent. Phase I drilling would be conducted with up to two truck-mounted reverse circulation drill rigs and one core drill rig. The following equipment could be used over the life of the Project:

- Up to five reverse circulation drill rigs;
- Up to two core drill rigs;
- Up to four water trucks (5,000-gallon);
- Up to seven mud mixing tanks and pumps;
- Up to seven circulation tanks;
- Up to six all-terrain vehicles;
- Up to seven pipe trucks;
- One booster truck;
- One auxiliary air compressor;
- Up to two portable light plant/generator;
- One bulldozer;
- One excavator;
- One all-terrain vehicle with a seed broadcaster;
- Up to ten four wheel drive vehicles; and
- Up to two portable trailers/supply sheds.

A Caterpillar D8 bulldozer or equivalent would be used to construct roads and drill sites where needed. Roads and drill sites would be reclaimed using an excavator and an all-terrain vehicle with a seed broadcaster, or a comparable method.

2.2.7 Water Use

Only water or nontoxic drilling fluids may be utilized, as necessary, during drilling. WPP would obtain water from a water well located in Section 20, T36N, R65E (Nevada Division of Water Resources Permit Number 62041). WPP is in the process of obtaining the applicable permits and would provide copies of the documentation to the BLM and BMRR. WPP may, in future phases, acquire water from an alternate source. The BLM and the BMRR would be notified of the source and provided with copies of all applicable permits.

2.2.8 Work Force

Standard drilling procedures would require a geologist available for guidance throughout drilling activities to manage the drill rig, log drill cuttings or cores, determine maximum drill depth, and advise the drill rig operator as needed. Standard drill rig crews would consist of a drill rig operator and one to two laborers. The drill rig operator would be in charge of the drill rig and would make decisions regarding drilling techniques and equipment. Laborers would be responsible for removing and boxing the recovered core samples, removing the cuttings from the drill rigs, mixing drilling fluids in a portable mud tank, operating the water truck, assisting with drilling operations, and conducting maintenance as necessary. Up to a total of 28 individuals (three contract personnel per drill rig crew and one WPP-employed geologist per drill rig for seven drill rigs) could be in the Project Area at the same time. During Phase I, it is anticipated that up to nine contract personnel and three geologists would be on site. Drilling activities would generally be limited to daylight hours but may continue up to 24 hours per day for some drill rigs.

2.2.9 Surface and Ground Water Control

BMPs for sediment control would be utilized during construction, operation, and reclamation to minimize sedimentation from disturbed areas. Proposed construction and drilling activities would avoid impacts to springs and seeps by placement of fabric or straw bale (certified weed-free) filter fences down slope from surface disturbance that would occur upslope of water sources to prevent sediment runoff. In order to facilitate drainage and prevent erosion, waterbars would be constructed on all bladed roads, as needed, at BLM-recommended spacings.

Sediment control structures could include, but not be limited to, fabric or straw bale (certified weed-free) filter fences, siltation or filter berms, mud pits, and downgradient drainage channels in order to prevent unnecessary or undue degradation to the environment. Sediment traps, constructed as necessary on drill pads, would be used to settle drill cuttings and prevent their release.

No construction or drilling activities of any kind would take place in a spring, seep, or riparian area.

2.2.10 Surface Occupancy

Under 43 CFR 3715.0-5, occupancy means full or part-time residence on the public lands. It also means activities that involve residence; the construction, presence, or maintenance of temporary or permanent structures that may be used for such purposes; or the use of a watchman or caretaker for the purpose of monitoring activities. Residence or structures include, but are not limited to, barriers to access, fences, tents, motor homes, trailers, cabins, houses, buildings, and storage of equipment or supplies. WPP plans to utilize up to two portable trailers as office space and to safely store drilling supplies. In addition, WPP would construct up to five ground water monitoring wells in future phases. Ground water monitoring wells would each be equipped with above ground covers or locks, which meet the definition of temporary structures. WPP would also install a weather monitoring station within a disturbed area such as a drill pad location so as not to add to surface disturbance.

2.2.11 Solid and Hazardous Materials

All refuse generated by the Proposed Action would be transported off site and disposed of at an authorized landfill facility off site, consistent with applicable regulations. No refuse would be disposed of on site. Water or nontoxic drilling fluids or products, including Abandonite, Alcomer 120L, bentonite, EZ-mud, polyplus, and super plug, would be utilized as necessary during drilling and would be stored within the Project Area.

Hazardous materials utilized within the Project Area would include diesel fuel, gasoline, and lubricating grease. Approximately 500 gallons of diesel fuel would be stored in fuel delivery systems on vehicles and drill rigs. Approximately 150 gallons of gasoline would be stored in fuel delivery systems for light vehicles. Approximately 100 pounds of lubricating grease would be stored on the drill rigs or transported by drill trucks. All containers of hazardous substances would be labeled and handled in accordance with Nevada Department of Transportation (NDOT), NDEP, Environmental Protection Agency (EPA), and MSHA. In the event hazardous or regulated materials, such as diesel fuel, were spilled, measures would be taken to control the spill, and the BLM, NDEP, and the Emergency Response Hotline would be notified, as required. In addition, a spill kit would be kept on site. If any oil, hazardous material, or chemicals are spilled during operations, they would be cleaned up immediately. After clean up, the oil, noxious fluids, or chemicals, and any contaminated material would be removed from the site and disposed of at an approved disposal facility.

Self-contained, portable, chemical toilets would be used for human waste and all human waste would be hauled off site.

2.2.12 Reclamation

Reclamation would be completed to the standards described in 43 CFR 3809.420 and NAC 519A. Reclamation would meet the reclamation objectives as outlined in the United States Department of Interior Solid Minerals Reclamation Handbook #H-3042-1 (BLM, 1992), Surface Management of Mining Operations Handbook H-3809-1 (BLM, 1989), and revegetation success standards per BLM/NDEP "Revised Guidelines for Successful Mining and Exploration Revegetation" (BLM, 1999). Existing roads would be utilized as much as possible, minimizing the need for road construction. All WPP drill sites, sumps, trenches, and road construction would be recontoured. Trenches would be reclaimed at the end of the field season in the year in which they were built.

The proposed acres of disturbance shown in Table 2.1-1 specifies the Phase I disturbance and provides a preliminary estimate of the surface disturbance from the subsequent phases by disturbance type (i.e., roads, pads, trenches, and staging areas). In order to verify that the surface disturbance due to Project roads and other features remain within the BLM and NDEP authorized limits, WPP would conduct Global Positioning System (GPS) mapping at the end of each field season and submit the resulting disturbance calculations in conjunction with the annual reclamation report that would be provided to the BMRR and BLM by April 15th of each subsequent year.

2.2.12.1 Schedule of Reclamation

The Proposed Action does not modify the previously proposed and authorized reclamation activities associated with the Project. Reclamation activities would be conducted concurrently with exploration activities when the disturbance is no longer needed. Reclamation would begin within exploration areas considered inactive, without potential, or completed, at the earliest practicable time. Earthwork and revegetation activities are limited by the time of year during which they can be effectively implemented. Table 2.1-2 outlines the anticipated reclamation schedule on a quarterly basis. Site conditions or yearly climatic variations may require that this schedule be modified to achieve revegetation success. Reclamation activities would be coordinated with the BLM and BMRR whenever necessary. The proposed reclamation is expected to have a duration of up to four years from the time of commencement of final reclamation and would be initiated within one year after the completion of exploration activities. Revegetation is anticipated to take three years after the time of seeding to achieve success.

Table 2.1-2: Anticipated Exploration Reclamation Schedule

TECHNIQUES	Quarter				Year(s)
	1 st Jan-Mar	2 nd April-June	3 rd Jul-Sept	4 th Oct-Dec	
Regrading					Within one year of Project completion
Seeding					Within one year of Project completion
Monitoring					3 years beyond regrading and reseeding

2.2.12.2 Drill Hole Plugging

All of the ground water monitoring wells would be plugged and abandoned according to NDWR requirements at some time in the future when they are no longer needed for environmental baseline data collection. WPP anticipates that the monitoring and data collection would continue for a minimum of four years following the completion of the monitoring wells. All of the ground water monitoring wells would be plugged and abandoned at the same time.

Except for the reverse circulation rotary holes that may be drilled as pre-collars for some of the core holes as discussed in Section 2.2.2, all drill holes (i.e., boreholes) would be plugged prior to the drill rig moving from the drill site in accordance with NRS 534 and NAC 534.4369 and NAC 534.4371. If any drill hole encounters artesian conditions, the drill hole would be contained pursuant to NRS 534.060 and NAC 534.378 and would be sealed by the method described in subsection 2 of NAC 534.4371. If casings are set in a drill hole, either the drill hole must be completed as a well and plugged pursuant to NAC 534.420 or the casings would be completely removed from the drill hole and then the hole would be plugged according to NAC 534.4369 and NAC 534.4371.

2.2.12.3 Regrading and Reshaping

Regrading and reshaping of all constructed drill sites, exploration roads, trenches, monitoring well sites, and lay down yard, would be completed to approximate the original topography. Fill material, enhanced with growth media, would be pulled onto the roadbeds, and drill/well sites to fill the cuts and restore the slope to natural contours. Topsoil removed and stockpiled during the

construction of the lay down yard would be replaced on the cleared area and regraded. Sumps and trenches would be backfilled with the stockpiled spoil pile. Reclamation work would be completed with an excavator and dozer as necessary.

Should any drainages be disturbed, they would be reshaped to approach the pre-construction contours. WPP would utilize BMPs to reduce erosion and sedimentation during regrading and reshaping drainages. The resulting channels would be of the same capacity as up and downstream reaches and would be made non-erosive by use of surface stabilization techniques (rip-rap) where necessary, and ultimately revegetated. Following completion of earthwork, all disturbed areas would be broadcast seeded. No major work in drainages would be conducted if water is present or unless the BLM is notified.

2.2.12.4 Revegetation

Generally, seedbed preparation and seeding would take place in the fall after regrading of disturbed areas. All reclaimed areas would be scarified and then broadcast seeded with a cyclone-type bucket spreader or a mechanical blower. Broadcast seed would be covered by harrowing, raking, or other site-specific appropriate methods as necessary to provide seed cover and enhance germination. Reclaimed surfaces would be left in a textured or rough condition (e.g., small humps, pits) to enhance moisture retention and revegetative success while minimizing erosion potential. WPP would consult with the BLM prior to seeding to determine what may be necessary to prevent soil erosion and accelerate vegetation establishment on steep slopes with large areas of disturbance. The BLM may require WPP to use soil amendments and/or install physical stabilization controls such as straw mat/geotextile to ensure that vegetation establishes as quickly as possible, and that excessive erosion does not occur prior to vegetation establishment.

The seed list, provided by the BLM and shown in Table 2.1-3, is based on known soil and climatic conditions and was selected to establish a plant community that would support the post-exploration land use. The mix is designed to provide species that can exist in the environment of northeastern Nevada, are proven species for revegetation, or are native species found in the plant communities prior to disturbance. Native species would be preferred in the reclamation seed mix. Broadcast seeding would be at a rate of approximately 7.5 to nine pounds of pure live seed (PLS) per acre. Changes or adjustments to the reclamation plant list or application rate would be completed in consultation with, and approval by, the BLM and BMRR.

Timing of revegetation activities is critically important to the overall success of the program. Seeding activities would be timed to take advantage of optimal climatic periods and would be coordinated with other reclamation activities. In general, earthwork and drainage control would be completed in the summer or early fall. Seedbed preparation would generally be completed in the fall, either concurrently with or immediately prior to seeding. Seeds would be sown in late fall to take advantage of winter and spring precipitation and optimum spring germination. Early spring seeding may be utilized for areas not seeded in the fall. In either case, seeding would not be done when the ground is frozen or snow covered.

A minimum of two revegetation test plots would be installed within the Project Area to test the initial success of reclamation and revegetation techniques and seeding. Baseline vegetation reference plot data would be used to measure the success of the test plots.

Table 2.1-3: Preliminary Revegetation Seed Mixture

Common Name	Scientific Name	Application Rate Pure Live Seed (pounds per acre)
GRASSES		
Sherman Bluegrass	<i>Poa ampla</i>	0.5
Indian ricegrass	<i>Oryzopsis hymenoides</i>	3.0
Thickspike wheatgrass	<i>Elymus lanceolatus</i>	3.5
Snake River wheatgrass	<i>Elymus wawawaiensis</i>	5.5
Bottlebrush squirreltail	<i>Elymus elymoides</i>	1.0
Small burnet	<i>Sanguisorba minor</i>	0.25
Blue flax	<i>Linum lewisii</i>	0.25
SHRUBS		
Wyoming big sagebrush	<i>Artemisia tridentata ssp. Wyomingensis</i>	0.2

2.2.12.5 Removal or Stabilization of Building, Structures, and Support Facilities

Up to two temporary structures could be utilized for office space and to store drilling supplies during the life of the Project as well as up to five ground water monitoring wells. All equipment, temporary structures, and supplies would be removed following completion of the Project. Other materials, including scrap, trash, and unusable equipment, would be removed on a daily or weekly basis and disposed of in accordance with federal and state regulations and laws.

2.2.13 Environmental Protection Measures

WPP commits to the following environmental protection measures to prevent unnecessary or undue degradation during construction, operation, and reclamation of the Proposed Action. The measures are derived from the general requirements established in the BLM's Surface Management Regulations at 43 CFR 3809 and BMRR mining reclamation regulations, as well as other water and air quality regulations.

Air Quality

- Emissions of fugitive dust from disturbed surfaces would be minimized by utilizing appropriate control measures. Surface application of water from a water truck is the current method of dust control during high wind conditions (greater than 25 miles per hour).

Cultural Resources

A finding of no adverse effects to historic properties for the Project is contingent upon adherence to the following protection measures. For purposes of this EA, a historic property is defined as any cultural resource that qualifies for listing on the National Register of Historic Places [NRHP] or which has not yet been evaluated for the NRHP.

- WPP would adhere to the stipulations set forth in the Programmatic Agreement (PA) for the Project. The PA shall fulfill BLM's cultural resource responsibilities under Section 106 of the National Historic Preservation Act. The BLM and Nevada State Historic Preservation Officer (SHPO) shall be signatory parties in the PA, while WPP shall be a concurring party.
- WPP would avoid or mitigate any eligible or unevaluated historical or archaeological site, structure, building or object. Pursuant to 43 CFR §10.4(g), WPP would notify the BLM authorized officer, by telephone and with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR § 10.2), and any previously undocumented archaeological, historic or paleontological sites.
- Further pursuant to 43 CFR 10.4 (c) and (d), the operator would immediately stop all activities in the vicinity of the discovery and not commence again for 30 days until a Notification to Proceed certification is received from the BLM authorized officer, or a binding agreement is executed between the federal agency and the affiliated Indian tribes, according to 43 CFR 10.4d(2): "The activity that resulted in the inadvertent discovery may resume thirty (30) days after certification by the notified Federal agency of receipt of the written confirmation of notification of inadvertent discovery if the resumption of the activity is otherwise lawful. The activity may also resume, if otherwise lawful, at any time that a written, binding agreement is executed between the Federal agency and the affiliated Indian tribes that adopt a recovery plan for the excavation or removal of the human remains, funerary objects, sacred objects, or objects of cultural patrimony following 10.3 (b)(1) of these regulations. The disposition of all human remains, funerary objects, sacred objects, or objects of cultural patrimony must be carried out following 10.6."

Invasive, Nonnative Species

- Eradication measures would be implemented in coordination with the BLM if noxious weeds were found. All herbicide applications would utilize BLM approved chemicals and surfactants, be made by licensed pesticide applicators, all state and federal laws, policies, and regulations would be followed, and PARS (Pesticide Application Records) would be completed within 24 hours of application and submitted to the BLM within three weeks of application.
- The revegetation portions of the reclamation bond would not be released until all noxious weed infestations are controlled.

- As part of noxious weed monitoring, WPP would ensure that an annual noxious weed survey is conducted along existing access roads and all disturbed areas within the Project Area.
- Noxious weeds would be controlled through implementation of preventive BMPs, which would include, but not be limited to the following: (a) any heavy equipment or passenger vehicles moving in to the Project Area from another project site would have wheel wells, wheels and tires, bumpers, undercarriage, etc., cleaned with high pressure water to remove any weed seeds prior to moving onto the site; (b) only certified weed-free seed would be used for reclamation seeding; and (c) all reclamation would be monitored for infestations of noxious weeds. Table 2.2-1 outlines the weed and invasive species control BMPs.

Table 2.2-1: Weed and Invasive Species Control Best Management Practices

BMP	Purpose
Equipment washing prior to moving onto Project Area.	Reduces spread of invasive species into Project Area.
Use certified weed-free seed for reclamation.	Reduces introduction of invasive species into Project Area.
Avoiding disturbance to known populations	Reduces spread of species into Project Area.
Removal of populations in reclaimed areas	Manage spread of invasive species in disturbed areas to allow native vegetation to establish.
Concurrent reclamation	Reduces the establishment of invasive species in disturbed areas.
Monitoring of reclaimed areas.	Identifies populations of invasive species in early stages.

- Drill sites, sumps, and trenches would be reclaimed as soon as practicable after completion of logging and sampling.

Paleontological

- WPP would not knowingly disturb, alter, injure, or destroy any scientifically important paleontological deposits. If WPP discovers any scientifically important paleontological resource that might be altered or destroyed by operations, the discovery would be left intact and reported to the authorized BLM officer.

Access and Safety

- Public safety would be maintained throughout the life of the Project. All equipment and other facilities would be maintained in a safe and orderly manner.
- In the event that any existing roads in the Project Area are severely damaged as a result of WPP activities, WPP would return them as close as possible to their original condition.
- All applicable state and federal fire laws and regulations would be complied with and all reasonable measures would be taken to prevent and suppress fires in the Project Area.
- All equipment would be properly muffled and equipped with suitable and necessary fire suppression equipment, such as fire extinguishers and hand tools. All Project-related

traffic would observe prudent speed limits to enhance public safety, protect wildlife and livestock, and minimize dust emissions. All activities would be conducted in conformance with applicable federal and state health and safety requirements.

Migratory Birds

- Prior to surface disturbance being conducted during the avian breeding season (March 15 through July 15), WPP would provide a wildlife biologist to conduct migratory bird nest surveys of active working areas within the Project Area to verify no nesting birds would be affected. During the period from March 15 to May 30, all ground disturbing activities would be completed within 14 days of the date on which the nest survey was performed. If activities begin or last more than 14 days from the date of the most recent nest survey, another nest survey would be performed to ensure that no nests are disturbed and that no take of migratory birds occurs. A single migratory bird nest survey would be performed without the 14-day time restriction for Project activities occurring between May 30 and July 15 as most migratory bird species would have completed their nesting activities by then. If nests are located, 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 birds or nests until they are no longer active.

Wildlife and Range Resources

- All trenches, sumps, and other small excavations that pose a hazard or nuisance to the public, wildlife, or livestock would be constructed with ramps that allow for safe egress. Activities are restricted to frozen or dry ground conditions where feasible. Operations would be curtailed when saturated and soft soil conditions exist.
- The Project is located within an area that may be subject to seasonal operational limitations when mule deer are migrating to their wintering grounds or if they are wintering in the Project Area during the timeframes established by existing NDOW flight survey and collaring data (NDOW, 2011). Limitations on the amount of surface disturbing activities, type and scale of operations, location of disturbance, and timing of operations would be developed annually in consultation with the BLM by assessing on-the-ground conditions in the Project Area using existing and future deer tracking data (collared studies and survey flights).
- Project-related surface disturbance would be avoided within 400 feet of the big game wildlife guzzler located in Section 13, T36N, R65E, when feasible. If Project-related surface disturbance within 400 feet of the guzzler cannot be avoided, WPP would work with the NDOW to relocate the guzzler.
- If access is required through a livestock fence, WPP would replace the livestock fence with a temporary gate.
- WPP would ensure that the gate on the drift fence in the vicinity of Section 9, T36N, R66E, is closed during the times that this road is used for access through Six Mile Canyon.

Water Resources

- Generally, all holes would be surveyed and plugged as an operational procedure immediately after completion of drilling in accordance with NAC Chapter 534.4369 and 534.4371, or if ground water is encountered, plugged as a well pursuant to NAC 534.4365. In subsequent phases up to three drill holes would be collared with a reverse circulation drill rig and completed using a core rig. Once the core rig has completed drilling, the hole would be plugged.

Wastes

- Pursuant to 43 CFR 8365.1-1(b)(3), no sewage, petroleum products, or refuse would be dumped from any trailer or vehicle.
- Only nontoxic fluids would be used in the drilling process.
- Drill cuttings would be contained on site and drill fluids managed utilizing appropriate control measures. Sediment traps would be used as necessary and filled at the end of the drill program.
- Regulated wastes would be removed from the Project Area and disposed of in a state, federal, or local designated area.
- All Project-related refuse would be disposed of on a daily basis consistent with applicable regulations. No refuse would be disposed of on site. In the event that hazardous or regulated materials such as diesel fuel are spilled, measures would be taken to control the spill and the BLM and the NDEP would be notified. The Spill Plan (Appendix D of the Plan) outlines procedures in case of a spill. All drill holes would be abandoned in accordance with applicable federal and state standards.
- WPP would follow the Spill Prevention Plan as specified in the 2010 Plan Amendment.

Reclamation

- Final reclamation of constructed drill sites, exploration roads, trenches, monitoring wells, and lay down yard would be completed to approximate the original topography, and reseeding in the fall season immediately following completion of exploration activities.
- Reseeding would be consistent with all BLM and NDOW recommendations for seed mix constituents, application rate, and seeding methods.
- A minimum of two revegetation test plots would be installed within the Project Area to test the initial success of reclamation and revegetation techniques and seeding. Baseline vegetation reference plot data would be used to measure success of the test plots.

Other

- Any survey monuments, witness corners, or reference monuments would be protected to the extent economically and technically feasible.

2.2.14 Monitoring

Yearly visits to the site would be conducted to monitor the success of the revegetation. The proposed reclamation is expected to have a duration of up to four years from the time of commencement of final reclamation and would be initiated within one year after the completion of exploration activities. Revegetation is anticipated to take three years after the time of seeding to achieve success. Erosion control structures such as waterbars would be monitored in the spring and fall. In addition, monitoring for noxious weeds infestations would be conducted on at least an annual basis.

During exploration activities, monitoring would involve management of drilling procedures to contain cuttings, monitoring road conditions during periods of inclement weather, monitoring of the sediment control measures to ensure they are functioning properly.

A cultural resource monitoring program would involve submitting detailed work plans of the proposed exploration activities for each Phase of the Project to the BLM archaeologist for review. If the BLM determines that an eligible cultural site is within 100 meters of proposed surface disturbing activities, WPP would contract a third party archaeologist to flag and document baseline conditions of the cultural resource site. The documentation would include taking photographs as well as recording spatial information using GPS technology. An archaeological monitor, approved by the BLM and funded by WPP, would be called to the site if surface disturbance activities are within 10 meters. Following reclamation of the disturbance within 100 meters of the cultural site, the third party archaeologist would visit the site and document post-Project conditions to document that the cultural site remained intact and undisturbed. Further guidance for archaeological monitoring activities is provided to WPP through a Programmatic Agreement.

2.3 No Action Alternative

The NEPA requires that an alternative of No Action be analyzed in an EA. Under the No Action Alternative, the Proposed Action would not be approved. WPP could continue exploration activities under their approved Plan #NVN-071287 that would be limited to a maximum of 100 acres of surface disturbance, approximately 80 percent of which is currently disturbed. These 100 acres could be reclaimed and released by the BLM, based on compliance with the revegetation success release criteria; thereby, allowing WPP to create another (sequential) 100 acres of disturbance. Activities associated with this total disturbance of 100 acres of surface disturbance include maintenance of existing access roads, construction of exploration roads, and construction of drill pads, and reclamation.

2.4 Alternatives Considered But Eliminated from Detailed Analysis

WPP and BLM considered several alternatives to the Proposed Action. The alternatives were not practical or did not result in incremental environmental benefits and were, therefore, eliminated from detailed analysis. The first alternative considered was the use of overland travel to avoid construction of roads. This alternative was eliminated due to the fact that it is physically impossible to traverse most of the target areas without constructing roads due to the steepness of the terrain and density of trees.

The second alternative considered and eliminated was permitting less surface disturbance initially, which would result in subsequent amendments to the Plan to obtain the same amount of surface disturbance as the Proposed Action. Permitting in separate amendments would result in increased processing time and potentially loss of field time in an area seasonally limited by weather and wildlife restrictions. This potential alternative was eliminated from detailed analysis because it would not result in incremental environmental benefits given the environmental protection measures included in the Proposed Action and would not meet the need for the Project as discussed in Section 1.2.

The third alternative considered and eliminated was limiting access along the Six Mile Canyon Road to use of the existing road in its current condition rather than permit road maintenance along Six Mile Canyon shown on Figure 2.1.2. However, maintenance is proposed along Six Mile Canyon Road under the Proposed Action to ensure the safety of Project personnel and the public traveling along this road. If access is blocked for any reason (i.e., wildland fire) on the west side of the Project Area, Six Mile Canyon Road would be the only egress for Project personnel. Maintenance of Six Mile Canyon Road is important to the safe operation of the Project; therefore, this potential alternative was eliminated from detailed analysis. Additionally, Six Mile Canyon is the primary access to the north-eastern portion of the Project Area and associated mining claims. This alternative was eliminated as it would limit WPP's access to their mining claims in this part of the Project Area and would, therefore, not meet the purpose of and need for the Project.

3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND CUMULATIVE EFFECTS

3.1 Introduction

The expanded Project Area is located at elevations ranging between 6,400 feet amsl to 9,200 feet amsl and is located on approximately 11,967 acres of public land administered by the BLM and private land. This EA analyzes 300 acres of surface disturbance associated with the Proposed Action. Grazing, mineral exploration, and dispersed recreation have contributed to existing conditions (the baseline that reflects past and present actions) in the Project Area. The cumulative effects of the Proposed Action and alternatives as well as these past, present, and reasonably foreseeable future actions are discussed in Section 3.4.

Resources or elements that are managed under supplemental authorities (subject to requirements specified by statute or Executive Order) must be considered in all BLM environmental documents. Seventeen elements associated with the supplemental authorities listed in the NEPA Handbook (BLM, 2008, Appendix 1) are listed in Table 3.1-1. The table lists the elements and their status in the Project Area as well as the rationale used to determine whether the element is present in the Project Area and if it would be affected by the Proposed Action. Elements that may be affected by the Proposed Action are analyzed in Section 3.2. Those elements listed under the supplemental authorities that do not occur in the Project Area and would not be affected are not discussed further in this EA. The elimination of irrelevant issues follows CEQ policy, as stated at CFR 1500.4.

Table 3.1-1: Project Area Resources or Elements Associated with Supplemental Authorities and Rationale for Detailed Analysis for the Proposed Action

Resource/Element	Not Present	Present/ Not Affected	Present/ Potentially Affected	Rationale/Reference Section
Air and Atmospheric Values			X	See Section 3.2.1.
Areas of Critical Environmental Concern	X			Supplemental authority is not present and not further addressed in this EA.
Cultural Resources			X	See Section 3.2.2.
Environmental Justice	X			No minority or low-income groups would be disproportionately affected by health or environmental effects. (EPA. 1998) Supplemental Authority is not present and not further addressed in this EA.
Farmlands, Prime or Unique	X			Supplemental authority is not present and not further addressed in this EA.
Floodplains	X			Supplemental authority is not present and not further addressed in this EA.
Forest and Rangelands			X	See Section 3.2.3, Forestry and Woodlands See Section 3.2.12, Range Resources
Health and Human Safety		X		Under Executive Order 13045, children are protected from environmental health and safety risks. In accordance with EO 13045,

Resource/Element	Not Present	Present/ Not Affected	Present/ Potentially Affected	Rationale/Reference Section
				the Project would not use pesticides or herbicides. Therefore, the Project poses no health and human safety risk, and this element is not further addressed in this EA.
Invasive, Nonnative Species			X	See Section 3.2.6.
Migratory Birds			X	See Section 3.2.9.
Native American Religious Concerns			X	See Section 3.2.10.
Federally Threatened, Endangered, or Candidate Species (Plants and Wildlife)			X	Not present in Project Area, but is further discussed. See Section 3.2.16.
Wastes (Hazardous or Solid)		X		See Section 3.2.19.
Water Resources/Quality (Surface and Ground Water)			X	See Section 3.2.20.
Wetlands and Riparian Zones	X			Supplemental authority is not present and not further addressed in this EA.
Wild and Scenic Rivers	X			Supplemental authority is not present and not further addressed in this EA.
Wilderness	X			Not present in Project Area, see Lands With Wilderness Characteristics.

In addition to the resources or elements managed under supplemental authorities, the BLM considers other resources and uses that occur on public lands and the issues that may result from the implementation of the Proposed Action. Other resources or uses of the human environment that have been considered for this EA are listed in Table 3.1-2 below.

Table 3.1-2: Project Area Resources or Uses Not Associated with Supplemental Authorities

Other Resources/Uses	Present/ Not Affected	Present/ Potentially Affected	Reference Section
Fuel and Fire Management		X	See Section 3.2.4.
Geology and Mineral Resources		X	See Section 3.2.5.
Grazing Management		X	See Section 3.2.12, Range Resources
Lands and Realty and Land Use		X	See Section 3.2.7.
Lands with Wilderness Characteristics		X	See Section 3.2.8
Paleontological Resources		X	See Section 3.2.11.
Recreation		X	See Section 3.2.13.
Social Values and Economics		X	See Section 3.2.14.
Soils		X	See Section 3.2.15.

Other Resources/Uses	Present/ Not Affected	Present/ Potentially Affected	Reference Section
Special Status Species		X	See Section 3.2.16
Vegetation		X	See Section 3.2.17.
Visual Resources		X	See Section 3.2.18.
Wild Horses and Burros		X	See Section 3.2.21.
Wildlife (General)		X	See Section 3.2.22.

3.2 Effects of the Proposed Action

The direct and indirect effects of the Proposed Action to potentially affected resources are discussed in this section. Impacts as a result of the No Action Alternative and the Cumulative Effects are discussed separately in Sections 3.3 and 3.4.

Direct effects are created by the action and occur at the same time and place. Indirect effects are a result of the action that are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8).

3.2.1 Air and Atmospheric Values

3.2.1.1 Affected Environment

Climate and Meteorology

The Project is located on the west flank and north end of the Pequop Mountains in Elko County, where the climate is arid and characterized by warm, dry summers and cold, wet winters. The mean annual precipitation (including rain and measured precipitation from snow) in Oasis, Nevada, located approximately four miles northeast of the northeast corner of the Project, is 8.6 inches total, with a mean annual snowfall of 23.9 inches (Western Regional Climate Center, 2008). The average annual low and high temperatures are 29.1 and 60.8 degrees Fahrenheit (°F), respectively.

Air Quality

NDEP air quality regions are generally the same as the Hydrographic Basins. The Project is located within the Goshute Valley Air Basin (187) and Independence Valley Air Basin (188). The Goshute Valley and Independence Valley Air Basins are designated by the EPA as “unclassified” per National Ambient Air Quality Standards as set forth in 40 CFR 81.329. An unclassified area is one for which no ambient air quality data are available and the ambient concentrations could be above or below the ambient air quality standards; however, unclassified areas are managed as in attainment. Generally, the ambient air quality over much of the valley is good, due to the limited population and absence of major industrial activity. The Project Area is classified as a Class II area, pursuant to the Prevention of Significant Deterioration regulations promulgated under the Clean Air Act (CAA).

The Goshute Valley and Independence Air Basins are treated as areas “in attainment” with ambient air quality standards. Therefore, new sources within these basins must evaluate their impacts to air quality with respect to the ambient standards. The major source of fugitive dust in the vicinity of the Project Area includes vehicular traffic on unpaved roads and windblown dust.

Climate Change

According to the BLM’s Instruction Memorandum (IM) No. 2008-171, “Guidance on Incorporating Climate Change into Planning and NEPA Documents,” dated August 19, 2008, climate change considerations should be acknowledged in EA documents. The IM states that ongoing scientific research has identified the potential impacts of anthropogenic (man-made) greenhouse gas (GHG) emissions and changes in biological carbon sequestration due to land management activities on global climate. Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused carbon dioxide (CO₂) concentrations to increase dramatically, and are likely to contribute to overall global climatic changes. The IM states that the Intergovernmental Panel on Climate Change recently concluded that “warming of the climate system is unequivocal” and “most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.”

Several activities contribute to the phenomena of climate change, including emissions of GHGs (especially CO₂ and methane) from fossil fuel development, large wildland fires and activities using combustion engines; changes to the natural carbon cycle; and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs would have a sustained climatic impact over different temporal scales. For example, recent emissions of CO₂ can influence climate for 100 years.

Current emissions within the vicinity of the Project Area include vehicle combustion emissions, fugitive dust from travel on unimproved roads, ranch activities, and wildland fires. Emissions of all pollutants are generally expected to be low due to the extremely limited number of sources in the vicinity of the Project Area.

Existing climate prediction models are global in nature; therefore, they are not at the appropriate scale to estimate potential impacts of climate change within the Goshute Valley and Independence Valley Air Basins in which the Project is located. Due to the nature and scale of the Proposed Action, effects on climate change are not further analyzed in this EA.

3.2.1.2 Environmental Consequences

Surface disturbance associated with the Proposed Action could impact up to 300 acres of soils. Travel on dirt access roads, drilling, and excavation activities within the area of the Proposed Action would create fugitive dust, causing a minor impact to air resources. Speed limits on access roads would be observed and travel on roads within the Project Area would be conducted at prudent speeds. Impacts would also be reduced by using water trucks for dust suppression, if required (e.g., when the roads are dry and dusty). Concurrent reclamation including revegetation of proposed surface disturbance would gradually eliminate any potential for long-term impacts to air resources.

3.2.2 **Cultural Resources**

3.2.2.1 Affected Environment

Multiple cultural resource inventories were conducted within the existing approved Plan boundary and associated access routes as described in the Pittston Gold Company, Ltd. Environmental Assessment for the Pequop Project (BLM, 2000).

Between June 16 through 19, 2010, ASM Affiliates, Inc. conducted cultural resource inventories within the proposed Phase I exploration areas within the proposed expanded Plan Boundary and access roads subject to major maintenance (disturbance outside of existing road prism). The inventories consisted of intensive pedestrian surveys focused on high probability areas for archaeological sites falling within each of the three proposed Phase I exploration areas. In accordance with the approved BLM Project authorization, field crews implemented a survey strategy combining block and ridge and drainage transect surveys to achieve coverage of approximately 730 acres considered to have high probability for cultural resources.

Block surveys observed a 100-foot wide transect interval standard and were conducted over a majority of the two northern parcels, where the landscape is dominated by gentle ridges and basins. Ridge and drainage surveys, prescribed for steeper areas not covered by the block inventories, consisted of 45-foot wide transect intervals, generally following the natural contours of the landscape. Per the approved BLM Project authorization, no subsurface testing or artifact collection was conducted by ASM during the inventory. All work was carried out in accordance with guidelines set forth by Section 106 of the NHPA, as amended, the Nevada State BLM Cultural Resources Inventory Guidelines, and the Nevada BLM and State Historic Preservation Office (SHPO) State Protocol Agreement. Fieldwork was completed under ASM's Nevada BLM Cultural Use Permit No. N-77810.

A total of ten new cultural resource sites and 22 isolated finds were identified in the Project vicinity. Archaeological sites and isolates include a combination of prehistoric open-air sites and rockshelters that may have provided temporary shelter to groups using these upland areas for hunting and resource gathering. A few of the sites also have limited historic refuse deposit components, likely related to local ranching and recreation.

Three prehistoric lithic scatters are recommended as eligible for the NRHP based on their potential to yield significant information related to upland hunting patterns. Four rockshelter complexes are recommended to have their NRHP eligibility deferred pending further testing and archaeological study to determine the nature and extent of deposits at each site. The final three

open sites identified by ASM represent small-scale prehistoric lithic reduction areas lacking the potential to yield significant information. Therefore, they are recommended as not eligible for the NRHP.

3.2.2.2 Environmental Consequences

The Proposed Action would result in approximately 300 additional acres of ground disturbance over a period of ten years. The proposed exploration drilling could impact prehistoric sites directly as the result of damage incurred by construction activities. Indirect effects can result from improved access to areas within the Project Area that currently lack good road access and from building roads in close proximity to prehistoric sites. Creation of new or improved access can have substantial and long lasting adverse effects if cultural resources are present. A number of studies (Williams, 1978; Lyneis et al., 1980; Nickens et al., 1981) have shown that increased access leads to both intentional and incidental deterioration of nearby cultural resources. Nickens et al., (1981) found most archaeological sites within approximately 300 feet of improved roads exhibited evidence of vandalism or illegal collection. Sites at considerably greater distances also suffered damage but with less frequency as distance increased (Desjean and Wilson, 1990; Ison et al., 1981; Nickens et al., 1981). With the advent of widespread all-terrain vehicle use in the last decade, the BLM might anticipate the spread of damage beyond new access roads may now be even greater. However, adverse effects can be mitigated or lessened by designing roads and drill pads to avoid eligible cultural resources, using archaeological monitors, requiring employee training regarding cultural resources, and undertaking data recovery at archaeological sites where other measures are not adequate. Further WPP, the BLM, and SHPO would enter into a PA so that the proposed exploration activities within the Area of Potential Effect (APE) would be administered in accordance with the stipulations set forth in the PA to ensure that historic properties would be treated to avoid or mitigate adverse effects to the extent practicable and to satisfy BLM Section 106 responsibilities.

3.2.3 **Forestry and Woodlands**

3.2.3.1 Affected Environment

The dominant vegetation communities within the Project Area are Piñon pine (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) woodlands, Curleaf mahogany (*Cercocarpus ledifolius*) stands, limber pine (*Pinus flexilis*) woodlands, and a Subalpine fir (*Abies lasiocarpa*) forest. Additionally, a grove of white pine (*Pinus monticola*) is located in Six Mile Canyon along a proposed access route to the Project Area. The Project Area is not within a designated or within a proposed old growth management area or within a proposed old growth forest stand. The entire Project Area is located within a designated Christmas Tree Cutting Area. No commercial timber harvest areas are located within the Project Area. The Project Area is open to public firewood collection.

3.2.3.2 Environmental Consequences

Activities associated with the Christmas tree sales would not be restricted and these uses should not be impacted by the Proposed Action. Tree removal associated with road construction and exploration activities would be limited in nature relative to the abundance of the piñon-juniper woodland community within the Project Area and surrounding habitats. Proposed activities in Six Mile Canyon may result in limbing of white pine trees, if necessary, in order to facilitate access along the road; however, the Project would not result in the removal of white pine trees along the Six Mile Canyon Road. Therefore, no impacts to forestry or woodlands would result from the Proposed Action and this resource is not further evaluated in this EA.

3.2.4 Fuels and Fire Management

3.2.4.1 Affected Environment

Approximately 756 acres within the Project Area have burned in wildland fires. The 2001 Mile Marker 267 fire burned approximately 567 acres in the northern portion of the Project Area. The 2007 Independence Valley fire burned 189 acres in the center of the Project Area. The BLM planted numerous tree and bush seedlings and applied an aerial upland seed mix in the area burned by the Mile Marker 267 fire. The BLM manages fuel reduction and habitat enhancement projects in the vicinity of the Project Area. No fuel reduction projects have been conducted or are currently proposed within the Project Area; however, the Payne Basin Treatment Area is located roughly two miles north of the Project Area.

3.2.4.2 Environmental Consequences

Implementation of the Proposed Action would be coordinated with the BLM's fire staff in order to ensure the safety of WPP personnel during all periods of prescribed fire activity in the area. Based on fire avoidance measures to be implemented under the Proposed Action (Section 2.2.13) and the fact that the Project Area would continue to be accessible, no impacts to fire management are anticipated. In addition, reclamation measures include seeding with native vegetation that may be more favorable to fire avoidance and suppression in the long term. Therefore, no impacts to fire management from the Proposed Action are anticipated and this resource is not further evaluated in this EA.

3.2.5 Geology and Mineral Resources

3.2.5.1 Affected Environment

The Pequop Mountains comprise an uplifted block of regionally east-dipping Paleozoic carbonate and siliciclastic rocks. The geology of the Project Area consists of similarly dipping marine and terrestrial sediments ranging in age from middle Cambrian through the Permian. These rocks have been subjected to mild regional metamorphism, related to the nearby Ruby-East Humboldt metamorphic core complex located to the west. The Pequop Mountains have also been subjected to extensional and compressional forces that have broken and folded the range into a series of fault bounded blocks that in turn have been overridden by older rocks along east-trending thrust faults.

The Pequop Mountains are bound to the east and west by range front Basin and Range style faults that have down dropped the adjacent blocks creating the independence and Goshute valleys. These valleys are filled with debris shed from the Pequop Range and adjacent mountain ranges in addition to young Tertiary lake sediments and volcanic ash deposits. Within the Project Area, a variety of rhyolitic to dioritic intrusives have been identified. Generally, these intrusives occur as sills, dikes and rarely as larger bodies within the sediments.

The general stratigraphy of the Project Area begins with middle Cambrian siliciclastic rocks of the Prospect Mountain quartzite. These siliciclastics are overlain by a series of marine limestones, dolostones, silty limestones, shales and siltstones that range in age from middle Cambrian to Ordovician. These marine sediments have been subjected to periods of subaerial exposure that resulted in the development of numerous karst features. Overlying this package of marine sediments is the Ordovician Eureka quartzite marking a shift to more terrestrial sediment deposition. Overlying the Eureka quartzite is a series of Ordovician-Silurian to Permian age marine carbonates and clastic sediments found principally in the northern and southern extremes of the Project Area.

Mineralization in the Project Area is primarily hosted in Cambrian through Ordovician age silty limestones and calcareous siltstones. Exploration activities have also identified mineralization associated with younger Silurian through Mississippian age marine shelf carbonates. Mineralization is present as disseminations within certain favorable horizons, along high angle structures and within karst-developed dissolution features. Mineralization is associated with iron oxide staining, dolomitization, decalcification, argillization, and minor silicification of the host sediments.

3.2.5.2 Environmental Consequences

The Proposed Action would not involve the removal of large amounts of rock other than from outcrops, drill holes, or trenches for geochemical testing and geologic study. The Proposed Action would increase the understanding and knowledge of geology and mineralization within the Project Area. Although the Project would result in removal of rock, the amount of rock proposed to be removed is minimal compared to the amount present in the Project Area. Therefore, the impacts to geology and minerals from the Proposed Action are expected to be minimal and this resource is not further evaluated in this EA.

3.2.6 Invasive, Nonnative Species

3.2.6.1 Affected Environment

An “invasive species” is defined as a species that is nonnative to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112). Invasive, nonnative species are species that are highly competitive, highly aggressive, and easily spread. They include plants, animals, and insects designated as “invasive,” “noxious,” or “pests” by federal, state, or other legally responsible authority. There are no known invasive, nonnative animal species (pests) that are mandated for control in the Project Area; therefore, pests are not further addressed in this EA.

The BLM defines “noxious weed” as “a plant that interferes with management objectives for a given area of land at a given point in time” (BLM, 1996). Approximately 45 weed species are

currently listed as noxious by the State of Nevada in NAC 555.010. The BLM Nevada strategy for noxious weed management is to “prevent and control the spread of noxious weeds through local and regional cooperative efforts... to ensure maintenance and restoration of healthy ecosystems on BLM-managed lands. Noxious weed control would be based on... prevention, education, detection, and quick control of small infestations” (BLM, 1997). The Nevada Department of Agriculture, Plant Industry Division maintains a “Nevada Noxious Weed List.”

Although there are no known noxious weed infestations in the Project Area, known occurrences of Scotch thistle (*Onopordum acanthium*), hoary cress (*Cardaria draba*), and black henbane (*Hyoscyamus niger*) are located in the Pequop Mountain range along existing roads. The Scotch thistle infestation is less than four acres in size and is located in Section 29, T37N, R66E. The hoary cress infestation is approximately nine acres in size and is located in Section 6, T36N, R66E, and the black henbane infestation is 0.25 acre in size and is located in Section 22, T36N, R66E (BLM, 2008). A cheatgrass (*Bromus tectorum*) monoculture approximately ten feet by 30 feet in size occurs within the northeastern portion of the Project Area.

3.2.6.2 Environmental Consequences

New surface disturbance as a result of the Proposed Action would increase the potential for and promote the establishment and spread of invasive, nonnative, and noxious weeds. The risk of noxious weeds impacting the Project Area would be low because there are no known noxious weed infestations in the Project Area and BMPs would be implemented to avoid the introduction of invasive species into the Project Area. BMPs outlined in Section 2.2.13 would include the following: 1) weed prevention and treatment; 2) treat all noxious weeds along existing roads in the Project Area before equipment moves into a weed-free area; 3) reseed areas in the Project Area treated for noxious weeds; 4) clean equipment and vehicles of all mud, dirt, and plant parts before moving into the Project Area; and 5) avoid known areas of invasive, nonnative, and noxious weeds during periods when the seeds could be spread by vehicles..

As stated in Section 2.2.13, noxious weeds would be controlled through the implementation of preventative BMPs and eradication measures conducted in coordination with the BLM if noxious weeds are found within the Project Area. Concurrent reclamation including revegetation would also help to prevent the introduction and/or spread of noxious weeds. WPP would monitor and treat any noxious weed infestations that resulted from ground disturbing activities within the Project Area for at least three years following the treatment of the infestation until reclamation is completed. Treatments would be permitted, applied, and recorded per BLM policy. The BLM and WPP would cooperate to monitor the effectiveness of treatments on noxious weeds. In addition, the reclamation bond would not be completely released until all Project-related noxious weeds are controlled.

3.2.7 Lands and Realty, Public Safety, and Land Use

3.2.7.1 Affected Environment

The Proposed Action is in conformance with the Wells RMP for land use. A number of BLM roads are located within the Project Area. No rights-of-way (ROWs) are located within the Project Area. The Proposed Action would result in minor temporary changes to land use in the Project Area with regard to recreation and grazing. Public safety would be maintained throughout the life of the Project as described in the environmental protection measures

(Section 2.2.13), which include that all equipment and other facilities would be maintained in a safe and orderly manner; all trenches, sumps, and other small excavations that pose a hazard or nuisance to the public, wildlife, or livestock would be adequately fenced to preclude inadvertent access to them; activities would be restricted to frozen or dry ground conditions where feasible; and in the event that any existing roads are severely damaged as a result of WPP activities, WPP would return them to a safe condition in coordination with the BLM.

WPP is not proposing any changes or alterations to existing access roads outside of the Project Area. In addition, activities associated with Christmas tree cutting would not be restricted and these uses should not be impacted by the Proposed Action.

No real estate transactions are a part of the Proposed Action. The expanded area proposed to be added to the Plan boundary and all proposed surface disturbance in the Proposed Action is located on public land managed by the BLM.

3.2.7.2 Environmental Consequences

The Proposed Action would not result in impacts to lands and realty, public safety, or land use; and, therefore, these resource are not further evaluated in this EA.

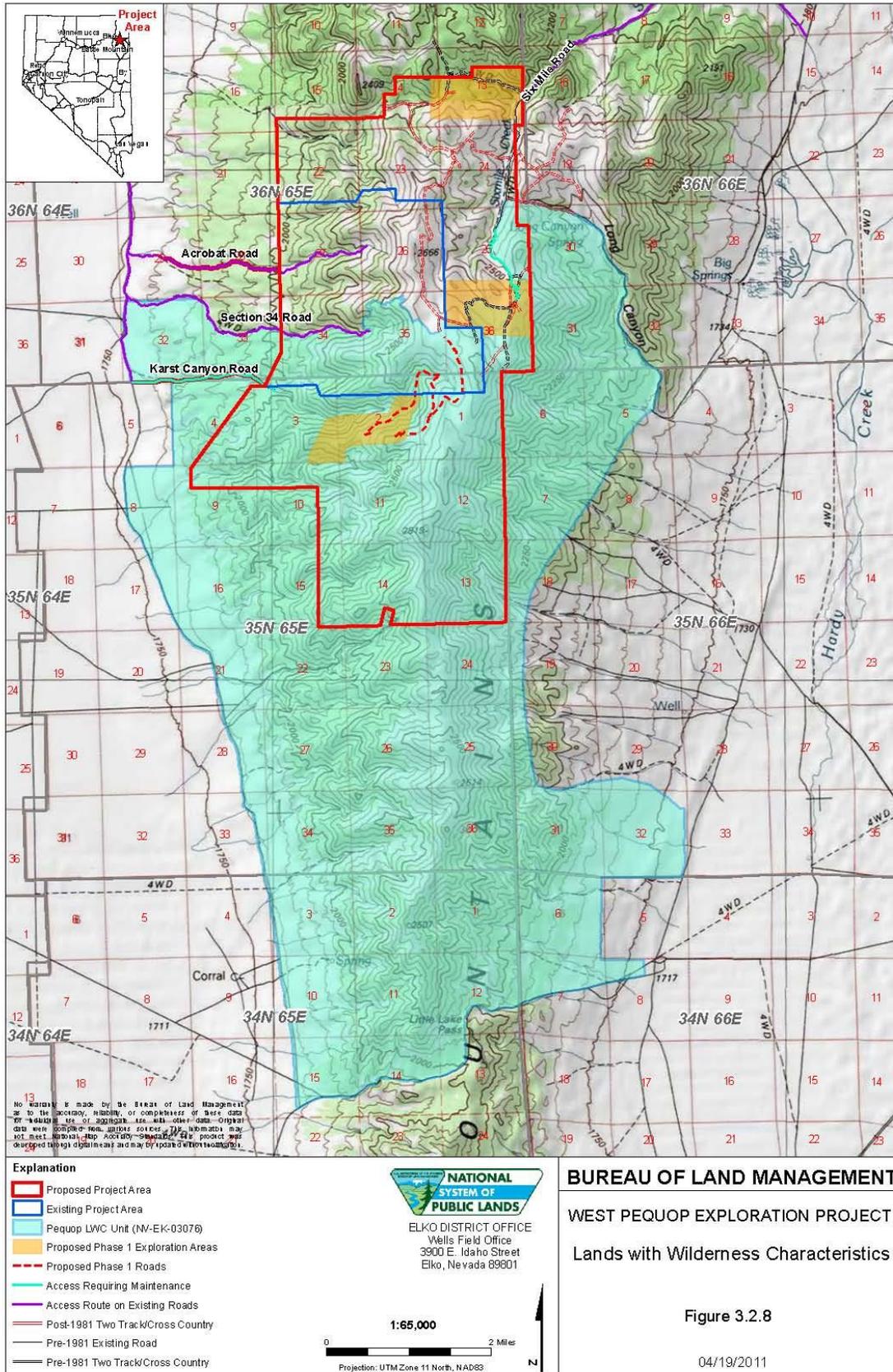
3.2.8 Lands with Wilderness Characteristics

3.2.8.1 Affected Environment

Very few exploration activities have occurred in the South Pequops Mountain Range. In the late 1970's there was a barite production mine and the area's most important feature at that time was a large resource of phosphate-bearing sedimentary rocks. Most exploration activities in the 1970's to middle 1980's have occurred on the crest of the range (LaPointe et al., 1991). In 2000 a Plan of Operations was submitted to the BLM for gold exploration in the South Pequops.

Within the proposed Project Area there are no Wilderness or Wilderness Study Areas (WSAs). The South Pequops WSA is approximately 20 miles south of the Project Area. In 1999, BLM acquired approximately 70,000 acres adjacent to and encompassing the Project Area through the Big Springs Ranch Land Exchange. Under Section 201 of the FLPMA, the BLM is required to maintain an inventory of public lands. Because the Project Area encompasses recently acquired public lands, an area which covers 63,235 acres of BLM lands, including the Long Canyon and West Pequop existing and proposed exploration Project Areas, was inventoried for resource values including wilderness characteristics. Wilderness characteristics are defined in Section 2(c) of the Wilderness Act based on size, naturalness, and outstanding opportunity for solitude or primitive recreation, and may include other supplemental values such as ecological, geological or other features of scientific, educational, scenic, or historical value. A Lands with Wilderness Characteristics file for area NV-EK-03-076 has been created and is located in the Wells Field Office. Of those 63,235 acres in the inventory, the BLM found that 27,835 acres possessed wilderness characteristics and approximately 7,034 acres of the Proposed Expanded Project boundary would be located in the area containing wilderness characteristics (Figure 3.2.8).

Figure 3.2.8: Lands with Wilderness Characteristics



3.2.8.2 Environmental Consequences

The Proposed Action would result in surface disturbance of up to 300 acres within the 7,034 acres of the West Pequop Exploration Project Proposed Expanded Project boundary on the 27,835 acres determined to have wilderness characteristics. However, due to the phased nature of this exploration project, it is anticipated that only some portion of the 300 acres of proposed new temporary surface disturbance would occur in the Pequop LWC Unit.

Size: Implementation of the Proposed Action would directly disturb up to 300 acres. Only the southern half of the Proposed Expanded Project Area is located within the lands having wilderness characteristics. As noted above, although expected to be less, a maximum of 300 acres of surface disturbance could occur within the 27,835-acre LWC Unit, which measures approximately one percent of this area.

Naturalness: Deviations from naturalness are often described in terms of human modification of the natural landscape. The proposed exploration activities would result in surface disturbance from the development of drill pads and new roads, which could temporarily detract from the natural character of the landscape in the immediate vicinity of the surface disturbance. This temporary disturbance would be dispersed throughout the 7,034 acres of the expanded Project Area within the LWC Unit. Due to the rugged topography, vegetative screening, and overall size of the wilderness characteristics area, the naturalness of the areas beyond the immediate disturbance would not be affected.

Outstanding Opportunities for Solitude: Noise from exploration activities would reduce the quality of the opportunity for solitude in the vicinity of the disturbance areas during periods of active operations. Those noise effects would be temporary in that they would last only as long as the exploration was occurring and would cease immediately upon completion of the Project. Visual effects of the Proposed Action would include surface disturbance and movement of machinery and vehicles, both directly in the disturbance areas and at further distances, depending on the topographic and vegetative screening. In most instances a visitor would be able to find solitude in the other 27,835 acres where exploration activities are not taking place. The Proposed Action would not eliminate outstanding opportunities for solitude within the wilderness characteristics area.

Outstanding opportunities for Primitive and Unconfined Recreation: Opportunities for primitive and unconfined recreation would not be diminished within the boundary of the proposed Project Area. Access would remain open to the area for all forms of primitive and unconfined recreation, including hiking, backpacking, fishing, hunting, cross-country skiing, wildlife watching and other non-motorized, and non-mechanized activities. As noted above, the naturalness of areas in the immediate vicinity of the surface disturbance would be temporarily affected during operations; however, these impacts would be spatially and temporally limited, and reclamation of the drill roads would avoid increased motorized use of the area. Consequently, outstanding opportunities for primitive and unconfined recreation would continue to exist throughout the 27,835 acre area.

In summary, impacts to wilderness characteristics, mostly naturalness, would occur temporarily in the immediate vicinity of the surface disturbance within the LWC Unit until reclamation is complete and successful. BLM requires reclamation of all 3809 related activities, including this Project, making all proposed disturbance activities temporary and not expected to permanently

impair the area's wilderness characteristics. Upon completion of the Project, roads and drill pads would be recontoured and reclaimed back to a natural state. Solitude and unconfined types of recreation are not required on every acre in order for the area to have wilderness qualities. Solitude and primitive recreation can be found throughout the remaining portions of the wilderness characteristics area, so these opportunities would not be considered compromised. Additional environmental protection measures as outlined in Section 2.2.13 would prevent impairment of wilderness suitability and undue or unnecessary degradation of land and resources.

Section 201 of FLPMA states that "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values. The preparation and maintenance of such inventory or the identification of such areas shall not, of itself, change or prevent change of the management or use of public lands." Section 301 of FLPMA states that "The Secretary shall manage the public lands under principles of multiple use and sustained yield, in accordance the land use plans developed by him under section 202 of this Act when they are available, except that where a tract of such public lands has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law." The 1985 Wells Resource Management Plan (RMP) does identify additional management prescriptions within Wilderness Study Areas; however, the RMP does not establish management prescriptions for other lands having wilderness characteristics. The proposed Project is consistent with the management directives contained in the RMP.

3.2.9 Migratory Birds

3.2.9.1 Affected Environment

"Migratory bird" means any bird listed in 50 CFR 10.13. All native birds commonly found in the United States, with the exception of native resident game birds, are protected under the Migratory Bird Treaty Act (MBTA). The MBTA prohibits 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.

Additional direction comes from the Memorandum of Understanding (MOU) between the BLM and the United States Fish and Wildlife Service (USFWS), signed April 12, 2010. The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between the BLM and USFWS, in coordination with state, tribal, and local governments. The MOU identifies management practices that impact populations of high priority migratory bird species, including nesting, migration, or over-wintering habitats, on public lands, and develops management objectives or recommendations that avoid or minimize these impacts.

The following migratory birds have been observed in the Project Area: American kestrel (*Falco sparverius*); American robin (*Turdus migratorius*); black-throated gray warbler (*Dendroica nigrescens*); black-throated sparrow (*Amphispiza bilineata*); blue-gray gnatcatcher (*Polioptila caerulea*); Brewer's sparrow (*Spizella breweri*); brown-headed cowbird (*Molothrus ater*); bushtit (*Psaltriparus minimus*); chipping sparrow (*Spizella passerina*); Clark's nutcracker (*Nucifraga*

columbiana); common nighthawk (*Chordeiles minor*); common poorwill (*Phalaenoptilus nuttallii*); common raven (*Corvus corax*); Cooper's hawk (*Accipiter cooperii*); dark-eyed junco (*Junco hyemalis*); gray flycatcher (*Empidonax wrightii*); great horned owl (*Bubo virginianus*); green-tailed towhee (*Pipilo chlorurus*); hairy woodpecker (*Picoides villosus*); house finch (*Carpodacus mexicanus*); house wren (*Troglodytes aedon*); juniper titmouse (*Baeolophus ridgwayi*); horned lark (*Eremophila alpestris*); lark sparrow (*Chondestes grammacus*); loggerhead shrike (*Lanius ludovicianus*); mountain chickadee (*Poecile gambeli*); mountain bluebird (*Sialia currucoides*); mourning dove (*Zenaida macroura*); northern flicker (*Colaptes auratus*); northern harrier (*Circus cyaneus*); piñon jay (*Gymnorhinus cyanocephalus*); plain titmouse (*Parus inornatus*); red-tailed hawk (*Buteo jamaicensis*); red-naped sapsucker (*Sphyrapicus nuchalis*); rock wren (*Salpinctes obsoletus*); and western tanager (*Piranga ludoviciana*).

3.2.9.2 Environmental Consequences

The Proposed Action would result in up to 300 acres of surface disturbance, which could potentially result in the destruction of active nests or disturb the breeding behavior of migratory bird species. As stated in Section 2.2.13, prior to surface disturbance being conducted during the avian breeding season, WPP would provide a wildlife biologist to conduct migratory bird nest surveys of active working areas within the Project Area to verify no nesting birds would be affected. If nests are located, 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 birds or nests until they are no longer active.

3.2.10 **Native American Religious Concerns**

3.2.10.1 Affected Environment

In accordance with the National Historic Preservation Act (P.L. 89-665), NEPA, FLPMA, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, 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, or spiritual importance and limit, reduce, or possibly eliminate any negative impacts to identified traditional, cultural, spiritual sites, activities, and resources.

On June 1, 2010, the BLM mailed consultation letters to the Duck Valley Sho-Pai Tribes, Te-Moak Tribal Council, Battle Mountain Band Council, Elko Band Council, Duckwater Shoshone Tribe, Yomba Shoshone Tribe, Ely Shoshone Tribe, Wells Band Council, South Fork Band Council, Goshute Business Council, Western Shoshone Committee, Western Shoshone Descendants of Big Smoky, and Western Shoshone Defense Project. Tribal coordination is ongoing, however, no locations having traditional, cultural, or spiritual importance have been identified in the Project Area to date.

Cultural and archaeological resources are protected under the Archaeological Resources Protection Act and FLPMA. Therefore, as stated in Section 2.2.13, if any cultural properties, items, or artifacts (e.g., stone tools or projectile points) are encountered during Project activities, WPP would ensure that such items are not collected by their employees or contractors.

Although the possibility of disturbing Native American gravesites within the Project Area is unlikely, inadvertent discovery procedures would be implemented as outlined in Section 2.2.13. The procedures outlined in Section 2.2.13 are in keeping with the Native American Graves Protection and Repatriation Act, section (3)(d)(1), which requires the discovering individual to notify the land manager of such a discovery in writing and cease all activities until the land manager can respond to the situation.

3.2.10.2 Environmental Consequences

No comments on the 2010 Plan Amendment have been received from the Native American tribes contacted. Although no Native American concerns have been identified, BLM consultation with the tribes is ongoing.

3.2.11 Paleontology

3.2.11.1 Affected Environment

Fusulinid and crinoid columnals are present (with rare occurrence of gastropods) in the Pequop Formation in the Spruce Mountains (Coats, 1987). In the Pequop Mountains, Pequop Formation is noted to contain only some fusulinids (Coats, 1987). The Lehman Formation in the upper Pogonip Group is highly fossiliferous and contains planispiral gastropods and the ostracode Leperditia, which are characteristic.

3.2.11.2 Environmental Consequences

Based on the review of the geologic setting of Project Area (Section 3.2.5), significant vertebrate fossils are not abundant within the geological formations mapped in the Project Area. Additionally, there would appear to be limited potential for preserved paleontological resources due to the extensive hydrothermal alteration, folding, and faulting mapped in the Project Area. Exploration drilling activities are not expected to impact scientifically significant paleontological resources in the Project Area. Additionally, Project activities including trenching and bulk sampling are limited in size (i.e., five acres) and are not expected to impact scientifically significant paleontological resources. Therefore, this resource is not further evaluated in this EA.

3.2.12 Range Resources

3.2.12.1 Affected Environment

The Project Area lies within the Payne Basin/Long Canyon/Six Mile pastures of the East Big Springs Allotment and the Independence Valley Pasture of the West Big Springs Allotment. Grazing use in the East and West Big Springs Allotments is governed by the “Final Grazing Management Decision and Record of Decision for the Sheep Complex, Big Springs, and Owyhee Allotments” dated 30 October 2006.

The Payne Basin/Long Canyon/Six Mile Pasture of the East Big Springs Allotment has a current carrying capacity of 375 animal unit months (AUMs). Under the terms of the grazing decision, this would increase to 756 AUMs following completion of several range improvement projects and attainment of management objectives. The Long Canyon/Six Mile portion of this pasture is grazed in a four year cycle, with livestock present from June 16 through August 30 in two years

and from June 16 through September 5 in the other two years. The bottom of Six Mile Canyon would be the only place where livestock typically might be found within the Project Area.

The Independence Valley Pasture of the West Big Springs Allotment has a current carrying capacity of 3,050 AUMs. This pasture is divided by water and private fencing into three use areas, one in the northwestern part of the valley, one in the northeastern part of the valley, and the third in the southern part of the valley. Livestock alternate between the two northern use areas in the fall and spring, with one side used and the other rested two years out of four, and the southern use area used every year in the winter (between January and March). The Project Area lies within the northeastern use area.

3.2.12.2 Environmental Consequences

Disturbance as a result of the Proposed Action is approximately 300 acres and would occur throughout the 11,967-acre Project Area. However, due to the dispersed nature of the surface disturbance resulting from phased exploration activities, livestock could continue grazing in the area and the impact of the Project activities on range resources would be minimal. Also, if access is required through a livestock fence, WPP would repair the livestock fence with a temporary gate. As stated in Section 2.2.13, WPP would ensure that the gate on the drift fence in the vicinity of Section 9, T36N, R66E, is closed during the times that this road is used for access up through Six Mile Canyon.

Indirect impacts to livestock would occur as a result of short-term temporary loss of vegetation as a result of Project-related surface disturbance. There could be a long-term improvement of habitat in the Project Area once the surface disturbance has been reclaimed and revegetated providing a greater amount of herbaceous vegetation species available for livestock foraging.

3.2.13 Recreation

3.2.13.1 Affected Environment

Recreational use in the Project Area is dispersed in nature and consists mainly of hunting, Christmas tree gathering, motorcycle recreation, motorcycle racing, mountain bike touring, and mountain bike racing. Approximately 10.5 miles of historic race routes are located in the Project Area. No developed recreational sites are located in or near the Project Area; however, there are established mountain bike and motorcycle race course routes adjacent to and within the Project Area.

Most users are from the local communities of Elko and Wells or own private lands in the Pequop area. The physical and social setting of the area is generally backcountry with a naturally appearing landscape, no obvious major roads, and between seven and 15 encounters per day on roads but three or less off the main travel ways.

3.2.13.2 Environmental Consequences

The Project could result in short-term impacts from noise and visual modifications associated with exploration activities. There would be a change in physical and social setting from backcountry to one that is more front country directly at the Project Area and as you move away from the Project Area becoming more of a middle country. Workers and vehicles would be more

predominate, up to 30 encounters per day, and there would be increased evidence of use in the area. Hunters would be discouraged from using the area because of the increase in activity. The Proposed Action, which includes approximately 300 acres of surface disturbance, would also have a temporary impact to recreational opportunities because localized Project activities could temporarily block access on roads to and through the Project Area.

As stated in Section 2.2.13, prudent speed limits by Project equipment would be utilized to reduce the hazard for collisions on public roads within the Project Area.

3.2.14 Social Values and Economics

3.2.14.1 Affected Environment

In 2003, the U.S. Census Bureau defined new classifications of counties, which are designated as “Micropolitan Statistical Areas.” To be classified as a Micropolitan Statistical Area a group of counties must have a community of at least 10,000 to 49,999 people, be distant from a large city, and have proportionately few residents commuting outside the area. The northeastern Nevada counties of Elko and Eureka meet these requirements and have been designated as the Elko Micropolitan Statistical Area (S.A.). In September 2007, the University of Nevada, Reno published a technical report (UCED 2007/08-03) entitled “An Analysis of the Economic Impact of the Hard Rock Mining Sector on the Elko Micropolitan Statistical Area” (Price and Harris, 2007). This report summarizes the important economic impact that the mining industry has on the Elko Micropolitan S.A. For example, the Elko Micropolitan S.A. is the primary area for the state’s mining industry and during the First Quarter 2007, this area employed 5,202 mining employees, which consisted of 44.07 percent of total state of Nevada mining employment. In addition, the mineral industry accounted for 20.42 percent of the total employment within the Elko Micropolitan S.A. It was concluded that given the economic linkages of the Hard Rock Mining Sector, any changes in production levels by the Hard Rock Mining Sector greatly impacts the Elko Micropolitan S.A. economy. Finally, lost occupations from closure of mining operations would not be hired into other Elko Micropolitan S.A. sectors and wages would not equal those in the mining industry (Price and Harris 2007).

The Project is located in Elko County, a county approximately 17,179 square miles in size (U.S. Census Bureau, 2010). The closest cities providing a variety of services and lodging are Wells and West Wendover. The population of Elko County was estimated to be 51,325 in 2009 (State of Nevada Demographer, 2010). The 2009 population estimates for Wells and West Wendover were 1,515, and 4,945, respectively (State of Nevada Demographer, 2010). The city of West Wendover provides a variety of services including restaurants, gas stations, and stores as well as a variety of lodging or housing options. Wells also provides restaurants, gas stations, stores, and lodging options.

The 2000 U.S. Census Bureau unemployment rate for Elko County was four percent (U.S. Census Bureau, 2010). The unemployment rate for the State of Nevada for 2000 was also four percent (U.S. Census Bureau, 2010). The median household incomes in Elko County and the State of Nevada in 2008 were \$70,125 and \$56,432, respectively (U.S. Census Bureau, 2010).

A total of 28 people (three contract personnel per drill rig crew and one WPP-employed geologist per drill rig for seven drill rigs) may be working at any time on the Project and would be based out of Wells or West Wendover. Drilling activities may occur in two daily shifts. A

maximum of 28 employees or contract workers would be required for the duration of the Proposed Action activities. Temporary housing would be secured in Wells.

3.2.14.2 Environmental Consequences

The Project would have beneficial impacts on the local economies as the contract workers would obtain lodging, meals, and supplies in the nearby towns and would most likely be based out of Wells or West Wendover. No additional facilities or housing would need to be constructed and the maximum workforce of 28 persons would not strain the local housing supply or other services. Impacts from the Project would be beneficial to the local economies and temporary, therefore, this resource is not further evaluated in this EA.

3.2.15 Soils

3.2.15.1 Affected Environment

Soils in the Project Area are typical of mountain slopes in the north-central Great Basin. Slopes are gentle to steep in gradient and runoff is medium to very high. In general, soil productivity is limited by the relatively short growing season and low levels of precipitation. Soils in the Project Area were mapped by the Natural Resources Conservation Service (NRCS) as part of preliminary surveys of southeastern Elko County. The NRCS Web Soil Survey identifies the Haunchee-Halacan-Wardbay and Pookaloo-Cavehill-Rock Outcrop associations as the two dominant soil associations in the Project Area together covering 91.3 percent of the Project Area (NRCS, 2010).

The Haunchee-Halacan-Wardbay association covers approximately 68.3 percent of the Project Area and is characterized by a moderate erosion hazard by water, low to moderate erosion hazard by wind, moderate to very high runoff, and moderate to high permeability. The Pookaloo-Cavehill-Rock Outcrop association covers 23 percent of the Project Area and is characterized by a low erosion hazard by water, moderate erosion hazard by wind, moderate to very high runoff, and moderate permeability.

The remaining soil associations cover 8.7 percent of the Project Area and are summarized in Appendix A.

3.2.15.2 Environmental Consequences

Surface disturbance associated with the Project would impact up to 300 additional acres of soils in phases over a ten-year period. The dominant soil associations in the Project Area vary from low to moderate for erosion hazard by water and wind. Exploration activities associated with the Project especially in steep terrain would increase the erosion potential for wind and water of disturbed soils until reclamation was successfully completed. High road density created during minerals exploration adjacent to the Project Area has resulted in areas of continuous disturbance on steep hillslopes. Similar types of disturbance could occur under the Proposed Action. These disturbed hillslopes are especially susceptible to erosion and subsequent impacts to soil quality due to their steepness and long slope length. Although Project activities including reclamation could result in long-term impacts to soil chemistry quality, these impacts would be reduced by measures incorporated in the Project design, including the use of waterbars installation of erosion control material and growth media, and other BMPs, and the concurrent reclamation of drill

pads, sumps, trenches, and drill roads no longer needed for access. Reclamation activities such as regrading, ripping, and concurrent revegetation of disturbed areas would also minimize soil loss.

3.2.16 Special Status Species

BLM policy for management of special status species is in the BLM Manual Section 6840. Special status species include the following:

- **Federally Threatened or Endangered Species:** Any species that the USFWS has listed as an endangered or threatened species under the ESA throughout all or a significant portion of its range.
- **Proposed Threatened or Endangered Species:** Any species that the USFWS has proposed for listing as a federally endangered or threatened species under the ESA.
- **Candidate Species:** Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the ESA.
- **BLM Sensitive Species:** Species 1) that are currently under status review by the USFWS; 2) whose numbers are declining so rapidly that federal listing may become necessary; 3) with typically small and widely dispersed populations; or 4) that inhabit ecological refugia or other specialized or unique habitats.
- **State of Nevada Listed Species:** State-protected animals that have been determined to meet BLM's Manual 6840 policy definition.

Nevada BLM policy is to provide State of Nevada listed species and Nevada BLM sensitive species with the same level of protection as is provided candidate species in BLM Manual 6840.06C. Per wording in Table IIa in BLM Information Bulletin (IB) No. NV-2003-097, Nevada protected animals that meet BLM's 6840 policy definition are those species of animals occurring on BLM-managed lands in Nevada that are: 1) 'protected' under authority of the NAC; 2) have been determined to meet BLM's policy definition of "listing by a state in a category implying potential endangerment or extinction;" and 3) are not already included as federally listed, proposed, or candidate species.

3.2.16.1 Affected Environment

Plants

No special status plant species were identified by the BLM or Nevada Natural Heritage Program (NNHP) as occurring or having suitable habitat within the Project Area. Although not a BLM sensitive species, slender buckwheat (*Eriogonum microthecum* var. *laxiflorum*), is the primary host plant to a BLM sensitive butterfly species and is discussed below.

Insects

In 2007, Enviroscientists conducted a survey within a portion of the Project Area for the slender buckwheat, which is the primary host plant to the Mattoni's blue butterfly (*Euphilotes pallescens* var. *mattonii*), a BLM sensitive species, and documented the plant throughout the area surveyed (Enviroscientists, 2007). Slender buckwheat is a common subshrub species in the western United States with a distribution that includes Nevada, Washington, Oregon, California, Arizona, Utah, Colorado, Wyoming, Idaho, and Montana (Flora of North America, 2005). Slender buckwheat populations have been located throughout the Project Area. A focused survey identified extensive slender buckwheat populations are located in the Project's three Phase I target areas (Enviroscientists, 2010).

Although, Mattoni's blue butterfly has not been located within the Project Area, surveys conducted by Enviroscientists in July 2009 in the adjacent Long Canyon project observed Mattoni's blue butterfly associated with slender buckwheat. More than 50 individual Mattoni's blue butterflies were observed in Sections 19, 20, 28, 30, and 31, T36N, R66E. The Mattoni's blue butterfly was observed in areas with populations of slender buckwheat. Areas of scattered slender buckwheat occur within the Project Area; however, no Mattoni's blue butterflies were observed in association with the areas of scattered slender buckwheat plants (Enviroscientists, 2009).

Bats

Although surveys for BLM sensitive bat species have not been conducted in the Project Area, acoustic bat surveys were conducted in 2007 and 2009 by Enviroscientists in the adjacent Long Canyon project area. The 2007 Long Canyon bat survey conducted in September 2007 detected the following BLM special status species: little brown myotis (*Myotis lucifugus*); silver-haired bat (*Lasiurus noctivagans*); long-eared myotis (*Myotis evotis*); and Brazilian free-tailed bat (*Tadarida brasiliensis*) (Enviroscientists, 2007). The survey also potentially detected the fringed myotis (*Myotis thysanodes*) and the hoary bat (*Lasiurus cinereus*). The quality of the recordings was not sufficient for positive identification of the fringed myotis and hoary bat (Enviroscientists, 2007).

Additional bat surveys conducted in Long Canyon by Enviroscientists in July 2009 detected the following BLM special status bat species: long-eared myotis; small-footed myotis (*Myotis ciliolabrum*); Brazilian free-tailed bat; and big brown bat (*Eptesicus fuscus*). One species was potentially detected, little brown myotis (*Myotis lucifugus*); however, the quality of the recording was not sufficient for positive identification of little brown myotis (Enviroscientists, 2009).

It is expected that due to the proximity of the Long Canyon project area, the same species of bats would be expected to utilize habitat in the Project Area for foraging and roosting. Numerous large, extensive rock outcrops, which could provide roosting habitat for bats, are present in the Project Area.

Pygmy Rabbits

No pygmy rabbits (*Brachylagus idahoensis*) or their sign (e.g., burrows, scat, runways) were found in the Project Area based on surveys conducted. No basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*) is present in the Project Area and is an important component of pygmy rabbit habitat. The primary area of potential habitat, the Six Mile Creek drainage, was surveyed by Enviroscientists in 2010 on foot from the northernmost portion of the drainage within the Project Area to a few hundred feet south of where the road crosses the drainage. Areas south of this point did not have potentially suitable habitat. Other drainages and draws within the Project Area, which might contain potential habitat, were also surveyed. In general, the habitat in these areas is a mix of mountain sagebrush (*Artemisia tridentata* ssp. *vaseyana*), serviceberry (*Amelanchier alnifolia*), snowberry (*Symphoricarpos* sp.), and other shrubs with a dense understory of grasses and forbs. These areas did not appear to be suitable pygmy rabbit habitat (e.g., dense understory, mix of shrub species) and did not typically provide sufficient overstory shrub canopy cover (Enviroscientists, 2010).

Birds and Raptors

BLM special status bird species that have been observed within the Project Area include the following: juniper titmouse; piñon jay; vesper sparrow; red-naped sapsucker; ferruginous hawk; golden eagle (*Aquila chrysaetos*); prairie falcon (*Falco mexicanus*); and greater sage-grouse (*Centrocercus urophasianus*) (Enviroscientists, 2010).

Juniper titmouse, piñon jay, and vesper sparrow, BLM special status species, were observed within the piñon-juniper woodland vegetation community throughout the Project Area. Red-naped sapsucker, a BLM special status species, was observed within the limber pine woodland and subalpine fir forest in standing snags in Section 3, T35N, R65E. Both a male and a female red-naped sapsucker were observed indicating a mated pair; however, no nest was found (Enviroscientists, 2010).

Ferruginous hawk, golden eagle, and prairie falcon, BLM sensitive raptor species, were observed during the survey. Both a male and a female ferruginous hawk were seen foraging within the area burned by wildland fire in the northwestern portion of the Project Area (Figure 3.2.16). Single standing trees in the vicinity of where the ferruginous hawks were foraging were searched and no nest was found. The Project Area provides suitable nesting and foraging habitat for ferruginous hawk (Enviroscientists, 2010).

Two golden eagles, an adult and a juvenile, were seen foraging to the north and south of the Project Area just outside of the Project Area boundary (Figure 3.2.16). The Project Area provides suitable foraging habitat for golden eagle. Several large extensive rock outcrops that could be suitable golden eagle cliff nesting habitat are located primarily outside of the Project Area boundary. One rock outcrop extends into the northeastern portion of the Project Area (Figure 3.2.16). No white wash or stick nest was observed on the rock outcrop that extends into the northeastern portion of the Project Area. Within the Project Area, there are numerous rock

outcrops, although the rock outcrops are typically characterized by a staircase structure, which could allow easy access by predators; therefore, the majority of rock outcrops in the Project Area do not provide ideal golden eagle cliff nesting habitat. There are two rock outcrops that had more vertical features that could provide potential golden eagle cliff nesting habitat within the Project Area; however, the aspect and elevation appear less suitable (i.e., exposure to inclement weather) (Figure 3.2.16). No stick nests or white-wash was observed on any of the outcrops within the Project Area (Enviroscientists, 2010).

A pair of prairie falcons were observed approximately 0.13 mile north and outside the Project Area. The pair was observed near a large, extensive rock outcrop (Figure 3.2.16). It is possible this pair nests on this outcrop; however, the outcrop was not examined due to weather constraints. A single prairie falcon was observed soaring over the northeastern portion of the Project Area on June 17, 2010 (Figure 3.2.16). The Project Area provides suitable foraging habitat for this species (Enviroscientists, 2010).

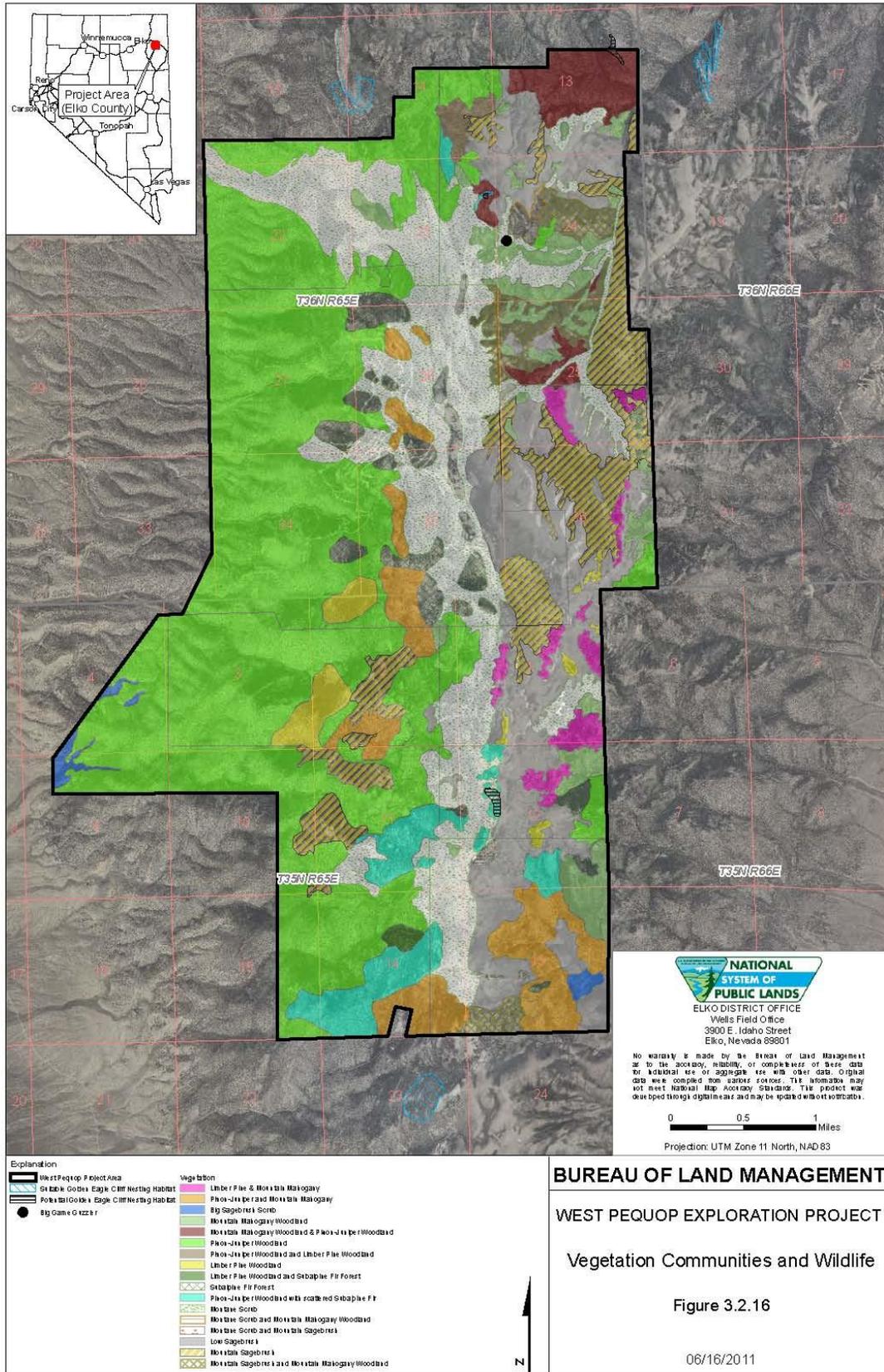
Greater-sage grouse, a USFWS candidate species, an upland game bird, and BLM special status species, was detected within the Project Area. A single hen greater-sage grouse was located beneath a limber pine tree at 8,700 feet amsl (Figure 3.2.16). No evidence of any greater-sage grouse nesting activity was found. No other greater-sage grouse or their sign (e.g., scat, feathers, nests, eggshells, or tracks) were found within the Project Area during the survey (Enviroscientists, 2010).

3.2.16.2 Environmental Consequences

Direct impacts to plants, insects, bats, pygmy rabbits, special status bird species, raptors, greater sage-grouse, and other special status animal species sensitive to human activity and noise could include temporary displacement as a result of the Project. Construction of roads and drill pads and the operation of drilling equipment could disturb special status animal species due to the presence of humans and by creating noise and dust. Special status animal species foraging activities within the Project Area could continue since a maximum of seven drill rigs would be operating in diverse locations at one time, allowing special status animal species to move around and between Project activities. The animals could still be frightened by noise and not utilize the area during drilling. Habitat fragmentation would be unlikely to occur because the drill program would be dispersed over the 11,967-acre Project Area with a maximum of 300 acres (or 2.7 percent) of disturbance over the life of the Project. Impacts to special status animal species would be lessened by reclaiming access and drill roads, and drill sites no longer needed for future exploration as quickly as possible. No long-term impacts to habitat are likely to occur since reclamation and reestablishment of vegetation would take place between one and three years after Project completion.

Targeted slender buckwheat surveys in the Project Area have identified extensive populations of the plant throughout the Project Area. Project-related surface disturbance (i.e., 300 acres) would be created incrementally and be dispersed throughout the Project Area. In addition, the disturbance would be primarily linear (roads) or patchy (drill pads) in form, and therefore highly likely to be recolonized by surrounding vegetation including slender buckwheat. Slender buckwheat (i.e., Mattoni's blue butterfly habitat) is located throughout the Project Area. Project-

Figure 3.2.16: Vegetation Communities and Wildlife



related surface disturbance would not impact any unique habitat for the Mattoni's blue butterfly; therefore, no long-term impacts to Mattoni's blue butterfly are expected from the Project.

Golden eagles are protected by the MBTA and the Bald and Golden Eagle Protection Act, both of which prohibit take. The Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance provides guidance to conduct informed impact analyses and mitigation during the NEPA process (USFWS, 2010). Golden eagles and their habitat are present in the Project Area (Figure 3.2.16). In order to avoid impacts to individual golden eagles and their habitat, implementation of the environmental protection measure outlined in Section 2.2.13 for migratory birds would ensure that prior to surface disturbance a nesting survey for migratory birds (including golden eagles) would be conducted and nests avoided.

The direct disturbance of big sagebrush habitat within the 11,967-acre Project Area would preclude use by sensitive species, such as greater sage-grouse. Disruption of foraging habitat may affect individual success, but is not expected to contribute to any detectable loss of viability for the regional population of these species. The disruption of habitat use could extend until operations cease. Lost habitat would not be replaced until the disturbed areas are successfully reclaimed.

3.2.17 Vegetation

3.2.17.1 Affected Environment

The Project is located within the Calcareous Mountains Floristic Section, Great Basin Division, of the Intermountain Region (Cronquist et al., 1972). Dominant vegetation communities in the Project Area include: subalpine fir forest; limber pine woodland; piñon-juniper woodland; mountain mahogany woodland; mountain scrub; mountain sagebrush; and low sagebrush (Figure 3.2.16). Vegetation communities in the 11,967-acre Project Area were mapped during the biological survey conducted in 2010. An area in the northwestern portion of the Project Area is recovering from a wildland fire. Vegetation in these recovering areas include crested wheatgrass (*Agropyron cristatum*) and early successional stages of the mountain shrub vegetation community with native shrubs, forbs, and grasses. A cheatgrass (*Bromus tectorum*) monoculture approximately ten feet by 30 feet in size occurs within the northeastern portion of the Project Area.

3.2.17.2 Environmental Consequences

The Project would result in surface disturbance of up to approximately 300 additional acres of vegetation over the life of the Project. The disturbance would be created incrementally and be dispersed throughout the Project Area and would not impact an entire population of any unique plant community in the Project Area. Reclamation would begin upon completion of exploration activities using a BLM recommended seed mix (Table 2.1-3). In addition, the disturbance would be primarily linear (roads) or patchy (drill pads) in form, and therefore highly likely to be recolonized by surrounding vegetation.

3.2.18 Visual Resources

3.2.18.1 Affected Environment

Scenic quality is a measure of the visual appeal of a parcel of land. Section 102(a)(8) of the FLPMA emphasizes protection of the quality of scenic resources on public lands. Section 101(b) of NEPA requires that measures be taken to ensure that aesthetically pleasing surroundings be retained for all Americans.

The Project Area is located in a Class IV Visual Resource Management (VRM) Class. The objective of this class is to provide for management activities that allow for major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities could dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of such activities through careful location, minimal disturbance and repeating the basic elements of line, form, color, and texture (BLM, 1986).

The characteristic landscape is that of the Great Basin, with wide open valleys bordered by mountain ranges trending north and south. The Project Area is located on the western slope of the Pequop Mountain Range. Elevations in Project Area range from 6,400 to 9,200 feet amsl. The Project Area is in a predominately piñon-juniper forest type intermixed with mountain sagebrush and open meadowlike areas dispersed throughout. From most vantage points the area's texture looks smooth and consistent with dark green and black coloring. Man made features in the area include existing mine disturbance in the form of roads, drill pads, machinery; range improvements and fences are also present.

3.2.18.2 Environmental Consequences

Visual concerns are mostly from the Interstate 80 east-bound travelers; however, the Project Area subject to surface disturbance is screened by topography for the most part. Although the Project Area is more than a mile and a half from the Interstate (low visibility corridor), the Pequop Mountains are a focal point in the viewshed. East-bound travelers would look directly at the Project Area in the distance. The Project would result in short-term visual impacts principally affecting the visual elements of line and color. Horizontal and shallow diagonal lines from drill roads would cause moderate, temporary line contrasts with the natural landscape. Disturbance of vegetation would cause moderate, temporary color contrasts. With successful reclamation of exploration roads and revegetation, long-term visual impacts would be minimized. Environmental Protection Measures and standard operating procedures for exploration would aid in protecting the visual quality of the area. The effects of the Project on visual resources would be consistent with BLM prescribed Visual Resource Inventory Class IV objectives.

3.2.19 Wastes (Hazardous or Solid)

3.2.19.1 Affected Environment

All refuse generated by the Project would be disposed of at an authorized landfill facility off site, consistent with applicable regulations. No refuse would be disposed of on site. Water and nontoxic drilling fluids or products, including Abandonite, Alcomer 120L, bentonite, EZ-mud,

polyplus, and super plug, would be utilized as necessary during drilling and would be stored within the Project Area.

Hazardous materials utilized within the Project Area would include diesel fuel, gasoline, and lubricating grease. Approximately 500 gallons of diesel fuel would be stored in fuel delivery systems on vehicles and drill rigs. Approximately 150 gallons of gasoline would be stored in fuel delivery systems for light vehicles. Approximately 100 pounds of lubricating grease would be stored on the drill rigs or transported by drill trucks. All containers of hazardous substances would be labeled and handled in accordance with the NDOT, NDEP, OSHA, EPA, and MSHA. In the event hazardous or regulated materials, such as diesel fuel, were spilled, measures would be taken to control the spill, and the BLM, NDEP, and the Emergency Response Hotline would be notified, as required. In addition, a spill kit would be kept on site. If any oil, hazardous material, or chemicals are spilled during operations, they would be cleaned up immediately. After clean up, the oil, noxious fluids, or chemicals and any contaminated material would be removed from the site and disposed of at an approved disposal facility.

Self-contained, portable, chemical toilets would be used for human waste and all human waste would be hauled off site and disposed of in a sewage treatment facility.

3.2.19.2 Environmental Consequences

A Spill Contingency Plan is included in the 2010 Plan Amendment and would be implemented to control drilling fluids and petroleum products. All containers of hazardous substances would be labeled and handled in accordance with NDOT, NDEP, OSHA, EPA, and MSHA regulations (Section 2.2.11). Therefore, no impacts to the environment from wastes associated with the Proposed Action are anticipated and this resource is not further evaluated in this EA.

3.2.20 Water Resources

3.2.20.1 Affected Environment

The Project Area is located in the Goshute Valley and Independence Valley Hydrographic Basins (Nos. 187 and 188) within the Central Hydrographic Region. The drainages within the Project Area are formed from ephemeral streams supplied with runoff from rains and winter snow pack. There are no seeps or perennial drainages within the Project Area. Long Canyon Spring is the nearest ephemeral water source and is located on the opposite side of the Pequop Range approximately 2.5 miles east of the Project Area. The nearest known source of permanent surface water is Johnson Springs (the principal discharge point of which is known as Big Springs), which is located on the Big Springs Ranch in the southwest quarter of the southeast quarter of Section 28 T36N, R66E. Both of these springs are outside of the Project Area, however, this drainage basin supplies part of West Wendover's drinking water supply through ground water production wells and from Johnson Springs.

The drainages within the Project Area are ephemeral streams with flows to the west from the Pequop Range towards Independence Creek. However, these ephemeral drainages infiltrate into the basin prior to reaching Independence Creek and there are no channels (beds and banks) connecting these ephemeral drainages to Independence Creek. On a small portion of the east side of the Project Area, some of the drainages flow east into the Six Mile and Hardy Creek

drainages. The ephemeral drainages within the Project Area do not exhibit vegetation that differs from adjacent upland vegetation.

3.2.20.2 Environmental Consequences

Activities conducted under the Proposed Action would avoid all surface water, since there are no seeps or perennial drainages within or adjacent to the Project Area. As outlined in Section 2.2.13, WPP has committed to a number of environmental protection measures during construction, operation, and reclamation to minimize sedimentation or erosion resulting from spring runoff or precipitation events.

A Spill Contingency Plan is included in the 2010 Plan Amendment and would be implemented to control drilling fluids and petroleum products. All containers of hazardous substances would be labeled and handled in accordance with NDOT and MSHA regulations (Section 2.2.11). Impacts would be minimal due to the use of nontoxic drilling fluids and adherence to NAC 534.4369 and 534.4371.

All drill holes (except those proposed to be completed as monitoring wells) would be plugged prior to the drill rig moving from the drill site in accordance with NRS 534 and NAC 534.4369 and NAC 534.4371 with the exception of drill holes collared with a reverse circulation drill rig and completed with a core rig, which would be plugged prior to the core rig moving from the drill site. If any future drill hole produces artesian flow, the drill hole would be contained pursuant to NRS 534.060 and NAC 534.378 and would be sealed by the method described in Subsection 2 of NAC 534.4371. If casings are set in a drill hole, either the drill hole must be completed as a well and plugged pursuant to NAC 534.420 or the casings would be completely removed from the drill hole and then be plugged according to NAC 534.4369 and NAC 534.4371.

The Proposed Action would utilize water for exploration drilling. This would represent a minor consumptive use of water. WPP would obtain water at a water well located in Section 20, T32N, R65E (Permit Number 62041). WPP may, in future phases, acquire water from an alternate source. The BLM and BMRR would be notified of the source and provided with copies of all applicable permits. Therefore, no impacts to surface or ground water are expected from the Proposed Action.

3.2.21 Wild Horses and Burros

3.2.21.1 Affected Environment

Although the Project Area is not within a Herd Management Area (HMA), wild horses (*Equus ferus*) are known to utilize the Project Area. A single band of nine wild horses including three foals was observed in the southeast quarter of Section 1, T35N, R65E, during the wildlife survey conducted by Enviroscientists in June 2010. As a result of the elevation and winter conditions, the primary use of the Project Area by wild horses likely occurs during the summer months. The limited perennial water sources restrict wild horse use of the Project Area to periods when ephemeral sources are available.

3.2.21.2 Environmental Consequences

Due to the nature of the Project and the location of the Project Area outside of any HMAs, the management of wild horses and burros would not be affected by the Project and, therefore, not further evaluated in this EA.

3.2.22 **Wildlife**

3.2.22.1 Affected Environment

A description of wildlife habitats within the Project Area is included in Section 3.2.16. The wildlife species that inhabit the Project Area are typical of the arid/semi-arid environment in the central Great Basin and were identified by Envirosientists during a biological survey conducted in June and September 2010. These wildlife species include birds, raptors, mollusks, mammals, and reptiles. Bats are discussed under Special Status Species in Section 3.2.16.

Birds

Birds in the Project Area and vicinity include the American robin, black-throated gray warbler, black-throated sparrow, blue grouse (*Dendragapus obscurus*), blue-gray gnatcatcher, Brewer's sparrow, brown-headed cowbird, bushtit, chipping sparrow, Clark's nutcracker, common nighthawk, common poorwill, common raven, dark-eyed junco, gray flycatcher (*Empidonax wrightii*), greater sage-grouse, green-tailed towhee, hairy woodpecker, house finch, house wren, juniper titmouse, horned lark, lark sparrow, loggerhead shrike, mountain chickadee, mountain bluebird, mourning dove, northern flicker, northern harrier, piñon jay, plain titmouse, red-naped sapsucker, rock wren, western tanager, and unidentified hummingbird (Family: Trochilidae).

Raptors

The following seven species of raptors have been observed in or near the Project Area: American kestrel; Cooper's hawk; ferruginous hawk (*Buteo regalis*); great horned owl; red-tailed hawk; rough-legged hawk (*Buteo lagopus*); turkey vulture (*Cathartes aura*); northern goshawk (*Accipiter gentilis*); and western screech-owl (*Megascops kennicottii*). The location of the screech owl is shown on Figure 3.2.16.

Golden eagles and prairie falcons are discussed above in Section 3.2.16.

Two western screech-owls were observed in Section 23, T36N, R65E. It was not possible to determine whether the owls were a pair or an adult and fledgling. A search of the area for a cavity nest was performed, but no evidence of any nesting activity was found (e.g., white wash, downy white feathers, pellets).

Snails

Three colonies of mountain land snails, *Oreohelix strigosa*, have been located in isolated stands of white fir and mountain brush in the limestone canyons in the northern part of the Pequop Mountains (Ports, 2010). One known colony is located within the Project Area boundary along Six Mile Canyon Road; however, the colony is not located within Project-related proposed surface disturbance. The other two known colonies are not located in the Project Area. Based on

species requirements, no additional habitat for mountain land snails has been identified in the Project Area or Six Mile Canyon.

Mammals

Common small mammal species such as coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), woodrat (*Neotoma* sp.), cliff chipmunk (*Eutamias dorsalis*), and golden-mantled ground squirrel (*Spermophilus lateralis*) have been detected within the Project Area either directly or by observation of tracks, scat, carcass, prey remains, burrow, or other sign.

Game Species

Big game species detected within the Project Area during wildlife surveys include mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), and elk (*Cervus canadensis*). Mule deer occur throughout the Elko district. The NDOW conducted post-season survey flights of the Northeastern Elko County area, Units 071 through 079 and 091. A total of 1,563 mule deer was classified during the survey with a resulting ratio of 18 bucks to 100 does to 50 fawns (NDOW, 2010). Spring surveys were flown in late March and early April. A total of 1,643 mule deer was classified during the survey, yielding a ratio of 36 fawns to 100 adults. Although over-winter survival was good for fawns this winter, fawn ratios going into the winter were below average. This year's recruitment rate of 36 fawns to 100 adults was slightly below the previous five-year average of 38 fawns: to 100 adults. It was the first time the spring fawn ratio increased in the last four years. The population model for Units 071 through 079, 091 predicts a pre-hunt adult mule deer population slightly lower than the previous year (NDOW, 2010). The deer in these unit groups have been reduced following wildland fires that have occurred in the area since 1999. Invasive weeds have invaded some of the burned areas and in areas where perennial grasses and forbs are found, in time the shrubs are expected to recover to pre-burn levels.

The Project Area is located within known mule deer winter range for the Area 7 deer herd. Mule deer scat, tracks, and disarticulated skeletal remains of both adults and fawns were observed in several locations in the Project Area during wildlife surveys. There is a migration of mule deer north and west of the Pequop Mountains through the Snake Mountains in the vicinity of the Project Area. Historic studies and current satellite telemetry studies have documented that the deer wintering in the Pequop Mountains have summer ranges to the north and west in the Jarbidge Mountains. Deer from the Jarbidge Mountains, located in NDOW Management Unit 072, and the Snake Range, located in NDOW Management 075, migrate to the south and east in the fall, through NDOW Management Unit 077 and onto their winter ranges located in NDOW Management Unit 078.

Unlike other deer migrations in northeastern Nevada, this migration begins before winter weather forces the deer to migrate. Typically, the migration southward begins in early October. The deer arrive on the winter ranges sometime before the end of October or the early part of November. The deer then remain on the winter ranges until early April when they begin their return migration to the summer ranges in and around the Jarbidge Area. During the migration, a number of deer are struck by vehicles on Highway 93 and I-80. The NDOW and NDOT are working on projects to reduce deer mortality due to vehicle collisions, including a big game

overpass on Highway 93. Additional data on deer/vehicle incidents is discussed in Section 3.4 under cumulative impacts.

Pronghorn antelope (*Antilocapra americana*) were observed in the Project Area during the wildlife survey conducted by Enviroscientists in June 2010. Although not identified directly in the field survey, there is potential for bighorn sheep (*Ovis canadensis*) to utilize the Project Area. The Project Area falls within Hunt Units 078, 105, 106, 107, and 121. Post-season surveys in August and September resulted in 528 antelope being classified. The resulting gender and age ratios for the sample were 40 bucks to 100 does to 20 fawns. The fawn ratio is well below the long-term average of 30 fawns to 100 does.(NDOW, 2010).

The Hunt Units 078, 105, 106, 107, and 121 pronghorn antelope herd appears to be stable and slightly increasing. The 2009 population estimate for the 078, 105 – 107, & 121 Unit Group is almost unchanged from last year. Although good precipitation occurred the spring of 2009, low recruitment in both 2008 and 2009 appear to be preventing this population from continuing its previously observed growth trend. Fawn ratios for 2008 and 2009 are well below the long-term average of 30 fawns:100 does. Despite the poor recruitment observed in the last few years, the population demonstrates a positive long-term trend. This trend was bolstered by high fawn ratios in 2004 and 2005 (NDOW, 2010).

Elk (*Cervus canadensis*) tracks and scat were observed in the higher elevation portions of the Project Area. Elk antler rubs were noted on mountain mahogany at the two big game guzzlers. This species was not directly observed during the wildlife survey conducted by Enviroscientists in June 2010. The elk within the Project Area fall within Hunt Units 078, 104, 105, 106, and 107 (NDOW, 2010). Post season surveys resulted in the classification of 336 elk yielding age and gender ratios of 10 bulls to 100 cows to 21 calves. The calf ratio was down from the 2009 observed ratio of 28 calves to 100 cows. The 2010 ratio is consistent with historic trends of weak calf ratios for this unit group (NDOW, 2010).

Although production remains low, several mature bulls have been observed and harvested. Continued elk observations documented in Unit 078 indicate the herd is still expanding its distribution and range. Despite the low levels of calf recruitment observed in this unit, the 2009 population estimate shows an 11 percent increase over 2009 and may be attributed in part, to ingress from adjacent Unit 121. Harvest management has been designed to promote herd growth towards the population objective of 340 elk (NDOW, 2010).

Reptiles

The following reptiles are expected to occur in the Project Area: common side-blotch lizard (*Uta stansburiana*); western fence lizard (*Sceloporus occidentalis*); Great Basin whiptail (*Cnemidophorus tigris*); mountain short-horned lizard (*Phrynosoma hernandesi*); and sagebrush lizards (*Sceloporus graciosus*)

3.2.22.2 Environmental Consequences

Direct impacts to wildlife would consist of temporary habitat loss and disturbance from human activity and noise. Approximately 300 acres of existing wildlife habitat would be temporarily impacted by the Proposed Action over a ten-year period.

Wildlife sensitive to human activity and noise could be temporarily displaced as a result of the Project. Construction of roads and drill pads and the operation of drilling equipment could disturb wildlife due to the presence of humans and by creating noise and dust. Wildlife foraging activities within the Project Area could continue since a maximum of seven drill rigs would be operating at one time, in diverse locations, allowing wildlife to move around and between Project activities. The animals could still be frightened by noise and not utilize the area during drilling. Wildlife habitat fragmentation would be unlikely to occur because the drill program would be dispersed over the 11,967-acre Project Area with a maximum of 300 acres (or 2.5 percent) of disturbance over the life of the Project. Therefore, the Project would have minimal direct impacts on wildlife species.

No long-term impacts to wildlife habitat are likely to occur since reclamation and reestablishment of vegetation would take place between one and three years after Project completion. Additionally, implementation of the environmental protection measures outlined in Section 2.2.13 would reduce impacts to wildlife.

Indirect impacts to wildlife would occur due to the temporary loss of vegetation as a result of Project-related surface disturbance. There would be a long-term improvement of habitat in the Project Area as surface disturbance is reclaimed and revegetated, and a greater amount of herbaceous species becomes available for wildlife foraging.

Impacts as a result of Proposed Action are expected to be similar for all wildlife species encountered in the Project Area. Any disturbance to mule deer, coyotes, rodents, and birds would likely be limited to temporary auditory or visual perturbation of individuals in or near the Project Area. Individuals foraging in the Project Area during exploration activities would likely leave the immediate area resulting in a temporary spatial redistribution of individuals or habitat-use patterns during the Project; this would not be a long-term effect since there is undisturbed and suitable habitat around the Project Area. If displaced animals move into habitat already at carrying capacity, there could be a higher mortality rate among the displaced individuals and an impact to the resident population. This in turn would cause a reduction of viable young at least for the next breeding season in the area. Impacts to mountain land snails are not expected since known colonies are not located within Project-related proposed surface disturbance. The disturbance due to Project-related activities would be short term. No long-term impacts are likely to occur since reclamation and reestablishment of vegetation would take place within several years of Project completion. The quality, quantity, and distribution of suitable wildlife habitat are not expected to be substantially altered by Project implementation. A minor increase in traffic would occur; however, the likelihood of deer-vehicle collisions would be minimized by the speed limit restrictions in the Project Area.

3.3 Effects of the No Action Alternative

As described earlier, under the No Action Alternative, the Proposed Action would not be approved. WPP could continue exploration activities under the approved Plan #NVN-071287 but would be limited to a maximum of 100 acres of surface disturbance on public land. Therefore, activities currently permitted in the Project Area, which are similar to those described for the Proposed Action, would continue. Disturbance from the No Action Alternative would be less than those associated with the Proposed Action (100 acres rather than a total of 400 acres) for the following resources: Air and Atmospheric Resources; Forestry and Woodlands; Lands and Realty; Lands with Wilderness Characteristics; Invasive, Nonnative Species; Migratory Birds;

Paleontology; Range Resources; Social Values and Economics; Soils; Special Status Species; Vegetation; Visual Resources; Water Resources; and Wildlife.

The No Action Alternative would not result in impacts to Cultural Resources because WPP has committed to avoidance of all eligible and unevaluated cultural sites. The No Action Alternative would not result in impacts to Recreation because access for recreation would not be restricted. No impacts to Wild Horses and Burros would result from the No Action Alternative as the Project Area is not located within an HMA. No impacts to Geology and Mineral Resources or Paleontology are expected as the approved activities consist of mineral exploration activities and no mining. No impacts to Fire Management would result from the No Action Alternative because there are no active fuel treatment areas within the existing Project Area and the activities would not preclude fire management activities. No impacts from Wastes would result from the No Action Alternative as the same protection measures are in place as the Proposed Action. No impacts to Environmental Justice would result from the No Action Alternative as these issues are not present. In addition, no impacts to Native American Religious Concerns would be expected as a result of the No Action Alternative.

3.4 Cumulative Impacts

As defined in 40 CFR 1508.7 (Council on Environmental Quality [CEQ] regulations for implementing the NEPA) a cumulative impact is an impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (RFFAs), regardless of which agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

The resources to be analyzed in the Cumulative Impacts section are those for which the Proposed Action would have an impact and include the following: Air and Atmospheric Resources, Cultural Resources, Migratory Birds, Noxious Weeds and Invasive Nonnative Species, Range Resources, Recreation, Soils, Special Status Species, Vegetation, Visual Resources, Water Resources, Wildlife, and LWC. Although the Proposed Action would result in impacts to Social Values and Economics, these impacts would be both minor and beneficial; therefore, this resource is not analyzed in the Cumulative Impacts section.

The geographic extent of resources potentially affected varies by the type of resource and impact. Ten different cumulative effects study areas (CESAs) have been developed and are listed with their total acreage in Table 3.4-1. The CESAs include the HUC5 Watersheds CESA (404,215 acres), Recreation CESA (141,389 acres), Cultural Resources (acres TBD), Grazing CESA (492,881 acres), Soils CESA (11,967 acres), Sage Grouse CESA (191,898 acres), Visual Resources CESA (31,909 acres), the Immediate Watersheds CESA (84,692 acres), the Mule Deer CESA (723,871 acres), and LWC CESA (63,235 acres).

The Deer CESA includes the summer range (281,279 acres), winter range (129,374 acres), and the migration corridor (313,218 acres). Figure 3.4.1 is a large-scale depiction of the Soils, Range Resources, Immediate Watersheds, and HUC5 Watersheds CESAs. Figure 3.4.2 is also a large-scale depiction of the Visual, Recreation, and Cultural CESAs. Figure 3.4.3 is a small-scale depiction of the Greater Sage-Grouse CESA and the LWC CESA. Figure 3.4.4 is a small-scale

Figure 3.4.1: Cumulative Effects Study Areas - Large Scale, Part 1

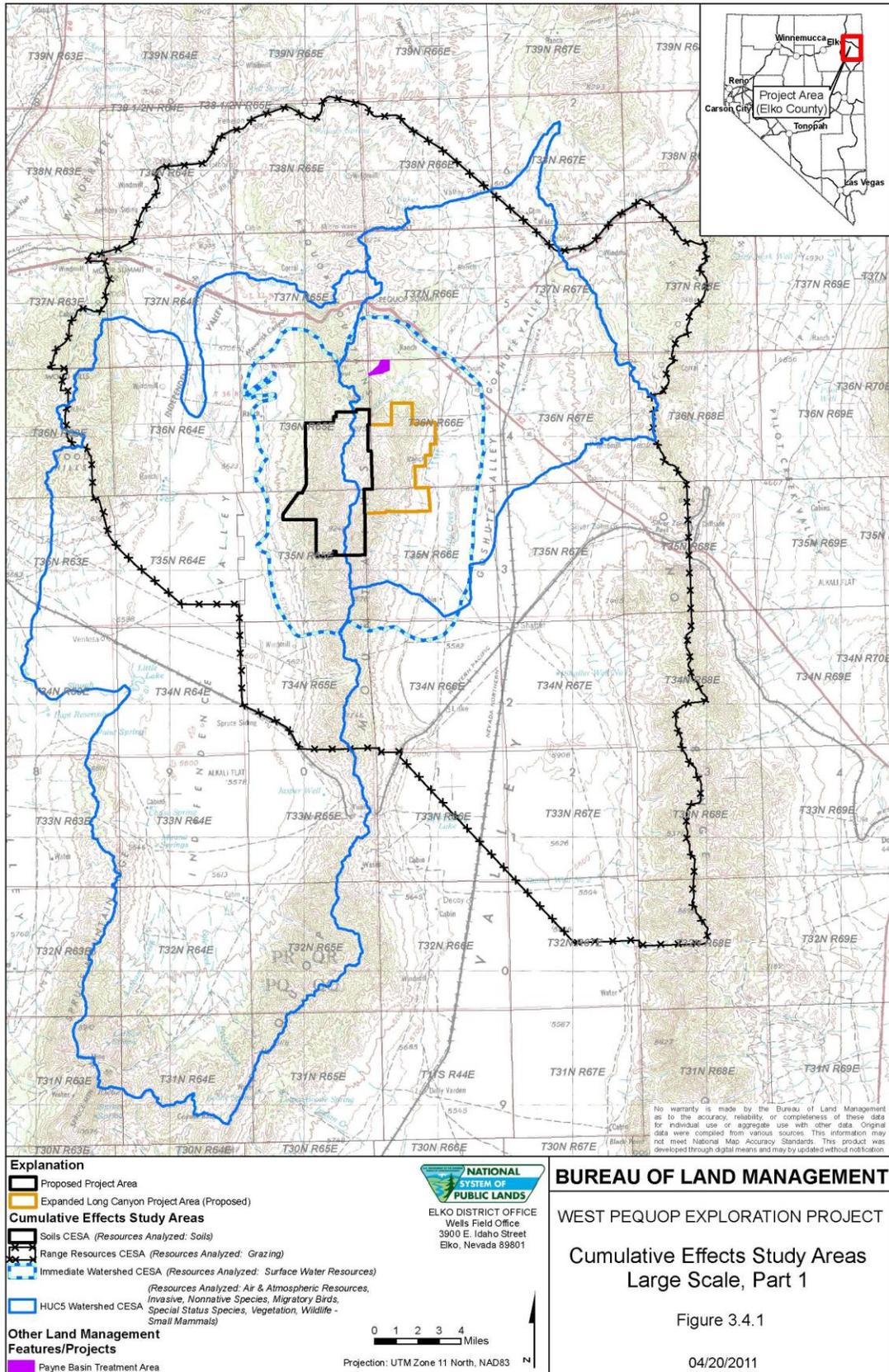


Figure 3.4.2: Cumulative Effects Study Areas - Large Scale, Part 2

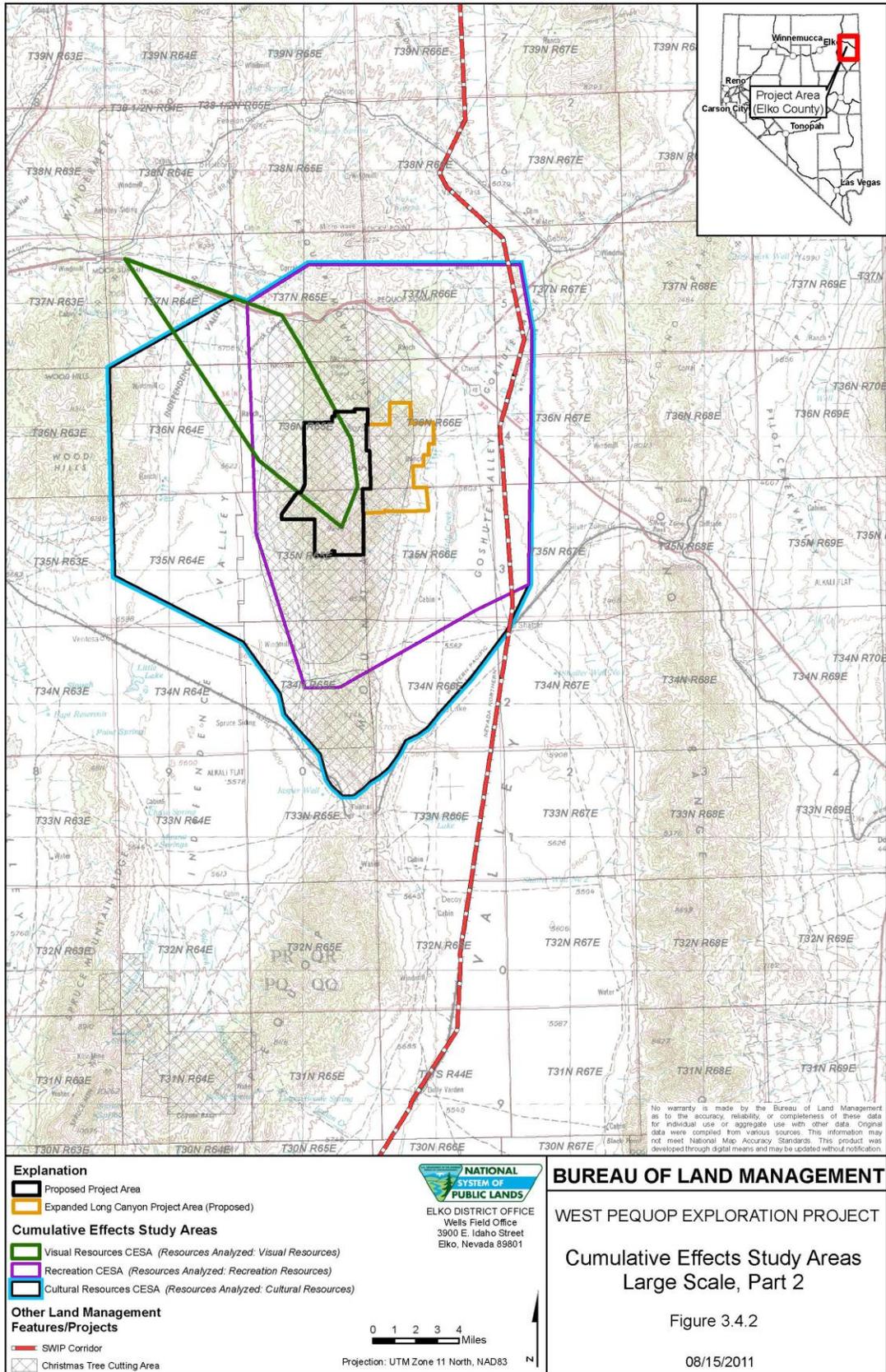


Figure 3.4.3: Cumulative Effects Study Areas – Small Scale, Part 1

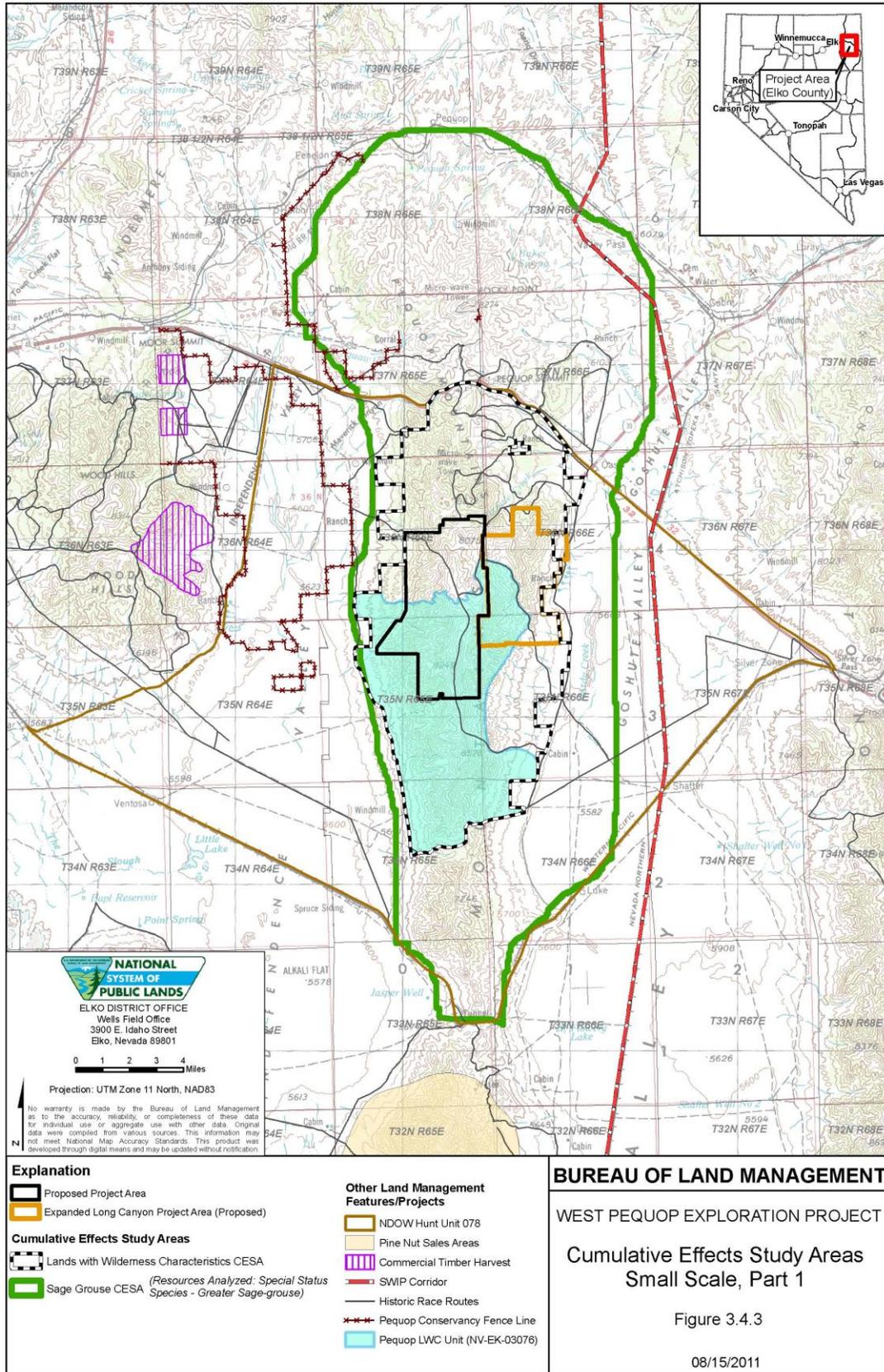
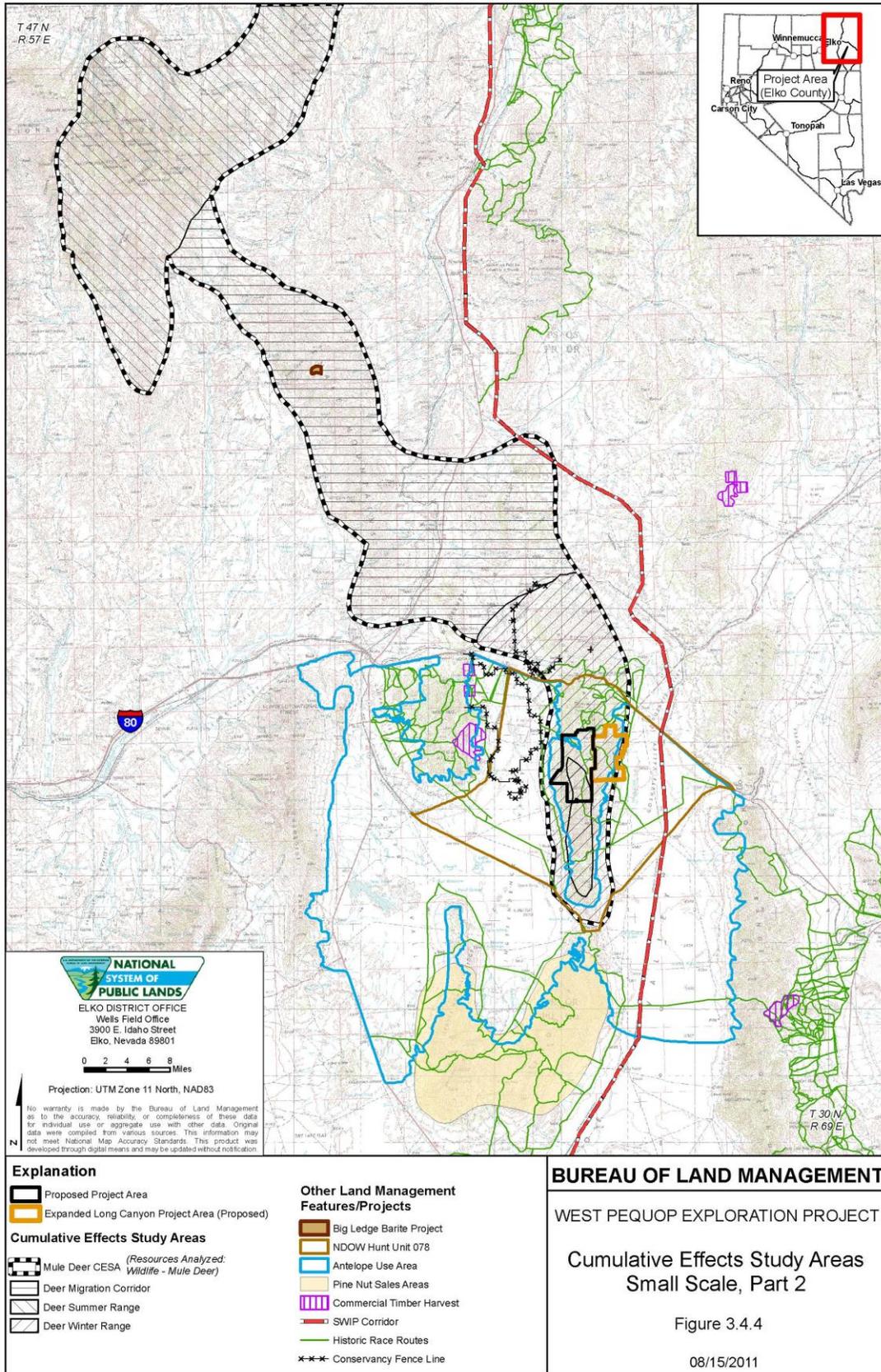


Figure 3.4.4: Cumulative Effects Study Areas – Small Scale, Part 2



depiction of the Mule Deer CESA. Table 3.4-1 lists the CESA for each of the potentially impacted resources. The timeframe for the cumulative effects analysis is 14 years to account for reclamation.

Table 3.4-1: Cumulative Effects Study Areas

Resource	Cumulative Effects Study Areas		
	Name	Acres	Description
Air and Atmospheric Resources	HUC5 Watersheds CESA	404,215	Hydrologic Unit Code Level 5 Watersheds - East and West Sides of Pequop Mountain Range (Figure 3.4.1)
Invasive, Nonnative Species			
Migratory Birds			
Special Status Species			
Vegetation			
Wildlife – Small Mammals			
Lands with Wilderness Characteristics	LWC CESA	63,235	Wilderness Characteristics Inventory Area (Figure 3.4.3)
Recreation	Recreation CESA	141,389	Local Recreational Use Area (Figure 3.4.2)
Cultural Resources	Cultural Resources CESA	226,421	Cultural Resource Area including Ethnographic Relationships between Pequop Mountains and Goshute Valley (Figure 3.4.2)
Grazing	Range Resources CESA	492,881	West Big Springs Grazing Allotment and East Big Springs Grazing Allotment (Figure 3.4.1)
Soils	Soils CESA	11,967	Project Area (Figure 3.4.1)
Special Status Species- Greater Sage-grouse	Sage Grouse CESA	191,898	Sage Grouse Area of Concern (Figure 3.4.3)
Visual Resources	Visual Resources CESA	31,909	Local VRM Area (Figure 3.4.2)
Water Resources	Immediate Watersheds CESA	84,692	Immediate Watersheds (Figure 3.4.1)
Wildlife-Mule Deer	Mule Deer CESA	723,871	Mule Deer Range (summer and winter) and Migration Corridor (Figure 3.4.5)

HUC5 Watersheds CESA

The HUC5 Watersheds on the east and west side of the Pequop Range encompassing the Project Area were used to analyze cumulative effects to air and atmospheric resources, invasive, nonnative species, migratory birds, special status species (excluding greater sage-grouse),

vegetation, and wildlife (small mammals). This area was chosen to analyze these resources due to the appropriate size and functionality of this area.

Lands with Wilderness Characteristics (LWC) CESA

The LWC CESA represents the Pequop LWC Inventory Area, which generally covers the areas of the West Pequop Mountains that are managed by the BLM. One private parcel totaling 160 acres is excluded from the northern portion of the CESA. Activities in the CESA include mineral exploration, approximately 230 miles of routes and roads used for exploration project access, motorized recreation, and access to non-motorized recreation. Several off-highway motorcycle race routes are also located in the LWC CESA.

Recreation CESA

The Recreation CESA addresses the major recreational uses in the area, which are motorcycle and mountain bike use. The mountain bike routes in the area are located to the north of the Project Area and just south of the I-80. Mountain bike races occurred in this area from 1991 through 2006. The majority of the motorcycle routes are located north of the Project Area however, some routes cross the Project Area in the far western and eastern portions. Motorcycle races occurred in the area from 1989 through 2004.

Cultural CESA

The Cultural CESA addresses the ethnographic connection between the Goshute Valley, the Pequop Mountains, and Independence Valley.

Grazing CESA

The Grazing CESA is made up of the East and West Big Springs Allotments. These allotments were formerly one large allotment, the Big Springs Allotment.

Soils CESA

The Project Area was used as the Soils CESA.

Sage Grouse CESA

The Sage Grouse CESA boundary was developed to address impacts to the birds located in the vicinity of the Project Area. The Project Area is on the easternmost edge of greater sage-grouse distribution in Nevada. The eastern boundary of the CESA was selected because it is unlikely that the greater sage-grouse in the area travel past the middle of Goshute Valley. The southern boundary of the CESA was selected to segregate the birds in the vicinity of Project Area from the population found on Spruce Mountain. According to NDOW, these two populations are distinct and very little movement occurs between these birds. The western boundary of the CESA is the eastern edge of Independence Valley and the western base of the Pequop Range since it has been documented that greater sage-grouse migrate over the entire Pequop Range. The northern boundary of the CESA was selected to segregate the population in Long Canyon from the populations located in Tecoma Valley and Toano Draw.

Visual Resources CESA

The Visual Resources CESA was created to analyze impacts in the viewshed encompassing the Project Area as seen by travelers on eastbound I-80 and from local access roads within Independence Valley.

Immediate Watersheds CESA

The immediate watersheds encompassing the Project Area were used as the CESA to analyze cumulative effects to surface and ground water resources. The smaller watersheds allow for a discrete analysis of surface disturbance activities that may contribute to a degradation of surface water quality and quantity within this area.

Mule Deer CESA

The Mule Deer CESA was developed to assess impacts from Project activities and other actions to the Area 7 mule deer herd that resides in Nevada in the summer and winter ranges as well as the migration corridor between these two areas. To accomplish this, the entire range that the deer herd utilizes in their annual life cycle within Nevada was used as the basis for the CESA boundary. Historic studies have documented that the deer migrating through the Project Area have summer ranges to the north and west. Deer from the Jarbidge Mountains located in NDOW Management Unit 072 and the Snake Range located in NDOW Management Unit 075 migrate to the south and east in the fall, through NDOW Management Unit 077 and onto their winter ranges located in NDOW Management Unit 078. Unlike other mule deer migrations in northeastern Nevada, this herd begins their migration before winter weather forces the deer to migrate (early October). The deer would arrive on the winter ranges before the end of October or the early part of November. The herd would remain on the winter ranges until early April when they would begin their return migration to the summer ranges. Figure 3.4.5 shows the deer CESA. The mule deer summer range depicted extends into Idaho; however, for the purpose of this document analysis has been restricted to Nevada.

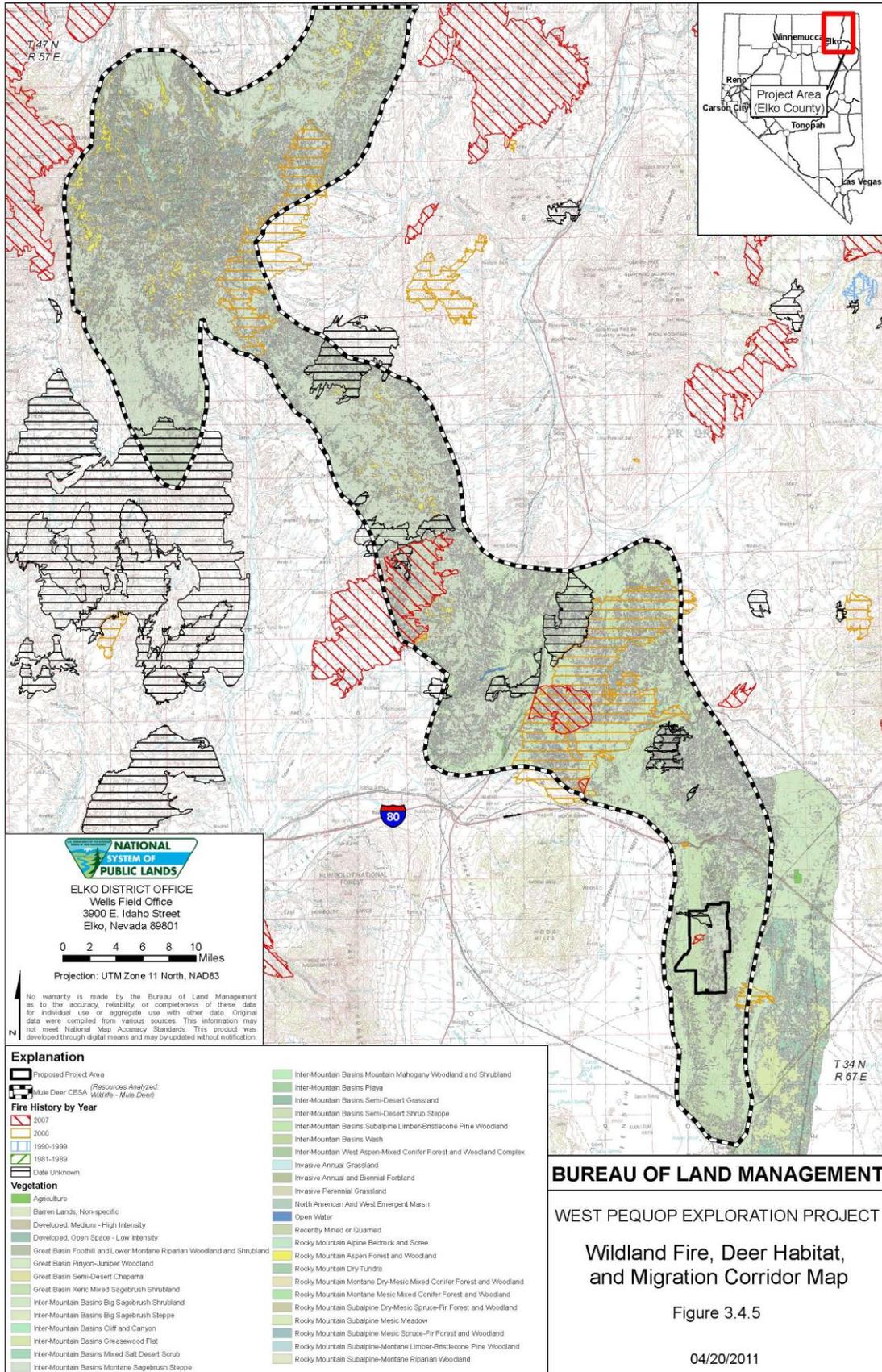
3.4.1 Past and Present Actions

Past and present actions in the ten CESAs include the following: livestock grazing and range improvements, wildland fires, wildlife and game habitat management, fire treatment/seedings, recreation, railroads, utility and other ROWs, mineral exploration, and mining.

Livestock Grazing and Range Improvements

Historical use in the Big Springs Allotment has consisted of livestock wintering on the white sage and salt desert shrub flats located in the extreme southern portions of the allotment, with spring, summer, and fall use occurring elsewhere on the allotment. Livestock have made little use of the upper elevation of the Pequop Range south of I-80 and the upper elevation of the Toano Range north and south of the I-80 (BLM, 2005). Authorized use on public and private lands in the two allotments in the Grazing CESA (East and West Big Springs) is 13,985 and 7,352 AUMs, respectively. This includes 2,025 and 1,137 suspended AUMs, respectively, on these allotments, a portion of which could be restored. This results in a total potential livestock use of 21,337 AUMs, of which 16,963 are on public land and 4,374 AUMs are on private land.

Figure 3.4.5: Wildland Fire, Deer Habitat, and Migration Corridor Map



Based on potential active use public and private AUMs there are approximately 23 acres per AUM.

There are 25 BLM-administered grazing allotments that are within or overlap the Deer CESA. The Deer CESA includes 723,871 acres. Range improvements within the Grazing and Deer CESAs include wells/storage tanks, reservoirs, pipelines, seedings, fences, spring/riparian enclosures, spring developments, and noxious weed treatments.

The Pequop Conservancy has erected 61.5 miles of fencing on private land located west and northwest of the Project Area as shown in Figures 3.4.3 and 3.4.4.

Wildland Fires

Two wildland fires, the 2001 Mile Marker 267 fire and the 2007 Independence Valley fire, burned approximately 756 acres in the Project Area. The BLM planted numerous tree and bush seedlings and applied an aerial upland seed mix in the area burned by the Mile Marker 267 fire. Additional disturbance associated with wildland fires has occurred the Mule Deer, Sage Grouse, Recreation, Visual Resources, Range Resources, HUC5 Watersheds, and Immediate Watersheds CESAs. Table 3.4-2 summarizes the disturbance acres from historic fires from 1981 to 2009, and fire treatments/seedings in these seven CESAs. Most of these fires were small lightning strikes associated with precipitation and burned less than one-half acre each. However, several fires 100 to 300 acres in size and from 1,000 to 3,500 acres in size have occurred. Historic fires in the CESA in the region are shown in Figure 3.4.5.

Table 3.4-2: Wildland Fires Disturbance Acres in the CESAs

CESA	Historic Fires (1981-2009)
HUC5 Watersheds	7,269
Recreation	2,456
Cultural	2,456
Grazing	8,669
Soils	702
Sage Grouse	7,924
Visual Resources	767
Immediate Watersheds	2,387
Lands With Wilderness Characteristics	1,931
Mule Deer - Summer Habitat	22,714
Mule Deer - Winter Habitat	7,702
Mule Deer - Migration Corridor	120,185
Mule Deer CESA - Total	150,601

Wildlife and Game Habitat Management

Research and management of big game and wildlife are undertaken by NDOW. The BLM manages wildlife habitat on public land, which may include modification to existing habitat and rangeland facilities. The Project Area is located in NDOW Hunt Unit 078 as shown in Figures 3.4.3 and 3.4.4. However, cumulative impacts take into consideration Hunt Units 072, 073, 075, 077, and 078. Deer harvest data were supplied by NDOW and show relatively low harvest

numbers in 2009 for Hunt Unit 078, only nine bucks were harvested. This low number reflects that most hunters think they are in Hunt Unit 077 when reporting their data and that these numbers are recorded before the majority of the deer migrate into Unit 078 (personal communication, Katie Miller and Kari Huebner, NDOW, June 29, 2010). In 2009, the total bucks harvested from Hunt Units 072, 072, 075, 077 was 485. All or portions of the NDOW Hunt Unit 078 is located within the Mule Deer (Winter Range) CESA, Sage Grouse CESA, LWC CESA, Recreation CESA, Immediate Watersheds CESA, HUC5 Watersheds CESA, Grazing CESA, Soils CESA, Visual CESA.

Pronghorn antelope are also primarily present in the valley floors on the east and west sides of the Pequop ranges as shown in Figures 3.4.3 and 3.4.4. This Antelope Use Area was delineated by NDOW and BLM biologists and demonstrates that pronghorn antelope primarily use a very limited portion of the lower slopes in the northwest corner of Project Area. The pronghorn antelope use area is not a separate CESA; however, the use area overlaps with portions of the Mule Deer (Winter Range) CESA, LWC CESA, Sage Grouse CESA, Recreation CESA, Immediate Watersheds CESA, HUC5 Watersheds CESA, Grazing CESA, Soils CESA, and Visual CESA.

Recreation

Historic recreational use includes hunting, Christmas tree cutting, dispersed off highway vehicle (OHV) use as well as organized mountain bike and motorcycle races. The Christmas tree cutting area and historic race routes are shown in Figures 3.4.2 and 3.4.3, respectively. Dispersed uses in the area have resulted in new trails, which are vulnerable to the introduction of nonnative, invasive, species and which may have contributed to the loss of soils and vegetation and increased erosion. There have not been any organized motorcycle or bike races in the area since 2006; however, there is continued dispersed use of the Recreation CESA and access through the Project Area.

Rights-of-Way

The LR2000 database was used to query the various types of ROWs that have been approved in the ten CESAs by Sections, Township and Ranges (BLM, 2010). The results of the LR2000 query identified the following ROWs: railroad; irrigation and water facilities; telephone; federal aid for highways; material sites; federal roads; communication; power lines; roads; wind energy test sites (these ROWs were closed without action so are not included in the CESA analysis), geothermal leases, other federal ROWs; and other (undefined) ROWs. The approximate acreage of each ROW within each CESA associated with these ROWs is listed in Table 3.4-3.

The acreage of surface disturbance associated with these ROWs cannot be quantified; however, it is assumed that these types of ROWs and the construction and maintenance associated with these facilities would create a level of surface disturbance that would contribute to cumulative impacts to various resources. The LR2000 database was queried on July 15, 2010 and again on March 22, 2011 (specific to the LWC CESA). Any new approved ROWs that have been added to the associated CESA areas in the LR2000 database after these dates have not been included in this analysis.

Table 3.4-3: Past and Present ROW Acres in the CESAs by Type of ROW

CESA	ROW Type (Acres)										
	Railroad	Water/Irrigation Facility	Telephone	Federal Aid-Highway	Material Sites	Roads	Communication	Power line	Wind & Geothermal	Other	Total
HUC5 Watersheds	1,678	72	1,835	1,999	1,090	880	10	3,877	3,222	2	14,665
Recreation	0	70	2,693	2,121	910	23	9	7,428	13	0	13,254
Cultural	1,317	71	1,232	2,359	766	87	10	5,784	4,424	11	16,061
Grazing	2,119	142	1,834	3,527	1,321	590	14	3,931	129	0	13,478
Soils	0	0	100	0	0	0	0	0	0	0	100
Sage Grouse	1,533	0.33	2,069	1,891	316	159	9	3,863	0	41	9,814
Visual Resources	774	0.33	823	778	176	108	0	218	0	0	2,877
Immediate Watersheds	40	0.33	1,959	1,477	120	32	9	3,862	1,536	1	9,036
LWC	0	0	1013	380	80	15	3	265	0	0	1,756
Mule Deer	2,452	23	2,088	3,626	298	1,046	9	6,607	7,445	82	27,676

Mineral Exploration and Mining

The LR2000 database was used to query the past and present mineral exploration or mining activities (authorized Notices, expired Notices, closed Notices, approved Plan of Operations) that have been approved in the ten CESAs by Sections, Township and Ranges. Past and present minerals activities in the ten CESAs include historic exploration and mining operations. Table 3.4-4 is a summary of the past and present mineral activities within each CESA and are based on the LR2000 database used by the BLM. The LR2000 database was queried on July 15, 2010 and again on March 22, 2011 (specific to the LWC CESA Study Area). Any new approved ROWs that have been added to the associated CESA areas in the LR2000 database after this these dates have not been included in this analysis.

Gold, silver, barite and tungsten were mined within the Jarbidge Mining District, which is located on National Forest System (NFS) lands. Mining and exploration have also occurred at the Big Ledge Mine, Stormy Creek Mine, and the Dry Creek Mill Site on BLM-administered lands within the Mule Deer CESA. NOV Mineral's Big Ledge project has been authorized to conduct up to 193.3 acres of surface disturbance for exploration and mining on private and public lands within Sections 9, 10 15, and 16 of T42N, R62E and Sections 22, 24, 26, 27, 34, and 35 of T42N, R61E (Figure 3.4.3). Disturbance would include exploration roads, overland travel, drill sites, trenching, access roads, haul road, stockpile removal area, and equipment staging area. Mineral exploration by Fronteer Development (USA), Inc. has approved disturbance occurring at the Long Canyon Project in the Pequop Range east of the Project Area (Figures 3.4.3 and 3.4.4) where approximately 44.93 acres of disturbance on public land and 54.93 acres on private land (total of 99.86 acres) have been approved for exploration disturbance. In addition, the Pequop Project has 100 acres of approved disturbance. These approved activities consist of surface disturbance and include construction of exploration roads, construction of drill pads, and trenching and bulk sampling. These approved disturbance acres fall within all ten CESAs.

3.4.2 Reasonably Foreseeable Future Actions

The Reasonably Foreseeable Future Actions (RFFAs) include continued livestock grazing, wildland fire and emergency fire rehabilitation, wildlife game and habitat management, dispersed recreation, ROW authorizations, mineral exploration and mining.

Livestock Grazing

Livestock grazing and range improvement activities are expected to continue consistent with the past and present actions discussion in Section 3.4.1.

Wildland Fires and Fire Rehabilitation

Wildland fires, fire suppression, and burned area rehabilitation are also likely to occur within some or all of the CESAs in the next 14 years (ten years for exploration plus four years for reclamation). This is likely to increase the changes in the plant community due to large fires but also result in somewhat less diverse communities in the short term because fire rehabilitation seed mixes include limited species.

Table 3.4-4: Past and Present Minerals Disturbance Acres in the Affected CESAs

CESA	Authorization Status	Total Acres of Disturbance
HUC 5 Watersheds	Closed Notices (0)	0
	Expired Notices (0)	0
	Authorized Notices (0)	0
	Approved Plans (2)	144.93
	HUC5 Watersheds CESA Total	144.93
Recreation	Closed Notices (5)	19.9
	Expired Notices (1)	4.96
	Authorized Notices (3)	12.93
	Approved Plans (1)	144.93
	Recreation CESA Total	182.72
Cultural	Closed Notices (5)	19.85
	Expired Notices (2)	9.9
	Authorized Notices (3)	12.93
	Approved Plans (1)	100.00
	Cultural CESA Total	142.70
Grazing	Closed Notices (15)	25.90
	Expired Notices (1)	4.96
	Authorized Notices (3)	12.93
	Approved Plans (4)	1,369.93
	Grazing CESA Total	1,413.72
Soils	Closed Notices (0)	0
	Expired Notices (0)	0
	Authorized Notices (0)	0
	Approved Plans (1)	100
	Soils CESA Total	100
Sage Grouse	Closed Notices (5)	19.85
	Expired Notices (1)	4.96
	Authorized Notices (3)	12.93
	Approved Plans (2)	144.93
	Sage Grouse CESA Total	182.67
Visual Resources	Closed Notices (0)	0
	Expired Notices (0)	0
	Authorized Notices (0)	0
	Approved Plans (1)	100
	Visual Resources CESA Total	100
Immediate Watersheds	Closed Notices (0)	0
	Expired Notices (0)	0
	Authorized Notices (0)	0
	Approved Plans (2)	144.93
	Immediate Watersheds CESA Total	144.93
Lands With Wilderness Characteristics (LWC)	Closed Notices (4)	17.25
	Expired Notices (2)	9.92
	Authorized Notices (3)	12.93
	Approved Plans (2)	144.93
	LWC CESA Total	185.03
Mule Deer	Closed Notices (32)	85.10
	Expired Notices (7)	21.36
	Authorized Notices (5)	21.58
	Approved Plans (3)	193.33
	Mule Deer CESA Total	321.37

Source: LR2000 Database June and July 2010

Wildlife and Game Habitat Management

Wildlife and game habitat management activities are expected to continue consistent with the past and present actions discussion in Section 3.4.1.

Recreation

Recreation activities and impacts may increase as a result of population growth near Wells and Wendover. Impacts from recreation would be similar to those discussed under past and present actions.

Rights-of-Way

Great Basin Transmission, LLC is developing the Southwest Intertie Project (SWIP), a 500-kV AC transmission line stretching between Idaho and southern Nevada. The greater than 500 miles of line is being developed in response to the growing needs of the Desert Southwest and the Northwest. The proposed corridor for the SWIP line is located east of the project in the Goshute Valley as shown on Figures 3.4.2, 3.4.3, and 3.4.4. The SWIP is still in the planning stages and level of surface disturbance and other impacts to resources associated with the construction and maintenance SWIP project are unavailable at this time. The SWIP corridor does transect the Cultural Resources CESA (16.9 miles), Sage Grouse CESA (4.6 miles), Mule Deer CESA (3.9 miles), Recreation CESA (15.5 miles), Grazing CESA (33.6 miles), and the HUC5 Watersheds CESA (15.1 miles).

Two pending Road ROWs totaling approximately 75.52 acres and one pending Telephone ROW for 101.92 acres are located within the Mule Deer CESA. One pending Road ROW for 6.99 acres is located within the Grazing CESA.

The LR2000 database was queried on July 15, 2010 (and March 22, 2011 for area in the LWC CESA boundary). Any new pending ROWs that have been added to the LR2000 database after these dates have not been included in this analysis.

Mineral Exploration and Mining

Mineral exploration activities are expected to continue based on current supply and demand of minerals and commodities. Data for the acres of RFFA surface disturbance in the CESAs is based on the LR2000 and proposed project information from the BLM and the USFS.

Fronteer Development (USA), Inc. has submitted a Plan of Operation to the BLM for the Expanded Long Canyon Project which would create an additional 69.43 acres of surface disturbance associated with mineral exploration activities. This would bring the total surface disturbance within their operations area to 169.29 acres when combined with the approved 99.86 acres mentioned above. The Expanded Long Canyon project area shares its western boundary with the eastern boundary of the West Pequop Project Area. Exploration activities proposed on the Expanded Long Canyon Project would include drilling, constructing drill access roads, and trench and bulk sampling. The Expanded Long Canyon Pequop Project Plan does account for reclamation of the disturbed areas and, therefore, no long-term impacts should result from the exploration activities. Portions or all of the Expanded Long Canyon Project are located

within the Immediate Watersheds CESA, Sage Grouse CESA, HUC5 Watersheds CESA, Mule Deer CESA (Winter Range), LWC CESA, Recreation CESA, LWC CESA, and Grazing CESA. In the Deer Summer Range (located primarily on NFS Lands), Atna Resources, Inc. has proposed continued mineral exploration within the Jarbidge Exploration area located approximately 60 miles northwest of Wells, Nevada, in the vicinity of the town of Jarbidge. The proposed project is located on NFS lands in Sections 9 through 11, 15, 16, 21 through 23, 26 through 28, 33, and 34 of T46N, R58E. The proposed project would disturb a maximum of 27.8 acres in phases over a five-year period and include disturbance from drill sites, sumps, constructed roads, and reopened reclaimed roads. The activities proposed in the Deer Summer Range are not tracked on the LR2000; therefore, the total proposed disturbance is based on the aforementioned numbers and could total approximately 27.8 acres.

One pending Plan of Operations, submitted by All Mineral Corp., for mineral exploration is located in Sections 1 and 26 of T41N, R62E. The proposed project would disturb a maximum of 140 acres. This project falls within the Mule Deer CESA. In addition, two pending Notices totaling 4.86 acres of proposed disturbance for mineral exploration are located within the Mule Deer CESA.

No pending Notices of Plans of Operation, other than those for the Proposed Action, were noted on the LR2000 database within the Immediate Watersheds CESA, Lands with Wilderness Characteristics (LWC) CESA, Sage Grouse CESA, HUC5 Watersheds CESA, Recreation CESA, Soils CESA, Visual CESA, and Grazing CESA.

The LR2000 database was queried last on July 15, 2010 and March 22, 2011 (specific to the LWC CESA). Any new pending Notices or Plans of Operations that have been added to the associated CESA areas in the LR2000 database after these dates have not been included in this analysis.

3.4.3 Air and Atmospheric Resources

The CESA for Air and Atmospheric Resources includes the HUC5 Watersheds, which encompasses 404,215 acres and is shown on Figure 3.4.1.

Past and Present Actions: Present actions within the HUC5 Watersheds CESA that are likely to be contributing to air quality impacts include wildland fire, dispersed recreation, minerals exploration, and road construction and maintenance. These activities are principally contributing point source particulate matter emissions and fugitive dust to the air quality impacts; however, products of combustion are also emitted.

Historic fires between 1981 and 2009 have burned approximately 7,269 acres in the HUC5 Watersheds CESA (1.8 percent of the CESA). Approved, closed or expired mineral exploration and mining Notices or Plans total 144.93 acres of surface disturbance on public land and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (199.86 acres or 0.05 percent of the CESA). Approximately 14,665 acres of ROWs were issued within the HUC5 Watersheds CESA have the potential to create surface disturbance or impact air quality. Approximately 272 miles of historic race routes are present within the HUC5 Watersheds CESA.

RFFAs: RFFAs within the HUC5 Watersheds CESA that may contribute to impacts to air quality include dispersed recreation, transportation, mineral exploration, transmission line construction, and wildland fires. These impacts result in impacts to air quality from the emissions of point source particulate matter, fugitive dust, and the products of combustion.

The Expanded Long Canyon Project operations area is located within the HUC5 Watersheds CESA (6,752 acres) and has proposed an additional 69.43 acres of surface disturbance. Approximately 15.1 miles of the proposed SWIP corridor is located within the HUC5 Watersheds CESA. No additional pending ROWs or other proposed mineral exploration or mining activities were noted in the HUC5 Watersheds CESA that would impact air quality.

Cumulative Impacts: The incremental contribution of the Proposed Action's particulate and combustion emissions and fugitive dust would be relatively small and the cumulative emissions are generally dispersed; therefore, no cumulative impacts to air and atmospheric resources are expected from the Proposed Action.

3.4.4 Cultural Resources

The CESA for cultural resources is a BLM defined area, which includes 226,421 acres and is shown on Figure 3.4.2.

Past and Present Actions: Cultural properties tend to degrade over time due to natural forces; however, many survive for hundreds or thousands of years. Modern human activity tends to exacerbate the damage and consequently, cultural resources are being damaged and disappearing at an ever-increasing rate. Many of the recorded cultural resources in the CESA exhibit impacts resulting from modern use of the land. Grazing damage is found at virtually all recorded sites, and sites are likely to have sustained damages from previous mining exploration, road construction, NDOT gravel pits, fences, agricultural practices, oil and gas seismic exploration, recreation, tree removal by chaining, wildfires and erosion resulting from these activities. Although difficult to quantify, the paucity of artifacts at some sites may be due to removal by artifact collectors.

Past and present activities within the Cultural and Recreation CESA that have the potential to contribute to degradation of cultural artifacts include the 142.7 acres of approved mineral exploration or mining disturbance (less than 0.06 percent of the CESA), 2,456 acres of historic fires (two percent of the CESA), and 16,061 acres of ROWs that have the potential to create surface disturbance (ten percent of the CESA). The recent vegetation removal associated with the 224 acre Payne Treatment Basin (less than 0.2 percent of the CESA) was unlikely to do any harm to cultural resources since it lies within an old chaining area where any cultural resources that were present are assumed to have been destroyed. In addition, approximately 181,845 acres of the NDOW 078 Hunt Unit and 172 miles of historic race routes are located within the CESA. Approximately 38 miles of the Pequop Conservancy fencing is located within the CESA, although this is on private land.

Another factor that leads to the loss of cultural resources and archaeological data is the imperfect nature of cultural resource management and archaeological research. Intensive cultural resource inventories (approximately 100 feet between transects) are meant to identify most cultural resources within the inventory boundary, but result in some smaller sites and low density sites being overlooked. The overall success rate depends on many factors including transect spacing,

training/experience of the field crew, surface visibility, lighting, time of day, difficulty of the terrain, etc. Once a cultural resource is discovered, information is gathered by closely scrutinizing the site area and sometimes excavating small probe units to determine if subsurface deposits are present. This information is documented in site forms and inventory reports which include National Register eligibility recommendations. The federal agency then makes a formal determination of eligibility and project effects based on the report and any other available data.

Given that eligibility determinations are based primarily on sites' surface characteristics, there is room for error given that surface manifestations do not always accurately reflect the nature and density of subsurface deposits. Other factors at play are the differences of opinion among professional archaeologists as to what research (and therefore archaeological sites) is important, and the evolving nature of archaeological research. In some cases, sites now thought to be lacking the ability to answer important questions may become important as archaeological method and theory progress but may not be preserved. The courts have determined that cultural resource management standards such as those employed for the current project meet the objectives of the NHPA and other pertinent statutes, but this does not necessarily imply that there are not project-specific or cumulative losses of cultural resources or information important to understanding the past.

Reasonably Foreseeable Future Actions: Grazing, other agricultural activities and wildfires are likely to continue within the cultural resource CESA but probably, on average, with fewer impacts to cultural resources than in the past because the more severe damage has already been done. Agricultural activities and other actions on private land have considerable potential to seriously damage cultural resources that are part of the historic and prehistoric land use patterns within the CESA, but private development plans, if any, are unknown and outside the purview of BLM responsibility and this Project analysis.

The Expanded Long Canyon Project operations area is located within the Cultural CESA and has proposed an additional 69.43 acres of surface disturbance (0.03 percent of the CESA). Approximately 16.9 miles of the proposed SWIP corridor are located within the Cultural CESA.

Cumulative Impacts: The condition of cultural resources within the CESA would likely continue to deteriorate due to both human and natural causes. While the Proposed Action would contribute to the overall decline, mitigation measures would prevent the majority of damage and overall incremental impacts would be comparatively minor.

3.4.5 Invasive, Nonnative Species

The CESA for Invasive, Nonnative Species includes the HUC5 Watersheds, which encompasses 404,215 acres and is shown on Figure 3.4.1.

Past and Present Actions: Past and present actions with impacts created from invasive, nonnative species (noxious weeds) have been limited and include mineral exploration, wildland fires, ranching operations (grazing), road construction and maintenance, or dispersed recreation that could have disturbed vegetation and soils creating an opportunity for invasive plant colonization and introduced noxious weed seeds. Cheatgrass, an invasive species, has spread due to wildland fires. There are no specific data that quantify impacts from invasive, nonnative species as a result of grazing or recreation. West of the Project Area invasive or nonnative species such as hoary

cross, scotch thistle, and black henbane infestations have been identified in the Pequop Mountain range along existing roads.

Historic fires from 1981 to 2009 have burned approximately 7,269 acres in the HUC5 Watersheds CESA (1.8 percent of the CESA). Approved, closed or expired mineral exploration and mining Notices or Plans total 144.93 acres of surface disturbance on public land and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (199.86 acres or 0.05 percent of the CESA). There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, have become naturally stabilized, and have naturally revegetated over time. Approximately 14,665 acres of ROWs issued within the HUC5 Watersheds CESA have the potential to create surface disturbance and introduce invasive species. A Christmas Tree Cutting Area and NDOW Hunt Unit 078 are also located within the CESA which have the potential to create surface disturbance and associated off road vehicular traffic can introduce invasive species. The majority of the HUC5 Watersheds CESA is located within the Big Springs Grazing Allotment and livestock grazing and associated management contributes to the spread of invasive species. In addition, approximately 272 miles of historic race routes are present within the HUC5 Watersheds CESA.

Reasonably Foreseeable Future Actions: Potential impacts from invasive, nonnative species (noxious weeds) as a result of grazing, dispersed recreation including Christmas tree cutting, roads, ROWs, minerals activities, or loss of native vegetation associated with potential wildland fires could occur. There are no specific data on the potential impacts resulting from invasive, nonnative species due to dispersed recreation, grazing, or potential wildland fires.

The Expanded Long Canyon Project operations area is located within the HUC5 Watersheds CESA (6,752 acres) and has proposed an additional 69.43 acres of surface disturbance. Approximately 15.1 miles of the proposed SWIP corridor is located within the HUC5 Watersheds CESA. No quantifiable impacts pertaining to invasive species and surface disturbance from the SWIP is available at this time. No additional pending ROWs or other proposed mineral exploration or mining activities were noted in the HUC5 Watersheds CESA.

Cumulative Impacts: Disturbance to soils and vegetation from past and present actions has created the opportunity for invasive species to colonize some areas. Disturbed sites and recently seeded areas associated with reclamation are candidates for invasion by undesirable species such as noxious weeds and cheatgrass. Over time, reclamation, seeding, and monitoring of disturbed areas would reduce the potential for the introduction and colonization of weed species. The past and present actions have disturbed only a small portion of the CESA, and all RFFAs would require BMPs such as washing equipment before entering the property and the use of weed free straw bales and seed mixes, as well as mitigation for the control of invasive, nonnative species.

The total disturbance from the Proposed Action (300 acres) would affect 0.07 percent of the CESA. In addition, impacts from noxious weeds as a result of the Project would be limited to the infestations following removal of vegetation. These impacts would be localized and minimized due to implementation of environmental protection measures and implementation of a Noxious Weed Plan. Therefore, incremental cumulative impacts from invasive, nonnative species as a result of the Proposed Action when added to the past and present actions and RFFAs would be minimal.

3.4.6 Lands with Wilderness Characteristics

The CESA for Lands with Wilderness Characteristics (LWCs) is the boundary of the Pequop LWC Inventory Area and contains 63,235 acres, in which 27,835 acres were found to have wilderness characteristics (Pequop LWC Unit #NV-EK-03076). Therefore, approximately 44 percent of the CESA contains LWC areas.

Past and Present Actions: Past and present actions that could impact wilderness characteristics (e.g., naturalness, opportunities for solitude) include mineral exploration, road construction, and off-road motor vehicle recreation. Mineral exploration activities include the 199.86 acres of approved disturbance associated with the Long Canyon Exploration Project and Pequop Exploration. However, none of the existing disturbance associated with the Long Canyon Exploration Project is located within the Pequop LWC Unit. Approximately 17.5 acres of existing disturbance from the Pequop Exploration Project is located within the Pequop LWC Unit. In addition, approximately 230 miles of routes and roads used for motorized recreation and access to recreational sites are located within the CESA; however, a majority of the roads are present in areas of the CESA that do not possess wilderness characteristics.

Reasonably Foreseeable Future Actions: Potential impacts to wilderness characteristics from road construction and maintenance and mineral exploration activities could occur. There are no specific guidelines to evaluate potential impacts to LWC areas from mineral exploration activities; however, disturbance would be temporary and impacts would be mitigated by post-project reclamation as required by law. The proposed Expanded Long Canyon Exploration Project is located entirely within the LWC CESA and has proposed an additional 69.43 acres of surface disturbance, of which a total of 16.96 acres of surface disturbance is proposed within the Pequop LWC Unit. No additional pending ROWs or other proposed mineral exploration or mining activities were reported in the LWC CESA.

Cumulative Impacts: The planned Phase I exploration activities of the Proposed Action include drill site construction and drill access road construction within approximately 594 acres within the Pequop LWC Unit, but would total no more than 28 acres of surface disturbance. Future phases of the Proposed Action could disturb up to 291.39 acres within the Pequop LWC Unit. When combine with existing disturbance from the Pequop Exploration Project and proposed disturbance from the Expanded Long Canyon Exploration Project, a maximum of 351.15 acres of surface disturbance could occur within the Pequop LWC Unit, which equates to approximately 1.26 percent of the Pequop LWC Unit. Based on the above analysis and findings, incremental and temporary impacts to wilderness characteristics as a result of the Proposed Action when added to the past and present actions and RFFAs would be minimal.

3.4.7 Migratory Birds

The CESA for migratory birds includes the HUC5 Watersheds, which encompasses 404,215 acres and is shown on Figure 3.4.1.

Past and Present Actions: Past and present actions that could impact migratory birds include mineral exploration, ranching operations (grazing), road construction and maintenance, wildland fire, and dispersed recreation. Impacts to migratory birds have resulted from the following: 1) destruction of habitat associated with road building and cutting trees; 2) disruption from human presence or noise such as drill rigs, water trucks and four wheel drive pickups; or 3) direct

impacts/harm to migratory birds that would result if trees containing viable nests were cut down or ground nests destroyed by construction or ranching equipment. There are no specific data that quantify impacts to migratory birds as a result of grazing or recreation. However, impacts to migratory birds from recreation activities would include destruction of native vegetation or nesting areas from off road vehicles that traveled off of established roadways. Impacts to migratory birds from grazing include trampling of vegetation or nesting areas near streams, springs, or riparian areas. Impacts from wildland fires would include total destruction of the existing habitat and alteration of the habitat thereafter.

Historic fires from 1981 to 2009 have burned approximately 7,269 acres in the HUC5 Watersheds CESA (1.8 percent of the CESA). Approved, closed or expired mineral exploration and mining Notices or Plans total 144.93 acres of surface disturbance on public land and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (199.86 acres or 0.05 percent of the CESA). There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, have become naturally stabilized, and have naturally revegetated over time. Approximately 14,665 acres of ROWs were issued within the HUC5 Watersheds CESA have the potential to create surface disturbance and disturb migratory bird habitat and vegetation. A Christmas Tree Cutting Area and NDOW Hunt Unit 078 are located within the CESA and have the potential to create noise and disturbance to migratory birds, remove or alter habitat. The majority of the HUC5 Watersheds CESA is located within the Big Springs Grazing Allotment and livestock grazing and associated management contributes to the spread of invasive species, which can have an indirect effect on migratory birds. In addition, approximately 272 miles of historic off-road motorcycle race routes are present within the HUC5 Watersheds CESA, which has created habitat fragmentation or disturbance to vegetation structure. However, disturbance to migratory birds from past and present actions would have been reduced through reclamation and seeding of disturbed areas and natural recolonization of native species. The past and present actions that are quantifiable have disturbed only a small portion of the CESA, approximately one percent.

Reasonably Foreseeable Future Actions: Potential impacts to migratory birds from grazing, dispersed recreation, roads, ROWs, minerals activities or loss of native vegetation associated with potential wildland fires could occur. There are no specific data on the potential impacts to migratory birds or their habitat as a result of dispersed recreation, grazing, or potential wildland fires.

The Expanded Long Canyon Project operations area is located within the HUC5 Watersheds CESA (6,752 acres) and has proposed an additional 69.43 acres of surface disturbance. Approximately 15.1 miles of the proposed SWIP corridor is located within the HUC5 Watersheds CESA. No quantifiable impacts pertaining to invasive species and surface disturbance from the SWIP is available at this time. No additional pending ROWs or other proposed mineral exploration or mining activities were noted in the HUC5 Watersheds CESA. RFFAs would be required to implement mitigation measures and abide by the MBTA, which would minimize impacts.

Cumulative Impacts: Impacts to migratory birds and their habitat from the Proposed Action would be limited to the removal of vegetation, or destruction of habitat (up to 300 acres), and noise associated with exploration. These impacts would be localized and minimized due to implementation of environmental protection measures outlined in Section 2.2.13 (e.g., migratory

bird survey during nesting season to comply with the MBTA). The Proposed Action would affect approximately 0.07 percent of the HUC5 Watersheds CESA. Based on the above analysis and findings incremental impacts to migratory birds as a result of the Proposed Action when added to the past and present actions and RFFAs are expected to be minimal.

3.4.8 Range Resources

The Grazing CESA consists of the East and West Big Springs Grazing Allotments which includes approximately 492,881 acres and is shown on Figure 3.4.1. Authorized use in the Grazing CESA for both public and private land totals 21,337 AUMs. Based on potential active use AUMs there are approximately 23 acres per AUM.

Past and Present Actions: Past and present actions that could impact range resources include mineral exploration, road construction and maintenance, ROWs, wildland fires, fencing, or dispersed recreation that could have impacted water sources or reduced forage. There are no specific data that quantify impacts from roads, ROWs, or recreation; however, the actual building of roads, sumps, fences other linear features, or off road traveling would impact habitat or disrupt movement of grazing animals.

Historic fires from 1981 to 2009 have burned approximately 8,669 acres in the Grazing CESA (1.8 percent of the CESA). Approved, closed, or expired mineral exploration and mining Notices or Plans total 1,413.72 acres and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (1,468.65 acres or 0.3 percent of the CESA). There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, have become naturally stabilized, and have naturally revegetated over time. Approximately 13,607 acres of ROWs were issued within the Grazing CESA have the potential to affect livestock movement and disturb forage habitat. In addition, approximately 238 miles of historic off-road motorcycle race routes are present within the Grazing CESA which has created habitat fragmentation or disturbance to vegetation structure. Approximately 61.5 miles of fencing constructed by the Pequop Conservancy is also located within the Grazing CESA and has fragmented habitat for grazing animals.

Reasonably Foreseeable Future Actions: Potential impacts to range resources could result from dispersed recreation, roads, wildland fires, ROWs, and minerals activities. Approximately 33.6 miles of the proposed SWIP corridor is located within the Range Resources CESA. There are no specific data on the potential impacts to range resources from dispersed recreation or wildfires.

The Expanded Long Canyon Project operations area is located within the HUC5 Watersheds CESA (6,752 acres) and has proposed an additional 69.43 acres of surface disturbance.

Cumulative Impacts: Impacts to water sources or a reduction in forage from past and present actions have impacted livestock grazing. However, less than two percent of the CESA was disturbed and some of the disturbance has been reclaimed, seeded, or otherwise naturally revegetated, which would decrease the impacts. In addition, stocking rates for the grazing allotment are based on the availability of water and forage, which may be influenced by natural forces.

The Proposed Action would disturb up to 300 acres of potential forage, which equates to approximately 11 AUMs and should have no impacts to water sources used for livestock watering primarily because water resources are very limited in the Project Area. Therefore, incremental impacts to range resources as a result of the Proposed Action when added to the past and present actions and RFFAs would be minimal.

3.4.9 Recreation

The CESA for recreation is the local recreational use area, which contains 141,389 acres and is shown on Figure 3.4.2.

Past and Present Actions: Past and present actions that could impact recreation have been limited and include mineral exploration, road construction and maintenance, ranching operations (grazing), ROWs, fence construction, or wildland fires that may have restricted access or reduced recreation opportunities within the CESA. There are no specific data that quantify impacts to recreation from grazing, ROWs, or roads; however, the greatest impact would be related to limitations on access.

Past and present activities within the Recreation CESA that have the potential to affect access or recreational opportunities or experiences includes the 182.72 acres of approved mineral exploration or mining disturbance and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land (a total of 237.65 acres or 0.17 percent of the CESA), 2,456 acres of historic fires (1.7 percent of the CESA), 13,254 acres of ROWs that have the potential to impede access. Approximately, 7.6 miles of the Pequop Conservancy fencing is located within the CESA, although this is on private land, but may block access to public lands open for recreation.

Reasonably Foreseeable Future Actions: Potential impacts to recreation from grazing, road construction and maintenance, ROWs, minerals activities, and potential wildland fires could occur. There are no specific data on the potential impacts to recreation from grazing, ROWs or roads; however, they would be similar to the impacts described for past and present actions.

The Expanded Long Canyon Project operations area is located entirely within the Recreation CESA and has proposed an additional 69.43 acres of surface disturbance (0.05 percent of the CESA). Approximately 15.5 miles of the proposed SWIP corridor is located within the Recreation CESA. No additional pending ROWs or other proposed mineral exploration or mining activities were noted in the Recreation CESA.

Cumulative Impacts: The Proposed Action would not limit access for recreation; therefore, the only potential impacts would be as a result of noise and activity in the area. The primary recreation use in the CESA includes OHVs or motorcycle use, and mountain biking, and hunting. The majority of these activities would not be impacted by noise and human presence in the area. Noise could affect hunting; however, the Proposed Action would only result in localized temporary disturbance from noise and would, therefore, have minimal impacts on hunting. Based on the above analysis and findings, incremental impacts to recreation as a result of the Proposed Action when added to the past and present actions and RFFAs would be minimal.

3.4.10 Soils

The CESA for Soils is the Project Area, which contains 11,967 acres and is shown on Figure 3.4.1.

Past and Present Actions: Past and present actions that could impact soils include mineral exploration, ranching operations (grazing), road construction and maintenance, ROWs, wildfires, or dispersed recreation. Impacts from these activities include loss of soils productivity due to changes in soil physical properties, soil fertility, soil movement in response to water and wind erosion, and loss of soil structure due to compaction. There are no specific data that quantify impacts from grazing, roads, ROWs, or recreation.

No ROWs or mineral exploration activities have been conducted within the Soils CESA other than the activities associated with the Project. No historic fires have impacted soils within the Soils CESA. A Christmas Tree Cutting Area and NDOW Hunt Unit 078 located within the CESA have the potential to create disturbance to soils from off road vehicular traffic and vegetation removal. In addition, dispersed recreation and approximately 10.5 miles of historic race routes are present within the Soils CESA and contribute to the erosion and degradation of access roads. The Soils CESA is located within the Big Springs Grazing Allotment and livestock grazing and associated management contributes to the erosion of soils particularly in drainages or riparian areas.

Reasonably Foreseeable Future Actions: Potential impacts to soils could result from grazing, dispersed recreation, roads, wildfires, ROWs, and minerals activities in the CESA. There are no specific data on the potential impacts to soils from dispersed recreation, grazing, or potential wildfires. Impacts associated with RFFAs would be similar to the impacts described for past and present actions.

No pending ROWs or mineral activities were noted within the Soils CESA other than the Proposed Action. Continued reclamation of past mining and exploration disturbance and future restoration activities would mitigate soil movement and productivity loss. Soil salvaged and used in reclamation would become viable and would be expected to return to pre-disturbance productivity once vegetation was established. Seeding and revegetation of areas that have been burned would reduce soil movement and loss.

Cumulative Impacts: The total disturbance from the Proposed Action would disturb up to 300 acres of soils, which is approximately 2.5 percent of the CESA. In addition, these impacts would be localized and minimized due to implementation of environmental protection measures and BMPs, which include concurrent reclamation and the use of silt fences or weed-free straw bales to prevent erosion. Therefore, the incremental impacts to soils as a result of the Proposed Action when added to the past and present actions and RFFAs would be minimal.

3.4.11 Special Status Species

The CESA for Special Status Species is the HUC5 Watersheds, which includes 404,215 acres and is shown on Figure 3.4.1, and the Sage Grouse CESA, which includes 191,898 acres and is shown on Figure 3.4.3.

Past and Present Actions: Past and present actions that could impact special status species, (e.g., bats, greater sage-grouse, pygmy rabbits, ferruginous hawks, bald eagles, and Mattoni's blue butterfly), include mineral exploration, ranching operations (grazing), road construction and maintenance, or dispersed recreation. Impacts to special status species from these activities include loss of forage, cover, and habitat as well as disturbance of mating and brood rearing practices. There are no specific data that quantify impacts to special status species as a result of grazing or recreation; however, the greatest impact would be from off road use that destroyed habitat.

Historic fires between 1981 and 2009 have burned approximately 7,924 acres in the Sage Grouse CESA (four percent of the CESA) and 7,269 acres in the HUC5 Watersheds CESA used to analyze all other sensitive species (1.8 percent of the CESA). Approved, closed, or expired mineral exploration and mining Notices or Plans total 182.67 acres in the Sage Grouse CESA and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (totaling 237.6 acres or 0.06 percent of the Sage Grouse CESA). In the HUC5 Watersheds CESA these activities total 144.93 acres on public land and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (199.86 acres or 0.10 percent of the HUC5 Watersheds CESA). There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed and some areas have naturally revegetated over time. A total of 9,840 acres of ROWs were issued within the Sage Grouse CESAs and 14,665 acres of ROWs were issued within the HUC5 Watersheds CESA that has the potential to create surface disturbance and habitat fragmentation and degradation for sensitive species. Approximately 127 miles and 272 miles of historic race routes are present within the Sage Grouse and HUC5 Watersheds CESAs, respectively. A Christmas Tree Cutting Area and NDOW Hunt Unit 078 are located within the Sage Grouse CESA and HUC5 Watersheds CESA. Activities associated with these management units have the potential to create noise and disturbance to sensitive species and remove or alter habitat. The majority of the HUC5 Watersheds CESA and Sage Grouse CESA are located within the Big Springs Grazing Allotment and livestock grazing and associated management contributes to the spread of invasive species and change vegetation structure which can have an indirect effect on special status species. Approximately 61.5 miles of fencing, constructed by the Pequop Conservancy, are also located within the CESAs and have fragmented habitat for special status species.

Reasonably Foreseeable Future Actions: Potential impacts to special status species from grazing, dispersed recreation, roads, ROWs, fence building, minerals activities or loss of cover, forage, or habitat associated with future wildland fires could occur. There are no specific data on the potential impacts to special status species as a result of dispersed recreation, ROWs or fence construction, grazing, or potential wildland fires.

The Expanded Long Canyon Project operations area is located entirely within the Sage Grouse CESA and partially within the HUC5 Watersheds CESA and has proposed an additional 69.43 acres of surface disturbance. Approximately 15.1 miles of the proposed SWIP corridor is located within the HUC5 Watersheds CESA and 4.6 miles is located within the Sage Grouse CESA. No additional pending ROWs or other proposed mineral exploration or mining activities were noted in the HUC5 Watersheds CESA.

The greatest impact to special status species is habitat alteration, which would occur from the past, present and RFFAs from reclamation of exploration areas and disturbance associated with

ROWs and seeding in burn areas that would favor herbaceous species over shrubs. The primary impact relates to changes in dominant plant communities that affect habitat for wildlife (i.e., conversion from sagebrush to grasslands). Wildland fires combined with displacement of native species by invasive annual grasses such as cheatgrass are the primary factors that have altered the structure, composition, and ecology of plant communities in the CESA. Vegetation from exploration reclamation of roads and drill pads would initially alter the piñon-juniper woodlands with grass and forb species that can exist in the environment of northeastern Nevada, are proven species for revegetation, or are native species found in the existing plant communities. This conversion of habitat is favorable to the greater sage-grouse. In time, the reclaimed and seeded areas should result in stable plant communities with densities that are similar to the pre-disturbance plant densities. Impacts to vegetation from recreation activities would include destruction of native vegetation from off road vehicles that travel off established roadways. Impacts to vegetation from grazing would include trampling of vegetation near streams, springs, or riparian areas. Disturbed sites and recently seeded areas are candidates for invasion by undesirable species such as noxious weeds and cheatgrass.

Cumulative Impacts: Loss of forage, cover, and habitat from quantifiable past and present actions have impacted special status species in some areas. A total of four percent of the Sage Grouse CESA and less than two percent of the HUC5 Watersheds CESA was disturbed and some of the disturbance has been reclaimed, seeded, or otherwise revegetated, which would decrease the impacts further. In addition, all RFFAs would require avoidance or other mitigation for the protection of special status species and their habitat.

If approved, the total disturbance from the Expanded Long Canyon Project would disturb up to 169.29 acres of potential sensitive species habitat (approximately 0.1 percent of the HUC5 Watersheds CESA and approximately 0.08 percent of the Sage Grouse CESA). There would be no cumulative adverse impacts to any listed threatened or endangered species as none of these species are known to reside within the CESA. Sensitive bat species, pygmy rabbits, raptors, Mattoni's blue butterfly, and greater sage-grouse are the only special status animal species known to occur in the Project Area. Based on the above analysis and findings and the environmental protection measures outlined in Section 2.2.13, incremental impacts to special status species as a result of the Proposed Action when added to the past and present actions and RFFAs are expected to be minimal.

3.4.12 Vegetation

The CESA for vegetation includes the HUC5 Watersheds, which encompasses 404,215 acres and is shown on Figure 3.4.1.

Past and Present Actions: Past and present actions with impacts to vegetation have been limited and include mineral exploration, wildland fires, ranching operations (grazing), road construction and maintenance, or dispersed recreation that altered the structure, composition, and ecology of plant communities in the CESA. There are no specific data that quantify vegetation and habitat loss from grazing or recreation.

Historic fires from 1981 to 2009 have burned approximately 7,269 acres in the HUC5 Watersheds CESA (1.8 percent of the CESA). Approved, closed or expired mineral exploration and mining Notices or Plans total 144.93 acres and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (totaling

199.86 acres or 0.05 percent of the CESA). There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, have become naturally stabilized, and have naturally revegetated over time. Approximately 14,665 acres of ROWs were issued within the HUC5 Watersheds CESA have the potential to create surface disturbance and impact vegetation. A Christmas Tree Cutting Area and NDOW Hunt Unit 078 are also located within the CESA which have the potential to create surface disturbance and associated off road vehicular traffic and impact vegetation. The majority of the HUC5 Watersheds CESA is located within the Big Springs Grazing Allotment and livestock grazing and associated management can impact vegetation. In addition, approximately 272 miles of historic race routes are present within the HUC5 Watersheds CESA.

Reasonably Foreseeable Future Actions: Potential impacts to vegetation as a result of grazing, dispersed recreation including Christmas tree cutting, roads, ROWs, minerals activities, or loss of native vegetation associated with potential wildland fires could occur. There are no specific data on the potential impacts to vegetation due to dispersed recreation, grazing, or potential wildland fires.

The proposed Expanded Long Canyon Project operations area is located within the HUC5 Watersheds CESA (6,752 acres) and has proposed an additional 69.43 acres of surface disturbance. Approximately 15.1 miles of the proposed SWIP corridor is located within the HUC5 Watersheds CESA. No quantifiable impacts pertaining to vegetation from the SWIP are available at this time. No additional pending ROWs or other proposed mineral exploration or mining activities were noted in the HUC5 Watersheds CESA.

Cumulative Impacts: Surface disturbance from past and present actions have impacted vegetation in the CESA. Disturbed sites and recently seeded areas associated with reclamation are candidates for invasion by undesirable species such as noxious weeds and cheatgrass. Over time reclamation, seeding, and monitoring of disturbed areas would reduce the impacts to vegetation. The past and present actions have disturbed only a small portion of the CESA, and RFFAs would include revegetation and require BMPs such as washing equipment before entering the property and the use of weed free straw bales and seed mixes, as well as mitigation for the control of invasive, nonnative species.

The total disturbance from the Proposed Action (300 acres) would affect 0.07 percent of the CESA. In addition, impacts to vegetation as a result of the Project would be minimized following reclamation including revegetation. Therefore, incremental cumulative impacts to vegetation as a result of the Proposed Action when added to the past and present actions and RFFAs would be minimal.

3.4.13 Visual Resources

The CESA for Visual Resources is the local VRM area, which includes 31,909 acres and is shown on Figure 3.4.2.

Past and Present Actions: Past and present actions that could impact visual resources include minerals activities, road construction and maintenance, railroad construction, ROWs, or wildfires that may have altered the visual elements of line, form, color, and texture within the CESA. There are no specific data that quantify impacts to visual resources from grazing, ROWs, or roads. Impacts to visual resources from the past and present activities are dependent upon the

four categories of the BLM's VRM program, which allows minimal to major modifications of the landscape. Man-made features tend to be linear or rectangular in character, while natural events such as wildland fires or landslides tend to be patchy in character.

Two recent wildland fires, the 2001 Mile Marker 267 fire and the 2007 Independence Valley fire, have burned in the Visual Resources CESA. No approved, closed or expired mineral exploration and mining Notices or Plans other than those associated with the Project have been reported on LR2000. Approximately 2,877 acres of ROWs were issued within the Visual Resources CESA have the potential to affect lines and unnatural forms and textures. Approximately 33 miles of historic race routes are present within the Visual Resources CESA which may have added to additional lines to the viewshed.

Reasonably Foreseeable Future Actions: Potential impacts to visual resources from road construction and maintenance, ROWs, minerals activities, and potential wildland fires could occur. There are no specific data on the potential impacts to visual resources from, ROWs, or roads. No additional pending ROWs or other proposed mineral exploration or mining activities were noted in the Visual Resources CESA.

Cumulative Impacts: The visual resources in the Project Area are consistent with BLM prescribed Visual Resource Inventory Class IV objectives. The objective of Class IV is to provide for managing activities that require major modification of the existing character of the landscape. The change to the characteristic landscape can be high. Visual Impacts in the Project Area have been minimized to the extent possible and have resulted in minimal changes to the landscape. Most of the activities are concealed by trees. Upon completion of rehabilitation and reclamation, long term visual impacts would be minimized; therefore, impacts to visual resources from the Proposed Action in combination with the past and present actions and RFFAs would be minimal.

3.4.14 Water Resources

The CESA for Water Resources includes the immediate watersheds, which encompasses 84,692 acres and is shown on Figure 3.4.1.

Past and Present Actions: Past actions that could impact water resources include minerals activities, ranching operations including grazing and irrigation from wells, water use by the City of West Wendover, ROWs, road construction and maintenance, dispersed recreation, and wildfires that introduced sediment to ephemeral streams or springs or consumed water within the Immediate Watersheds CESA. Impacts from trampling during grazing in wet and flowing ephemeral drainages could result in the compaction and displacement of soil, with subsequent events such as bank erosion or reduced functioning condition of the stream. Increased sedimentation could also occur when vehicles or cattle use stream crossings or remove vegetation from the sides of the streams. Similar impacts could occur from ROWs, road construction and maintenance, and dispersed recreation. Wildfires are most likely to cause erosion if soils are altered chemically to be hydrophobic, or if a heavy rain event occurs following a fire. There are no specific data that quantify the amount of sedimentation.

A total of 144.93 acres has been disturbed by past and present mineral activities within the CESA and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (199.86 acres or 0.24 percent of the CESA). There are

no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed and some areas have naturally revegetated over time. Approximately 9,036 acres of ROWs were issued within the Immediate Watersheds CESA and have the potential to create surface disturbance and cause increased sedimentation. A Christmas Tree Cutting Area and NDOW Hunt Unit 078 are also located within the CESA which have the potential to create surface disturbance and associated off road vehicular traffic and impact vegetation. The majority of the HUC5 Watersheds CESA is located within the Big Springs Grazing Allotment and livestock grazing and associated management can impact vegetation. In addition, approximately 93 miles of historic race routes are present within the HUC5 Watersheds CESA.

Reasonably Foreseeable Future Actions: Potential impacts to water could result from minerals activities, ranching operations including grazing and irrigation from wells, water use by the City of West Wendover, ROWs, road construction and maintenance, railroad maintenance, wildland fires, and dispersed recreation that could introduce sediment to ephemeral streams or springs or consume water within the Immediate Watersheds CESA. There are no specific data on the amount of sedimentation or water use that could result from these activities. Impacts from RFFAs would be similar to those described for past and present actions.

Disturbance to vegetation and soils and water consumption from past and present actions has impacted water resources. However, less than 10.8 percent of the CESA has been disturbed and some of the disturbance has been reclaimed, seeded, or otherwise revegetated, which would decrease the impacts from sedimentation. In addition, all RFFAs would require BMPs or other mitigation for the protection of water resources.

The Proposed Action would obtain water at a water well located in Section 20, T32N, R65E (Permit Number 62041). No impacts are expected to ground water; therefore, the incremental impacts to water resources as a result of the Proposed Action when added to the past and present actions and RFFAs would be minimal.

3.4.15 Wildlife

The CESA for small mammal wildlife is the HUC5 Watersheds, which includes 404,215 acres and is shown on Figure 3.4.1. The CESA for big game wildlife is the Mule Deer CESA, which includes 723,871 acres, is shown on Figures 3.4.4 and 3.4.5. In addition, an antelope use area is depicted on Figure 3.4.4.

Small Mammals

Past and Present Actions: Past actions that could impact small mammal wildlife include mineral exploration, ranching operations (grazing), road construction or maintenance, or dispersed recreation that impacted water resources or reduced wildlife habitat in the CESA.

Historic fires between 1981 and 2009 have burned approximately 7,269 acres in the HUC5 Watersheds CESA (1.8 percent of the CESA). Approved, closed or expired mineral exploration and mining Notices or Plans total 144.93 acres in the HUC5 Watersheds CESA and an additional 54.93 acres of surface disturbance associated with the Long Canyon project on private land are also authorized (199.86 acres or 0.05 percent of the CESA). There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to

assume that some areas have been reclaimed and some areas have naturally revegetated over time. A total of 14,665 acres of ROWs were issued within the HUC5 Watersheds CESA that has the potential to create surface disturbance and habitat fragmentation and degradation for wildlife species. Approximately 272 miles of historic race routes are present within HUC5 Watersheds CESAs. A Christmas Tree Cutting Area and NDOW Hunt Unit 078 are located within the HUC5 Watersheds CESA. Activities associated with these management units have the potential to create noise and disturbance to wildlife species and remove or alter habitat. The majority of the HUC5 Watersheds CESA is located within the Big Springs Grazing Allotment and livestock grazing and associated management contributes to the spread of invasive species and change vegetation structure which can have an indirect effect on wildlife species.

Reasonably Foreseeable Future Actions: Potential impacts to wildlife could occur from grazing, dispersed recreation, roads, ROWs, minerals activities or loss of wildlife habitat associated with future wildland fires. There are no specific data on the potential impacts that would result to small mammal wildlife as a result of dispersed recreation, grazing, or future wildfires.

The Expanded Long Canyon Project operations area is located within the HUC5 Watersheds CESA (6,752 acres) and has proposed an additional 69.43 acres of surface disturbance. Approximately 15.1 miles of the proposed SWIP corridor is located within the HUC5 Watersheds CESA. No quantifiable impacts pertaining to vegetation from the SWIP are available at this time. These projects would result in modification to wildlife habitat, but are likely to incorporate wildlife protection measures and habitat restoration measures during and following construction to reduce impacts to wildlife. No additional pending ROWs or other proposed mineral exploration or mining activities were noted in the HUC5 Watersheds CESA.

Big Game

Past and Present Actions: Past actions that could impact mule deer include mineral exploration, ranching operations (grazing), road construction or maintenance, fence building, or dispersed recreation that impacted water resources or reduced wildlife habitat. There are no specific data that quantify habitat loss from grazing or recreation. However, there are 25 BLM-administered grazing allotments that are within or overlap the Deer CESA. In addition, construction of ROWs and fences may have led to fragmentation of wildlife habitat as well as impacts to vegetation and soils leading to soil erosion and the increased potential for the introduction of invasive, nonnative species. Construction and use of the railroads and roads have created an ignition source for wildland fires, facilitated the introduction and proliferation of invasive, nonnative species, and impacted the deer herd by creating obstacles within the migration corridor leading to mortality (such as vehicle-related deaths).

Historic fires between 1981 and 2009 have burned approximately 150,601 acres within the Mule Deer CESA. Approved, closed or expired mineral exploration and mining Notices or Plans total 276.04 acres in the Mule Deer CESA (0.03 percent of the CESA). There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed and some areas have naturally revegetated over time. A total of 23,596 acres of ROWs were issued within the Mule Deer CESA have the potential to create surface disturbance and habitat fragmentation and degradation for big game species. Approximately 95 miles of historic race routes are present within Mule Deer CESA. Approximately 69,813 acres of the Christmas Tree Cutting Area is located within the Mule Deer CESA, which has the potential to create noise and disturbance to big game species

and remove or alter habitat. The Pequop Conservancy has erected approximately 17 miles of fencing within the winter range of the Mule Deer CESA which may preclude young big game animals from entering NDOW Hunt Unit 078 and has the potential to funnel the migrating big game into particular zones along the I-80.

According to data provided by the NDOW and received from the NDOT, approximately 95 deer were killed by vehicles (out of 86 total animal-related incidents) on US 93 between milepost 373 on the Pequop Summit and Mile Post 95 in the period from October 2006 to June 2010 (personal communication, Katie Miller and Kari Huebner, Biologist, NDOW, June 29, 2010).

Reasonably Foreseeable Future Actions: Potential impacts to mule deer could occur from grazing, dispersed recreation, roads, ROWs, minerals activities or loss of native vegetation associated with potential wildland fires. There are no specific data on the potential impacts that would result to wildlife as a result of dispersed recreation, grazing, or potential wildfires.

The SWIP corridor crosses a small portion, approximately 3.9 miles, of the migration corridor area within the Mule Deer CESA. Two pending Road ROWs totaling approximately 75.52 acres and one pending telephone ROW for 101.92 acres are located within the Mule Deer CESA.

In the Deer Summer Range (located primarily on NFS Lands), Atna Resources, Inc. has proposed continued mineral exploration within the Jarbidge Exploration area located approximately 60 miles northwest of Wells, Nevada, in the vicinity of the town of Jarbidge. The proposed project would disturb a maximum of 27.8 acres in phases over a five-year period and include disturbance from drill sites, sumps, constructed roads, and reopened reclaimed roads. The activities proposed in the Deer Summer Range are not tracked on the LR2000; therefore, the total proposed disturbance is based on the aforementioned numbers and could total approximately 27.8 acres. One pending Plan of Operations has been submitted by All Mineral Corp. for mineral exploration and would disturb a maximum of 140 acres. This project falls within the Mule Deer CESA. In addition, two pending Notices totaling 4.86 acres of proposed disturbance for mineral exploration are located within the Mule Deer CESA.

Cumulative Impacts: Impacts to wildlife (small mammals and big game) from the Proposed Action would be limited to the removal of vegetation, destruction of habitat (up to 300 acres), noise associated with exploration, and vehicular collisions. The Proposed Action would affect approximately 0.07 percent of the CESA for small mammals and less than 0.04 percent of the CESA for big game. Based on the above analysis and findings, incremental impacts to wildlife species (both small mammals and big game) as a result of the Proposed Action when added to the past and present actions and RFFAs are expected to be minimal.

3.5 Mitigation and Monitoring

The Environmental Protection Measures described in the Proposed Action (Section 2.2.13) are sufficient for this action and no specific mitigation measures are necessary. The BLM would conduct monitoring on an as-needed basis to ensure the Project is implemented as authorized.

4 CONSULTATION AND COORDINATION

The Plan was made available to the public on June 1, 2010, and comments were requested by July 1, 2010. Coordination with Native Americans is ongoing. The Nevada Department of Wildlife participated in preparation of this EA. This EA will be available from the Elko District public webpage at www.blm.gov/nv prior to issuance of a decision concerning the Proposed Action.

4.1 Persons, Groups, and Agencies Consulted

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4.2 List of Preparers

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APPENDIX A

SOILS IN THE WEST PEQUOP EXPLORATION PROJECT AREA

APPENDIX A
Soils in the West Pequop Exploration Project Area

Association (Percentage of Project Area)	Soils Series	Range in Depth to Bedrock	Profile Soil Texture	Permeability	Runoff	Erosion Hazard by Water	Erosion Hazard by Wind
Zimbob Tecomar- Pookaloo Association (2.8%)	Zimbob	10 to 14 inches	Very gravelly loam	Moderate	Moderate	Low to moderate	Low to moderate
	Tecomar	10 to 20 inches	Extremely gravelly loam to extremely cobble silt loam	Moderate	Moderate to high	Low to moderate	Low to moderate
	Pookaloo	14 to 20 inches	Very gravelly loam	Moderate	Moderate to very high	Low	Moderate
Urmafot- Bobs- Urmafot, eroded Association (1.0%)	Urmafot	9 to 20 inches to duripan	Gravelly loam to extremely gravelly coarse sandy loam	Moderate	Moderate	Low to moderate	Low to moderate
	Bobs	10 to 20 inches to petrocalcic	Gravelly loam to gravelly silt loam	Moderate	Moderate	Low to moderate	Low to moderate
Pookaloo- Cavehill- Rock Outcrop Association (23.0%)	Pookaloo	14 to 20 inches	Very gravelly loam	Moderate	Moderate to very high	Low	Moderate
	Cavehill	20 to 40 inches	Very gravelly silty loam	Moderate	High	Low	Moderate
Hutchley- Simon Association (0.3%)	Hutchley	10 to 20 inches	Very gravelly to gravelly clay loam	Moderate	Moderate	Low	Low to moderate
	Simon	More than 80 inches	Loam, gravelly to cobble clay loam	Moderate	Slow	Low	Low to moderate
Hardzem- Haunchee- Wardbay Association (3.0%)	Hardzem	20 to 40 inches	Very stony to very channery loam	Moderate	Moderate	Low	Low to moderate
	Haunchee	10 to 20 inches	Very gravelly loam	Moderate	Moderate to very high	Moderate	Low to moderate
	Wardbay	40 to 60 inches	Loam to silty loam, very gravelly to extremely cobble	Moderate	High	Moderate	Low to moderate
Haunchee- Halacan- Wardbay Association (68.3%)	Haunchee	10 to 20 inches	Very gravelly loam	Moderate	Moderate to very high	Moderate	Low to moderate
	Halacan	10 to 20 inches	Loam, very gravelly to extremely channery	Moderate to high	Very high	Moderate	Low to moderate
	Wardbay	40 to 60 inches	Loam to silty loam, very gravelly to extremely cobble	Moderate	High	Moderate	Low to moderate
Haunchee- Cavehill Association (1.7%)	Haunchee	11 to 15 inches	Cobbly to gravelly loam	Moderate	Moderate to very high	Moderate	Low to moderate
	Cavehill	20 to 40 inches	Cobbly to gravelly loam	Moderate	High	Low	Moderate

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