

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

---

**Environmental Assessment  
NDOW Bluebell and Goshute Peak Water Project**



**Erickson Spring, 2012**

**PREPARING OFFICE**

U.S. Department of the Interior  
Bureau of Land Management  
3900 E. Idaho St.  
Elko, NV 89815 USA  
(775) 753-0200





# **Environmental Assessment**

## **NDOW Bluebell and Goshute Peak Water Project**

**Prepared by**  
**U.S. Department of the Interior**  
**Bureau of Land Management**  
**Elko District, Wells Field Office**  
**Elko, Nevada**

This page intentionally  
left blank

# Table of Contents

<b>Acronyms and Abbreviations .....</b>	<b>1</b>
<b>1. Introduction .....</b>	<b>5</b>
1.1. Purpose and Need for Action: .....	8
1.2. Conformance with Applicable Policies and Plans .....	8
1.3. Notice of Action .....	10
<b>2. Proposed Action and Alternatives .....</b>	<b>11</b>
2.1. Proposed Action: .....	13
2.1.1. Spring Diversion and Maintenance .....	13
2.1.2. Guzzlers .....	18
2.1.3. Access to Spring Developments and Water Catchments .....	20
2.1.4. Environmental Protection Measures .....	21
2.1.5. Monitoring .....	25
2.2. Alternative 2 .....	25
2.3. No Action Alternative .....	25
2.4. Alternatives Considered but Eliminated From Detailed Analysis .....	25
<b>3. Affected Environment and Environmental Consequences .....</b>	<b>27</b>
3.1. Analysis of Affected Resources .....	33
3.1.1. Cultural Resources .....	33
3.1.1.1. Affected Environment .....	33
3.1.1.2. Environmental Consequences of the Proposed Action .....	34
3.1.1.3. Environmental Consequences of Alternative 2 .....	34
3.1.1.4. Environmental Consequences of the No Action Alternative .....	35
3.1.2. Native American Concerns .....	35
3.1.2.1. Affected Environment .....	35
3.1.2.2. Environmental Consequences of the Proposed Action .....	35
3.1.2.3. Environmental Consequences of Alternative 2 .....	36
3.1.2.4. Environmental Consequences of the No Action Alternative .....	36
3.1.3. Migratory Birds .....	36
3.1.3.1. Affected Environment .....	36
3.1.3.2. Environmental Consequences of the Proposed Action .....	37
3.1.3.3. Environmental Consequences of Alternative 2 .....	38
3.1.3.4. Environmental Consequences of the No Action Alternative .....	38
3.1.4. Non-Native, Invasive and Noxious Species .....	38
3.1.4.1. Affected Environment .....	38
3.1.4.2. Environmental Consequences of the Proposed Action .....	39
3.1.4.3. Environmental Consequences of Alternative 2 .....	39
3.1.4.4. Environmental Consequences of the No Action Alternative .....	39
3.1.5. Hydrology and Riparian Wetland .....	40
3.1.5.1. Affected Environment .....	40

3.1.5.2. Environmental Consequences of the Proposed Action .....	42
3.1.5.3. Environmental Consequences of Alternative 2 .....	42
3.1.5.4. Environmental Consequences of the No Action Alternative .....	43
3.1.6. Visual .....	45
3.1.6.1. Affected Environment .....	45
3.1.6.2. Environmental Consequences of the Proposed Action .....	46
3.1.6.3. Environmental Consequences of Alternative 2 .....	46
3.1.6.4. Environmental Consequences of the No Action Alternative .....	46
3.1.7. Recreation .....	46
3.1.7.1. Affected Environment .....	46
3.1.7.2. Environmental Consequences of the Proposed Action .....	47
3.1.7.3. Environmental Consequences of Alternative 2 .....	47
3.1.7.4. Environmental Consequences of the No Action Alternative .....	47
3.1.8. Special Status Species .....	47
3.1.8.1. Affected Environment .....	47
3.1.8.2. Environmental Consequences of the Proposed Action .....	52
3.1.8.3. Environmental Consequences of Alternative 2 .....	52
3.1.8.4. Environmental Consequences of the No Action Alternative .....	53
3.1.9. Vegetation and Soils .....	53
3.1.9.1. Affected Environment .....	53
3.1.9.2. Environmental Consequences of the Proposed Action .....	55
3.1.9.3. Environmental Consequences of Alternative 2 .....	55
3.1.9.4. Environmental Consequences of the No Action Alternative .....	55
3.1.10. Wildlife .....	56
3.1.10.1. Affected Environment .....	56
3.1.10.2. Environmental Consequences of the Proposed Action .....	57
3.1.10.3. Environmental Consequences of Alternative 2 .....	58
3.1.10.4. Environmental Consequences of the No Action Alternative .....	58
3.1.11. Wild Horses .....	59
3.1.11.1. Affected Environment .....	59
3.1.11.2. Environmental Consequences of the Proposed Action .....	60
3.1.11.3. Environmental Consequences of Alternative 2 .....	61
3.1.11.4. Environmental Consequences of the No Action Alternative .....	61
3.1.12. Wilderness and Wilderness Study Areas .....	61
3.1.12.1. Affected Environment .....	61
3.1.12.2. Environmental Consequences of the Proposed Action .....	62
3.1.12.3. Environmental Consequences of Alternative 2 .....	62
3.1.12.4. Environmental Consequences of the No Action Alternative .....	63
3.1.13. Common to all Alternatives and Resources .....	63
3.2. Cumulative Impacts .....	64
3.2.1. Past, Present, and Reasonably Foreseeable Future Actions .....	71
3.3. Evaluation of Potential Cumulative Impacts .....	72
3.3.1. Wildlife Resources, Including Migratory Birds .....	72
3.3.1.1. Wildlife Resources, Including Migratory Birds CESA Boundary .....	72
3.3.1.2. Past and Present Actions .....	72
3.3.1.3. Reasonably Foreseeable Future Actions .....	73
3.3.1.4. Cumulative Impacts .....	73
3.3.2. Special Status Species (Greater Sage-Grouse) .....	74
3.3.2.1. Special Status Species (Greater Sage-Grouse) CESA Boundary .....	74

3.3.2.2. Past and Present Actions .....	74
3.3.2.3. Reasonably Foreseeable Future Actions .....	74
3.3.2.4. Cumulative Impacts .....	74
3.3.3. Non-Native Invasive and Noxious Species .....	75
3.3.3.1. Non-Native Invasive and Noxious Species CESA Boundary .....	75
3.3.3.2. Past and Present Actions .....	75
3.3.3.3. Reasonably Foreseeable Future Actions .....	76
3.3.3.4. Cumulative Impacts .....	76
3.3.4. Hydrology and Riparian Wetland .....	77
3.3.4.1. Hydrology and Riparian Wetland CESA Boundary .....	77
3.3.4.2. Past and Present Actions .....	77
3.3.4.3. Reasonably Foreseeable Future Actions .....	77
3.3.4.4. Cumulative Impacts .....	78
3.3.5. Visual .....	79
3.3.5.1. Visual CESA Boundary .....	79
3.3.5.2. Past and Present Actions .....	79
3.3.5.3. Reasonably Foreseeable Future Actions .....	79
3.3.5.4. Cumulative Impacts .....	79
3.3.6. Vegetation and Soils .....	80
3.3.6.1. Vegetation and Soils CESA Boundary .....	80
3.3.6.2. Past and Present Actions .....	80
3.3.6.3. Reasonably Foreseeable Future Actions .....	81
3.3.6.4. Cumulative Impacts .....	81
3.3.7. Wilderness, Wilderness Study Areas and Recreation .....	82
3.3.7.1. Wilderness and Wilderness Study Areas CESA Boundary .....	82
3.3.7.2. Past and Present Actions .....	82
3.3.7.3. Reasonably Foreseeable Future Actions .....	82
3.3.7.4. Cumulative Impacts .....	83
3.3.8. Mule Deer .....	83
3.3.8.1. Mule Deer CESA Boundary .....	83
3.3.8.2. Past and Present Actions .....	83
3.3.8.3. Reasonably Foreseeable Future Actions .....	84
3.3.8.4. Cumulative Impacts .....	84
3.3.9. Elk .....	85
3.3.9.1. Elk CESA Boundary .....	85
3.3.9.2. Past and Present Actions .....	85
3.3.9.3. Reasonably Foreseeable Future Actions .....	85
3.3.9.4. Cumulative Impacts .....	86
3.3.10. Antelope .....	87
3.3.10.1. Antelope CESA Boundary .....	87
3.3.10.2. Past and Present Actions .....	87
3.3.10.3. Reasonably Foreseeable Future Actions .....	87
3.3.10.4. Cumulative Impacts .....	87
3.3.11. Wild Horses .....	88
3.3.11.1. Wild Horse CESA Boundary .....	88
3.3.11.2. Past and Present Actions .....	88
3.3.11.3. Reasonably Foreseeable Future Actions .....	89
3.3.11.4. Cumulative Impacts .....	89

<b>4. List of Preparers, Consultation and Coordination .....</b>	<b>91</b>
4.1. List of Preparers .....	93
4.2. Persons, Groups or Agencies Consulted .....	93
4.3. Public Notice and Availability .....	94
<b>5. References .....</b>	<b>95</b>

**List of Tables**

Table 2.1. Proposed Action Maintenance Locations and Associated Disturbance .....	13
Table 2.2. Existing Water Sources With Potential for Improvement Within the Bluebell and Goshutes Peak WSAs .....	26
Table 3.1. Supplemental Authorities .....	29
Table 3.2. Resources or Uses Other than Supplemental Authorities .....	31
Table 3.3. Spring and Riparian Area Information .....	41
Table 3.4. Special Status Species that May Be Present in the Project Area .....	49
Table 3.5. Raptors That May Be Present in the Project Area .....	50
Table 3.6. Vegetation Communities in the Project Area .....	53
Table 3.7. Appropriate Management Level for the Goshute HMA .....	60
Table 3.8. Cumulative Effects Study Areas .....	65
Table 3.9. Past, Present, and Reasonably Foreseeable Future Actions for the Bluebell and Goshute Peak Water Project Cumulative Effects Study Areas .....	66

This page intentionally  
left blank

# Acronyms and Abbreviations

**°F:**

Degrees Fahrenheit

**AML:**

Appropriate Management Level

**AMSL:**

Above Mean Sea Level

**APE:**

Area of Potential Effect

**AUM:**

Animal Unit Month

**BLM:**

Bureau of Land Management

**BMP:**

Best Management Practice

**CESA:**

Cumulative Effects Study Area

**CFR:**

Code of Federal Regulation

**EA:**

Environmental Assessment

**EIS:**

Environmental Impact Statement

**EPM:**

Environmental Protection Measure

**ESA:**

Endangered Species Act

**FARD:**

Functional at Risk with Downward Trend

**FARN:**

Functional at Risk with No Apparent Trend

**FLPMA:**

Federal Land Policy and Management Act of

**FMUD:**

Final Multiple Use Decision

**GBBO:**

Great Basin Bird Observatory

**LR2000:**

BLM Land and Mineral Rehost 2000 System

**MBTA:**

Migratory Bird Treaty Act

**MOU:**

Memorandum of Understanding

**NAC:**

Nevada Administrative Code

**NDOW:**

Nevada Department of Wildlife

**NEPA:**

National Environmental Policy Act of 1969

**NF:**

Non-Functional

**NHPA:**

National Historic Preservation Act

**NNHP:**

Nevada Natural Heritage Program

**NRHP:**

NRHP National Register of Historic Places

**PFC:**

Proper Functioning Condition

**PGH:**

Preliminary General Habitat

**PMU:**

Population Management Unit

**PPH:**

Preliminary Priority Habitat

**RFFA:**

Reasonably Foreseeable Future Action

**ROW:**

Right-of-Way

**SSEIS:**

Sensitive Species Environmental Impact Statement

**SWRGAP:**

Southwest Regional Gap Analysis Project

**USFWS:**

United States Fish and Wildlife Service

**VRM:**

Visual Resource Management

**WFRHBA:**

Wild Free-Roaming Horse and Burro Act of 1971

**WSA:**

Wilderness Study Area

**WWP:**

Western Watersheds Project

This page intentionally  
left blank

# **Chapter 1. Introduction**

This page intentionally  
left blank

The United States Bureau of Land Management (BLM) and the Nevada Department of Wildlife (NDOW) are proposing to take action to mitigate negative impacts to several natural springs and riparian areas occurring within the Bluebell and Goshute Peak Wilderness Study Areas (WSAs). The proposed project is located on public lands administered by the BLM Wells Field Office, approximately 15 miles southwest of Wendover, Nevada (Figure 1).

The legal description for the project area is Township 29 North, Ranges 67 East, 68 East and 69 East; Township 30 North, Ranges 67 East, 68 East and 69 East; Township 31 North, Ranges 67 East, 68 East and 69 East; Township 32 North, Ranges 67 East, 68 East and 69 East; Township 33 North, Ranges 67 East, 68 East and 69 East; and Township 34 North, Ranges 67 East, 68 East and 69 East Mount Diablo Base and Meridian; in Elko County, Nevada.

BLM and NDOW are concerned that effects from heavy wild horse use identified in this Environmental Assessment (EA) to spring sources and riparian areas are negatively impacting the diversity and abundance of wildlife within the Goshute Mountain area. BLM and NDOW have formulated the Proposed Action to increase riparian functionality thereby improving wildlife habitat.

In 2010, NDOW biologists and a BLM specialist conducted a seep and spring inventory within the WSAs to determine the adequacy of perennial water sources for wildlife (throughout this document the term "wildlife" does not include wild horses) values. During the survey, NDOW and BLM observed several springs, many of which were negatively impacted by wild horses. Heavy use was noted on Rock Spring, Tunnel Spring, Morgan Spring, Erickson Spring, and Sidehill Spring. The 2010 inventories reaffirmed monitoring data that had been collected in previous years that wild horses were causing negative impacts to springs in the Goshute and Toano ranges.

BLM and NDOW are concerned that impacts to spring sources and riparian areas are negatively impacting the diversity and abundance of wildlife within the Goshute Mountain area. BLM and NDOW have formulated the Proposed Action to increase riparian functionality thereby improving wildlife habitat.

Letters were sent to interested wilderness groups within the region notifying them of the project through the Notification of Proposed Action on September 13, 2010. Groups within the area voiced their support for the Proposed Action citing that the longer term benefits to wildlife would outweigh the minor visual impacts created by these projects being located within the WSA. The health and vitality of the general wildlife population within the Goshute Peak and Bluebell WSAs, especially to high profile species such as mule deer (*Odocoileus hemionus*), Rocky Mountain elk (*Cervus canadensis*), and Rocky Mountain bighorn sheep (*Ovis canadensis* ssp. *canadensis*) are discussed in Section 3.1.10, "Wildlife" (p. 56). Water developments within the WSAs would also serve to benefit wildlife species of concern such as greater sage-grouse (*Centrocercus urophasianus*), pygmy rabbit (*Brachylagus idahoensis*), and others thereby enhancing the naturalness of the area, which is a key factor in determining wilderness classification (Wilderness Act of 1964, (16 U.S.C. 1131 et seq.)). On March 13, 2013, a scoping letter was mailed to the interested public. Two comments letters were received: one in support of the proposed project and the other comment was outside the scope of the proposed project.

This EA was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and in compliance with applicable regulations and laws passed subsequently, including the President's Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] parts 1500-1509), United States Department of Interior requirements, and guidelines listed in the BLM NEPA Handbook H-1790-1 (BLM, 2008a).

## 1.1. Purpose and Need for Action:

The purpose of the action is to provide a reliable source of water for wildlife, including big game species such as mule deer, Rocky Mountain elk, pronghorn antelope (*Antilocapra americana*), and other wildlife species by maintaining previously developed spring sources and enhancing water access. The need for action arises from the 2010 inventories showing negative impacts wild horses are having on seeps and springs in the Goshute and Toano ranges, resulting in water being a limiting factor for wildlife habitat. Installation of reliable water sources would aid in the distribution of wildlife across the WSAs, thereby improving wildlife habitat within the WSAs. In addition the installation of guzzlers would replace water sources that have been lost due to human influence.

As required by the NEPA, this EA will describe the components of, and the environmental consequences of establishment of the project(s).

## 1.2. Conformance with Applicable Policies and Plans

The Proposed Action is in conformance with the following plans and policies.

- Wells Resource Management Plan Record of Decision (BLM, 1987a) and the Wells Wilderness Recommendations Final Environmental Impact Statement (BLM, 1987b).
- Section 603(c) of the Federal Land Policy and Management Act of 1976 (FLPMA) provides direction to the BLM on the management of WSAs and states that with some exceptions "during the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness." This language is referred to as the "non-impairment" mandate. The BLM developed a non-impairment standard to meet this mandate. The BLM will review all proposals for uses and/or facilities within WSAs to ascertain whether the proposal would impair the suitability of the WSA for preservation of wilderness.
- The BLM Manual 6330 – Management of Wilderness Study Areas (BLM, 2012) provides guidelines to determine what activities can occur within WSAs. Wilderness preservation is part of the BLM's multiple-use mandate, and the wilderness resource is recognized as one of the array of resource values considered in the land-use planning process. It is stated in BLM Manual 6330, Section 1.6.C.2, Exceptions to non-impairment the seven classes of allowable exceptions to the non-impairment standard; the relevant classes are summarized below:
  - e. Grandfathered uses: Grazing, mining, and mineral leasing uses and facilities that were allowed on the date of approval of FLPMA or the designation date for Section 202 WSAs was not reported to Congress, are grandfathered. Grandfathered means "allowed as a preexisting use."
  - f. Protect or enhance wilderness characteristics or values: Actions that clearly benefit a WSA by protection of enhancing these characteristics are allowable even if they are impairing, though they must still be carried out in the manner that is least disturbing to the site.

g. Other legal requirements. Activities required to meet obligations imposed by other laws are allowed even though they may violate the non-impairment standard and should be carried out in the least impairing manner practicable. Many of these legal requirements are cited in Section 1.6.D, Policies for Specific Activities.

The relevant portions of Section 1.6.D.11, Wildlife are quoted below:

a. Coordination between the BLM and state agencies. Congress directed the Secretary, through the BLM, to manage WSAs "in a manner so as not to impair the suitability of such areas for preservation as wilderness." However, effective management of WSAs requires close coordination and communication between the BLM and State wildlife management agencies. "In general the States possess broad trustee and police powers over fish and wildlife within their borders, including fish and wildlife found on Federal lands within a State." (43 CFR 24.3). Management actions taken to support wildlife management, whether proposed by the State or the BLM, must conform to the non-impairment mandate, as detailed in 1.6.C of this manual.

To facilitate BLM/State coordination, each BLM State Office should maintain effective communication and coordination with their State wildlife management agency counterparts. The BLM should seek to establish MOUs with the relevant state wildlife agencies to identify any state-specific management activities, policies, and/or procedures that may involve WSAs and to determine under what conditions State fish and wildlife activities will be conducted in WSAs. Such MOUs, as well as fish and wildlife management actions undertaken by the BLM and not involving the State agency, will include the provisions described in the following sub-sections. For all actions, the BLM will ensure that the non-impairment criteria are met, or that one of the exceptions to non-impairment applies. (See Section 1.6.C of this manual.) It is the expectation that the BLM will work closely with the state agency in consideration of all project proposals involving WSAs. When a project is under consideration BLM will conduct a non-impairment analysis and assist state agencies in designing the project to conform to the non-impairment standard. Projects will be subject to NEPA analysis as appropriate.

States regulate where and when the activities of hunting, fishing, and trapping take place in WSAs. Hunting, fishing, and trapping are normally unaffected by WSA designation. The BLM is responsible for managing the habitat upon which these fish and wildlife are dependent. In WSAs, the BLM has an additional responsibility to assure that management techniques and tools do not cause impairment to wilderness characteristics and that fish and wildlife management activities emphasize the continuation of natural processes to the greatest extent possible.

c. Permanent structures and installations. Permanent facilities used in wildlife management include guzzlers, water tanks, and enclosure fences. These structures or installations are considered either "existing" or "new."

ii. New permanent structures and installations include not only proposed facilities, but those that were built after the dates described in c.i, immediately above. New facilities are normally not permitted in WSAs under the non-impairment criteria, but may be allowed to be constructed (or remain) if the facility meets an exception to the non-impairment criteria.

For example, facilities that clearly protect or enhance wilderness characteristics by supporting a natural distribution, number, and interaction of native species within the WSA may be allowed. Permanent wildlife facilities that meet this exception should be limited to:

A. Structures or installations built for the benefit of threatened, endangered, or candidate species if they are determined essential to species conservation and recovery; or

B. Structures or facilities built to restore or compensate for habitat that was lost or deteriorated from modern human influence.

iv. At a minimum, the EA or EIS for any proposed new guzzler or other water capture and delivery structure or installation must address the following:

- the number and locations of historic natural water sources within the WSA,
- the reasons these historic natural water sources have been lost or are not available to the native species,
- why the native species within the WSA are unable to sustain a natural distribution, number, and interaction through natural processes or to maintain a natural balance with their habitat due to the loss of historic natural water sources, and
- why the construction of guzzlers is a more desirable alternative than restoration of historic natural water sources.

### **1.3. Notice of Action**

Notice of Action 6300 (NV-013) NV-010-033 & 027 was submitted by NDOW for review under BLM Manual 6330 – Management of Wilderness Study Areas. The notification period was from January 10, 2011 to February 11, 2011. The Notice of Review was submitted to inform the public about the riparian area degradation occurring and to propose an action on behalf of the BLM. The Notice of Action also identified that the means by which the Proposed Action would be carried out would be identified within the authorizing document (this EA).

# **Chapter 2. Proposed Action and Alternatives**

This page intentionally  
left blank

## 2.1. Proposed Action:

The Proposed Action is to maintain troughs and other grandfathered water developments, and install exclosures at Tunnel Spring, Rock Spring, Erickson Spring, Sidehill Spring, Morgan Spring, and Warburton Seep within the Bluebell WSA and construct two water catchments (guzzlers) within the Goshute Peak WSA. Table 2.1, “Proposed Action Maintenance Locations and Associated Disturbance” (p. 13) presents the locations of spring and guzzler areas, and the disturbance associated with each part of the Proposed Action; see also Figure 2. Photographs of the existing condition of the springs and seep are included in Section 3.1.5, “Hydrology and Riparian Wetland” (p. 40).

**Table 2.1. Proposed Action Maintenance Locations and Associated Disturbance**

Site	Action	Legal Site Description	Proposed Disturbance (acres)
Tunnel Spring	Fence installation, one trough removal and replacement	SE ¼ Section 28 and SW ¼ Section 27, T34N, R68E	0.005
Rock Spring	Fence installation, one trough removal and replacement, replace diversion	SE ¼ Section 10, T33N, S68E	0.004
Erickson Spring	Fence installation, three trough removals	NW ¼ Section 2, T32N, S68E SW ¼ Section 35, T33N, R68E	0.008
Sidehill Spring	Fence, pipeline, new water diversion, and trough installation	SW ¼ Section 14, T32N, R68E	0.016
Morgan Spring	Fence installation, one trough removal	SE ¼ Section 15, T32N, R68E	0.012
Warburton Seep	Fence installation	NE ¼ Section 14, T32N, R68E	0.036
Guzzler 1	Guzzler construction	NW ¼ Section 28, T31N, R68E	<0.25
Guzzler 2	Guzzler construction	NW ¼ Section 5, T31N, R68E	<0.25
Total			<0.59 acres

### 2.1.1. Spring Diversion and Maintenance

Proposed maintenance would consist of installing, repairing, or replacing water diversions and/or troughs and constructing temporary pipe rail fences around each associated site Table 2.1, “Proposed Action Maintenance Locations and Associated Disturbance” (p. 13). Work around the springs is anticipated to take between one and three days per spring site. Section 2.1.4, “Environmental Protection Measures” (p. 21) discusses environmental protection measures (EPMs). A qualified, interdisciplinary team reviewed each spring site and made determinations of fence exclosure sizes to adequately protect riparian values. Maintenance of troughs and fences would be the responsibility of the BLM and NDOW. Each temporary fence unit would be constructed under the follow specifications:

- Wildlife-friendly pipe rail fences would be used at each site (Photo 1 and Photo 2);
- Braces and corner posts would be installed up to three feet in the ground depending on soil condition; and
- Each post would be approximately 78 inches in length with 34 inches below ground surface.

After reviewing the water flow characteristics at each of the spring sites, Proper Functioning Condition (PFC) Assessments Section 3.1.5, “Hydrology and Riparian Wetland” (p. 40) were completed. It was determined that springs in similar condition prior to being enclosed by fencing had the potential to produce riparian vegetation and to recover to a PFC.

For some springs within the Proposed Action, the replacement of dilapidated and dysfunctional existing troughs was deemed necessary to maintain wilderness values, more specifically, to protect water sources from degradation and provide water outside of the enclosures for wildlife and wild horses. For other sites, troughs would be removed and not replaced because spring flow characteristics would provide adequate water outside the enclosure or because trough location inhibited the natural proper function of the system (i.e. trough is located in stream channel). For sites in which water-piping is part of the Proposed Action, maintenance of that piping is anticipated to be extremely low because it would be buried below the frost line. Initial emplacement and maintenance should it be necessary, it would occur within the existing footprint of the pipeline and would be completed with hand tools.

Temporary fences would not be removed until specific criteria would be met. This would include achievement and maintenance of PFC as well as conducting a risk assessment to make a determination of whether riparian health objectives can be maintained into the future. Refer to Manual 6330, Section B, General Policy, 6. Maintain improve conditions. Should BLM make the determination to change the temporary status to permanent this would be allow under Section D, Policies for Specific Activities, 10, Wild Horse and Burro Management, Subsection ii, Fences.

## **Water Diversions and Troughs**

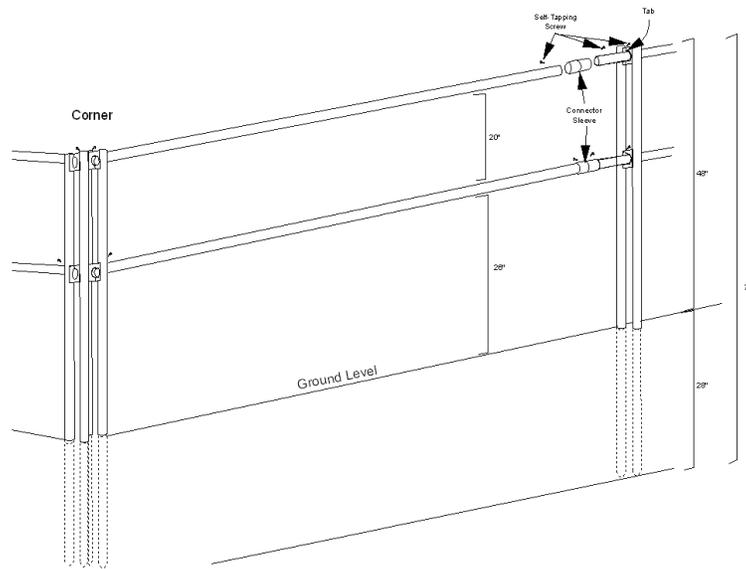
Proposed maintenance or removal of existing “grandfathered” water diversions and troughs would occur under the Proposed Action for some water sources. Installation of a new diversion and trough would occur at Sidehill Spring. Maintenance of “grandfathered” water diversions and troughs to functioning condition could include removing old or damaged water troughs, tanks, water collection equipment, and pipes and replacing them with equipment meeting current BLM standards as described in the BLM Handbook H-1741-2 — Land Treatments. The EPMs listed in Section 2.1.4, “Environmental Protection Measures” (p. 21) were developed to meet these standards. The handbook describes the criteria for water diversion and trough placement and design necessary to minimize environmental impact and maximize usefulness and durability.

BLM Manual 6330 – Management of Wilderness Study Areas, as discussed in Section 1.2, “Conformance with Applicable Policies and Plans” (p. 8) in this EA, describes “grandfathered” as those range and wildlife improvements that may continue in the same manner and degree as originally designed within WSAs. Maintenance of “grandfathered” livestock developments would be permitted to insure that the usefulness of the project for its intended purposes may be realized. However, the maintenance activity would not be allowed to modify the facility to exceed the physical and visual impacts existing on or before October 21, 1976. Modification exceeding this standard would be evaluated under the non-impairment standard. This would apply to those sites where “new” fences are being proposed. Tunnel Spring, Rock Spring, Morgan Spring, Erickson Spring, and Warburton Seep had troughs present and developed at the time of WSA designation. Therefore, maintenance activities may be conducted under the Management of Wilderness Study Areas manual on these improvements up to the original standard.

Equipment needed to perform the maintenance proposed in riparian areas would include picks, shovels, breaker bars, battery-powered electric drill, post hole diggers, wheelbarrows, T-post

pounders, fencing pliers, trowels for concrete, reciprocating saw, welder, generator, electric jackhammers, and chisels. The installation of the pipeline and trough at Sidehill Spring would be along the area of existing disturbance created by a road and an existing livestock reservoir and would be completed with the use of hand tools. A collection box would be located below the spring so as not to disturb the spring source, with the overflow into the existing reservoir. After installation of the trough and pipeline, the area would be seeded with a native grass and forb mixture to ensure recovery of the area and to minimize the establishment of invasive species.

The following section outlines proposed spring maintenance and development for each site. Section 3.1.5, “Hydrology and Riparian Wetland” (p. 40) further describes the water resources associated with the Bluebell and Goshute Peak WSAs.



**Photo 1 Typical pipe rail fence diagram**



**Photo 2 Typical Pipe rail fence picture**

## Tunnel Spring

The water source known as Tunnel Spring is located within an unnamed ephemeral stream (Photo 5). A private water right application indicates that this source was developed by a private party

prior to 1938 by digging a 25-foot shaft and siphoning water about 200 feet downstream to the existing trough location. Water fills the trough and overflows onto and infiltrates into the ground. Measured flow at the pipe outlet ranges between 0.29 and 1.00 gallons per minute. The ground surface at the water source is dry and expresses no riparian attributes. Vegetation at the source consists of sagebrush (*Artemisia* sp.) and rabbitbrush (*Chrysothamnus* sp.). Surface features indicate that before this development was put in place water was rarely present on the ground surface. Access to the spring is through an existing primitive route on the east side of the Bluebell WSA.

The BLM and NDOW propose to remove the existing trough, install a new trough, and construct a pipe rail fence enclosure. The existing trough would be removed and a new trough would be installed within the existing foot print. The new trough would not include a float valve because this would increase pressure in the pipe and could damage the existing diversion works. An overflow pipe would be installed to carry overflow water away from the trough. Diversion works include any components of the trough (i.e., pipe, collection box, tanks, trough etc.). Some of the existing piping that allows water to flow from the spring to the trough would be repaired if necessary. Approximately 410 feet of pipe rail fencing would be constructed below the overflow of the spring diversion, disturbing 0.005 acres and protecting approximately 0.22 acres and enhancing riparian functionality. The new trough would be located outside the fence making it accessible to wildlife and wild horses.

## Rock Spring

Rock Spring is located on a hillside in Morris Basin (Photo 6). The spring emerges from the ground below a stand of willows (*Salix* sp.) and Woods' rose (*Rosa woodsii*). The ground surrounding the spring is bare of vegetation except for stinging nettle (*Urtica dioica*). Access to the spring is on an existing primitive route that enters the Bluebell WSA from the east and continues up Morris Basin. The road used to access the area ends approximately 600 feet from the site. Supplies would be hand-carried in the remaining distance. Spring flow ranges between 0.5 and 1.5 gallons per minute. A portion of water was diverted and piped into troughs in the early 1900s but that diversion is no longer functioning as such; the water currently flows onto the ground.

The BLM and NDOW propose to remove the existing trough, install a new trough, construct a pipe rail fence enclosure, and replace some or all of the existing water diversion works. The existing trough would be removed and a new trough would be installed in its place, creating no new disturbance. If the existing diversion works are not functioning or fail during trough installation, the water diversion works at the spring source would be replaced, along with piping from the spring to the trough. Approximately 325 feet of pipe rail fencing would be constructed around the spring, disturbing 0.004 acres and protecting approximately 0.12 acres and enhancing riparian functionality. The trough would be located outside the fence making it accessible to wildlife and wild horses.

## Erickson Spring

Erickson Spring is located on a hillside on the north side of Erickson Canyon (Photo 7, Photo 12). The spring was developed in the early 1900s using an underground collection apparatus and all spring flow was diverted into a pipe. Water from the spring currently flows through a pipe, which spills onto the ground and then quickly infiltrates. In wet years, water resurfaces about 100 feet downslope of the spring source. Flows measured at the pipe range from 0.16 to 0.5 gallons per

minute. The ground immediately surrounding the spring is bare of vegetation. The vegetation in the adjacent areas to the spring includes pinyon (*Pinus oostesperma*), Utah juniper (*Juniperus oostesperma*), and big sagebrush (*Artemisia tridentata* ssp.). Access to the spring is on an existing primitive route that enters the Bluebell WSA from the east and continues up Erickson Canyon.

The BLM and NDOW propose to remove three non-functioning troughs and install pipe rail fencing around the spring. Approximately 700 feet of pipe rail fencing would be constructed around the spring disturbing 0.008 acres and protecting approximately 0.64 acres and enhancing riparian functionality. During wet periods, water would be available on the ground surface, downslope of this spring source, for wildlife and wild horses.

## Sidehill Spring

Sidehill Spring is located on a hillside below a rocky outcrop in Morgan Basin (Photo 8). Access to the spring is on an existing primitive route that enters the Bluebell WSA from the east and continues up Morgan Basin. There is no water diversion at the spring source, but there is a reservoir downslope, that is capable of capturing spring flow during wet periods, or ephemeral stream flow from the adjacent drainage. BLM has no record of this reservoir containing water. Flow from the spring ranges between two and 11 gallons per minute. Vegetation surrounding the spring includes Woods' rose and sagebrush. Riparian vegetation at the spring source has been over-utilized; however, potential for recovery of riparian vegetation is present. The area is mostly bare of vegetation but does contain some upland grasses and small patches of herbaceous riparian vegetation.

The BLM and NDOW propose to install water diversion works, a trough, and a pipe rail fencing around the spring source and riparian area. Approximately 1,033 feet of pipe rail fencing would be installed around the spring disturbing 0.016 acres and protecting approximately 1.27 acres and enhancing riparian functionality. A collection apparatus and 287 feet of pipeline would be installed to provide water to the trough. The installation of the pipeline and trough at Sidehill Spring would be along the area of existing disturbance created by a road and an existing livestock reservoir and would be completed with the use of hand tools. The collection apparatus would be located below the spring so as not to disturb the spring source, with the overflow into the existing reservoir. The trough would be located outside of the fence so water would be accessible to wildlife and wild horses.

## Morgan Spring

Morgan Spring is located within an unnamed ephemeral stream in Morgan Basin (Photo 9). It emerges from the ground below a stand of Woods' rose. The ground surrounding the spring is bare of herbaceous riparian vegetation and there are small patches of stinging nettle nearby. A portion of water from the spring was diverted at some point in the past using an underground collection apparatus and piped to an existing non-functioning trough. The pipe no longer reaches the trough and spills water onto the ground a short distance from the spring source. Spring flow ranges between about 0.45 and 6 gallons per minute. Access to the spring is on an existing primitive route that enters the Bluebell WSA from the east and continues up Morgan Basin.

The BLM and NDOW propose to remove the existing trough, creating no new disturbance, and install an enclosure around the spring source and riparian area. Approximately 1,371 feet of pipe rail fencing would be installed around the spring disturbing 0.012 acres and protecting approximately 1.53 acres and enhancing riparian functionality. The springhead would be fenced

but water would be available downstream of this spring source for wildlife and wild horses, except during low flows.

## Warburton Seep

Warburton Seep is located on a hillside below a rocky outcrop in Morgan Basin (Photo 10). Vegetation surrounding the spring includes Woods' rose, pinyon, Utah juniper, Nebraska sedge (*Carex nebrascensis*), upland grasses, and sagebrush. Water is not diverted from the spring source and it has been observed to flow between 0.13 and 1.5 gallons per minute. Surface water flows about 100 feet downslope and supports riparian vegetation along the way. Access to the spring is on an existing primitive route that enters the Bluebell WSA from the east and continues up Morgan Basin. The road accessing the area ends approximately 0.28 miles from the site. Supplies would be carried in the remaining distance.

The BLM and NDOW propose to install an enclosure to protect the spring source and promote riparian health. Approximately 787 feet of pipe rail fencing would be installed around the spring disturbing 0.036 acres and protecting approximately 0.39 acres and enhancing riparian functionality. The springhead would be fenced, but water would be available downstream of this spring source for wildlife and wild horses except during low flows

## 2.1.2. Guzzlers

Two guzzlers would be constructed to offer a stable meteoric water source to wildlife within the Goshute Peak WSA (Figure 2). Guzzlers capture precipitation and provide wildlife with a perennial water source. The guzzler locations were selected because of their proximity to wildlife habitat (mule deer and elk) and location near existing primitive routes within the WSAs. Both guzzlers are located on the northern portion of the Goshute Peak WSA. Specific habitat characteristics of the guzzler sites are identified in Chapter 3. These will be new facilities and will meet the non-impairment criteria or exceptions under 11c ii; iii; and iv of BLM Manual 6330 – Management of Wilderness Study Areas.

Guzzler 1 would be located near an existing primitive route that enters the Goshute Peak WSA from the west (Figure 9). Guzzler 1 would be constructed on a south-facing slope on the north side of an unnamed drainage at approximately 7,340 feet above mean sea level (AMSL). Vegetation surrounding Guzzler 1 includes sagebrush and pinyon-juniper woodland.

Guzzler 2 would be constructed on a west-facing slope on the south side of an unnamed drainage at approximately 6,726 feet AMSL. The dominant vegetation type adjacent to Guzzler 2 includes sagebrush and pinyon-juniper woodland. The site is located approximately 0.6 miles from an existing primitive route (Figure 10). As such, a one-time round-trip of approximately 1.2 miles of overland travel would be necessary to facilitate the transportation of the backhoe to this site. No new roads would be constructed. In order to avoid impacts to fragile soil and habitats during overland travel, a resource specialist would be present prior to disturbance to guide the backhoe operator along a route to avoid impacts to fragile soils and habitat. The resource specialist would also ensure that the backhoe operator follows the same path for ingress and egress. Because of the size and weight of materials for guzzler construction, and in order to avoid repetitious overland travel, all building materials that could not be practically carried in by person, would be flown in via helicopter to the site.

Initial ground preparation would involve limited use of a backhoe (per an agreement between BLM and NDOW) and/or explosives to create a vertically stacked guzzler (Photo 3 and Photo 4) at each site, which would minimize the overall disturbance footprint. Minor amounts of explosives could be used to assist in ground preparation in order to forgo the use of mechanical manipulation. The tanks would be buried with the steel canopy immediately above the tank and approximately 284 feet of pipe rail fencing would be installed around the guzzler disturbing less than 0.25 acres associated with each guzzler. A small four strand barbed wire fence would be installed around the collection surface with an approximate five foot offset. Construction of each guzzler is anticipated to take between two and three days. An environmental and minimal activity/minimum tool approach for the Proposed Action would include minimizing time spent on the ground.

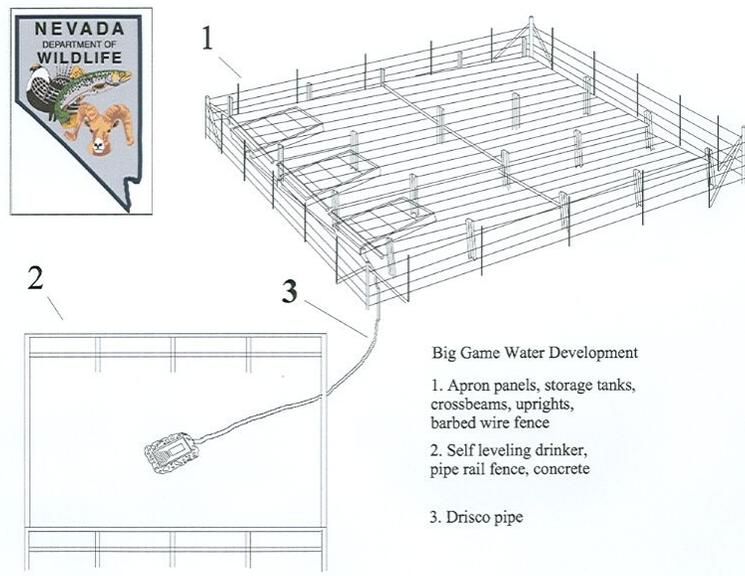
Due to the technological advances in guzzler design, necessary maintenance would be minimal. Each unit would be modular and constructed under the follow specifications:

- A total storage capacity of 7,500 gallons with six poly tanks (Photo 4);
- Suspended 54-foot by 40-foot corrugated steel canopy;
- One self-leveling steel guzzler approximately three-foot by four-foot;
- Four-strand barbed wire fence approximately 65 feet by 50 feet surrounding the steel canopy and tanks; and
- Wildlife-friendly pipe-rail fence around the self-leveling guzzler approximately of 71 feet by 71 feet.

Fencing associated with the guzzlers would have dimensions minimized to the extent possible. Fences and guzzlers would be camouflaged with color tones that would be similar to the surrounding vegetation. Barbed wire would only be used to protect the infrastructure portion (collection and storage) of the development. Intended wildlife access areas would be fenced with pipe rail. The fences would built in accordance with BLM specifications for barbed wire fence The guzzlers would be designed to be unnoticeable based on materials, camouflaging, and surrounding terrain. A guzzler diagram and photograph are shown below.

Equipment needed to place and develop the proposed guzzlers would include picks, shovels, breaker bars, battery-powered electric drill, post hole diggers, wheelbarrows, T-post pounders, fencing pliers, reciprocating saw, generator, electric jackhammers, a backhoe, and/or explosives.

After installation of the guzzlers, the area would be seeded with a native grass and forb mixture to ensure recovery of the area and to minimize the establishment of invasive species.



**Photo 3 Guzzler diagram**



**Photo 4 Typical Guzzler**

### **2.1.3. Access to Spring Developments and Water Catchments**

The BLM Manual 6330 – Management of Wilderness Study Areas, allows new permanent structures and installations (i.e., guzzlers, water tanks, and exclosure fences), used in wildlife management “if the facility meets an exception to the non-impairment criteria”. “For example, facilities that clearly protect or enhance wilderness characteristics by supporting a natural distribution, number, and interaction of native species within the WSA may be allowed” (Manual Section 1.6.D.11.c.ii, Wildlife). Additionally, “new water sources for wild horse or burro herds can only be allowed where they meet one of the exceptions to the non-impairment standard” and “water developments that are incorporated into the protection of springs or riparian areas may be permitted if they meet an exception to the non-impairment standard” (Manual Section 1.6.D.10.c.ii, Wild horse and burro management) (BLM, 2012a).

## 2.1.4. Environmental Protection Measures

The following EPMs, derived from BLM and NDOW's general requirements as well as other environmental protection regulations, would be implemented as part of the Proposed Action to prevent unnecessary or undue environmental degradation.

### General

- Trash and other waste products would be properly collected and disposed of by NDOW during project/maintenance period;
- BLM/NDOW would obtain all necessary permits prior to construction to comply with state and federal laws;
- Material would be transported by vehicle to the extent possible on existing primitive routes and hand-carried/or by pack animal the remaining distance from the primitive route, when practicable;;
- No new roads would be constructed; and

### Visual

Above-ground anthropogenic features would be placed in geographically isolated locations, camouflaged with color tones that would be similar to the surrounding vegetation, would be unnoticeable by a casual observer and would blend in with the surrounding terrain. To the extent possible, features would be placed below ground surface and reclaimed Section 2.1.1, "Spring Diversion and Maintenance" (p. 13).

### Water Diversions and Troughs

- New water diversions and re-installation of existing diversions would be designed to divert only a portion of the water produced by the spring and would leave sufficient water at the source (with the exception of Tunnel Spring as outlined in 2.1.1) to support riparian vegetation and maintain hydrologic functions to comply with State Law (Nevada Administrative Code [NAC] 445A.121);
- New diversion works and reinstallations of existing works such as perforated pipes, collection boxes, and conveyance pipes would be located downgradient of spring sources to reduce impacts to spring source lithology. Replacement of existing diversion works would also avoid spring sources where possible;
- New troughs would meet BLM standards as outlined in BLM Manual 1740-3;
- Water troughs and the associated storage tank(s) (at guzzler sites) would be painted an earth-tone color (approved by the BLM) 2-3 shades darker than the surrounding environment to account for aging and fading;
- To the extent practicable implementation of the Proposed Action, as it pertains to seep and springs, would occur in late fall and or spring to avoid conflicts with wildlife species during the hot summer months when wildlife are exclusively reliant on the perennial water sources for water;

- If construction activities need to occur within the summer months, only one project site would be under development at one time;
- Water troughs would be located where topography and vegetation assist with visual distraction. Water troughs would be placed so the height of the top rim would not exceed 20 inches above ground level and would be maintained at this level or lower. The overflow outlets would be located downhill from the trough a minimum of 40 feet;
- A bird and small mammal access ramp/escape ladder (designed as part of the water trough itself with an angled front and attached expanded metal) would be maintained in each water trough;
- No roads would be constructed for the installation of the pipeline or troughs;
- Surface disturbance associated with the project construction would not exceed a width of a 15-foot (7.5 feet from center line) corridor along the route of the pipeline and a 30-foot diameter circle around each trough. All ground disturbance associated with pipeline construction resulting in bare ground would be seeded with a seed mixture approved by BLM to help prevent soil erosion and noxious weed/annual exotic weed establishment. Sites would be reclaimed to meet BLM reclamation specifications as outlined in BLM Manual 1742-1
- Pipe would be buried at least 30 inches below the ground surface unless ground conditions prevent otherwise, as required for engineering or mitigation of cultural resource values; and
- No blading, grading, or scalping of the pipeline route would be allowed. Brush removal, if necessary, would be done by hand.

#### Wildlife

- Conservation measures from the 1999 Nevada Bird Conservation Plan and the 2005 Nevada Comprehensive Wildlife Conservation Strategy as recommended by NDOW would be incorporated;
- The Proposed Action implementation would be designed to avoid special status species as discussed in Section 3.1.8, “Special Status Species” (p. 47) during construction/maintenance periods;
- Unnecessary disturbance to potential unique habitats including burrow complexes used by burrowing owls (*Athene cunicularia hypugaea*) or pygmy rabbits, riparian areas important for Columbian spotted frogs (*Rana luteiventris*) etc. would be avoided;
- The Proposed Action would meet the requirements of the Migratory Bird Treaty Act (MBTA) and avoid destruction of birds, nests, eggs, or young. Construction would take place outside of the avian breeding season (March 1 to July 31);
- Surveys would be conducted by a qualified biologist. The survey results and the discovery of any nesting sites would be reported to NDOW and BLM where a suitable buffer would be determined depending on the species. Site reporting may be done at initial encounter by the surveying biologist to the agency biologist via phone call and resolved before the submission of the report;
- Fences would be built in accordance with BLM specifications for pipe rail fence Section 2.1.1, “Spring Diversion and Maintenance” (p. 13). Modifications may be incorporated into

the design at BLM's discretion based on consultation with NDOW, and subsequent recommendations, to minimize adverse impacts to wildlife;

- Four-strand wildlife-exclusionary barbed wire fence installation would occur around the two proposed guzzler catchment aprons. Basic specifications would include 12-foot spacing between T-posts; and 18"-6"-6"-12" for the wire.
- To prevent entrapment of small wildlife species and to minimize predatory bird perching, pipe caps would be secured to the top of the steel pipe corners of the fencing.
- Potential helicopter use to install guzzler #2 and generator use at the proposed spring sites would temporarily disrupt the solitude and silence in the WSAs. However, noise impacts to the WSAs during guzzler installation would be minor and of short-term duration when they were used.

### Cultural and Historic Resources

A finding of no adverse effects to historic properties for the project is contingent upon adherence to the following environmental 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.

- A cultural resource inventory of the spring and riparian maintenance sites, and two guzzler locations, was conducted with appropriate site documentation completed in advance of the proposed project implementation. Any potential project-related effects to National Register-eligible historic properties would be avoided, minimized, or mitigated as necessary under the Nevada State Protocol agreement between the BLM and the Nevada State Historic Preservation Office before the Proposed Action is implemented;
- Although not anticipated, if during project construction activities subsurface cultural resources are uncovered, the BLM would be notified and work in the area halted until documentation and evaluation by a BLM-approved archaeologist is conducted;
- Pursuant to 43 CFR §10.4(g), the BLM authorizing official would be notified immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR § 10.2), as well as any previously undocumented archaeological, historic or paleontological sites. All project-related activities within 328 feet (100 meters) of the discovery would cease immediately and the location secured to prevent vandalism or other damage. Activity at the location would be suspended until after the discovery has been evaluated, any necessary EPMs completed, and the BLM authorizing official issues a written Notice to Proceed. Human remains, funerary objects, sacred objects, or objects of cultural patrimony found on federal land would be handled according to the provisions of Native American Graves Protection and Repatriation Act and its implementing regulations (43 CFR § 10);
- All historic properties would be avoided;
- Low-profile fencing would be installed approximately 33 feet (10 meters) outside of site boundaries to avoid impacts to the viewshed of two historic wild horse trap structures;
- A cultural resource monitor would be required throughout construction of fencing/pipelines at areas of concern;

- BLM and NDOW would train employees and contractors during safety training prior to project construction and maintenance regarding their responsibilities to protect cultural resources and enforce BLM's policy against the removal of artifacts; and
- Project pipe materials would be buried at least 30 inches (46 centimeters) below the ground surface unless otherwise required for engineering purposes or mitigation of cultural resource values.

#### Noxious and Invasive Weeds and Non-Native Species

- The BLM Weed Management Standard Operating Procedures and recommendations would be followed according to BLM Manual 9015 for Integrated Weed Management;
- Treatment of invasive and noxious weeds would be in accordance with the procedures outlined by the *Programmatic Environmental Assessment of Integrated Weed Management on Bureau of Land Management Lands (BLM, 1998)* and *2007 Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement (BLM 2007)*;
- All vehicles entering and exiting the project site would be cleaned of any non-native invasive weed plant parts and vehicles will remain on existing and established roads to the site;
- All tools would be cleaned prior to locating to a new site to avoid transfer and spread of noxious and invasive species;
- No blading, grading, or scalping of the fence line would be permitted. Surface disturbance associated with project construction would not exceed a 15-foot buffer (7.5 from center line) along the route of the fence line. Brush removal would be done by hand; and
- After maintenance to troughs in riparian areas are complete and water developments (catchments) are constructed, the need for reseeding disturbed areas to prevent the spread of undesired weed species would be evaluated by the BLM. Revegetation to prevent erosion and weed growth would be implemented using a certified weed-free seed mix in accordance with the above BLM reclamation criteria outlined under the Water Diversions and Troughs heading of this section.
- After initial construction and use by helicopters to ferry in materials, all regular maintenance would be conducted without vehicles beyond cherry stemmed roads. Locations without vehicle access would be on foot or by pack animals, depending on the materials required.

#### Vegetation and Soils

- To minimize soil erosion and reduce establishment of weeds, NDOW would, if necessary, revegetate the disturbed areas with a certified weed-free, BLM-approved seed mix in accordance with the above BLM reclamation criteria outlined under the Water Diversions and Troughs heading of this section;
- Removal of vegetation for construction purposes would be kept to the minimum; and
- To prevent soil erosion, surface disturbance associated with project construction would not exceed a width of a 15-foot corridor (7.5 feet from center) along the route of the pipeline or fence and a 30-foot diameter circle around each trough.

### **2.1.5. Monitoring**

The BLM would conduct monitoring during the implementation of the Proposed Action to assess whether the EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21) are being followed and are adequate, as well as monitoring post-implementation. For example, monitoring could confirm that non-native invasive and noxious weeds are not becoming established or that cultural resources are not being impacted by the Proposed Action.

## **2.2. Alternative 2**

Alternative 2 is identical to the Proposed Action except that Alternative 2 would not include installation of the guzzler units and the diversion and trough at Sidehill Spring would not be installed. The exclusion of both guzzler developments and Sidehill Spring would result in 0.5 acres less disturbance for this project, or 84 percent less development under this alternative, and restrict all activity to previously disturbed sites. The applicable EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21) under the Proposed Action would be implemented under Alternative 2.

## **2.3. No Action Alternative**

The No Action Alternative is the current management situation. Under the No Action Alternative, the Proposed Action would not be implemented. Springs would continue to be impacted by wild horses. Implementation of the No Action Alternative would not meet the objectives of the Wilderness Act of 1964, to protect wilderness values and improve wildlife habitat.

## **2.4. Alternatives Considered but Eliminated From Detailed Analysis**

The following alternatives were brought forward during the scoping process.

### **Use small pinyon-juniper trees to protect springs**

This option consists of hauling in and/or hand cutting with primitive saws small pinyon-juniper trees to scatter all over the springs and spring brooks of concern. This could allow for banks and many areas to be covered and protected from livestock and wild horse trampling. There could be an opportunity for roses and willows to grow up amid the protection of the woody material and there would be no need at all for digging. This could also allow the full surface flow to be maintained and support natural riparian vegetation. It also may actually increase the surface flow through shading the water surface, and buffering trampling and compaction. Animals would still be able to water over the length of the spring/springbrook between the woody material. There would also be no temptation for livestock interests to intensify impacts, or extend pipelines. This alternative was brought forward through the scoping process.

The BLM would have to identify an area from which to cut the trees. NDOW or the BLM would have to pay for the trees to be cut and hauled to all the different spring sites and unload the branches at the site. This option would introduce a new fuel source for wildfires. To maintain the volume of cover, additional trees/branches would have to be brought in, and crews would have to remove the old cut branches before spreading the new ones to reduce fire hazards. The

dead cut branches could serve as a nest site for various bark beetles to infest the WSAs, which would impact wilderness character. Invasive species have a greater chance of populating the area as multiple trips would have to be made at each site, and the same location could only be used to harvest the wood for a few years maximum. Eventually, the presence of the branches would hinder vegetation repopulation of the spring sites. Determined equines could just as easily crush or move the branches to access the grass/water below as the humans that put it there. Cut timber might serve as a catalyst to encourage other visitors to illegally harvest other lignified materials in the area. Visitors might also use the branches to create large fires which could grow out of control. For these reasons, this alternative was eliminated from further consideration.

### **Improve all springs within the WSAs**

The improvement of all of the existing water sources within the Blue Bell and Goshute Peak WSAs was considered as an alternative. After an initial look at the existing sources of water in the WSAs (Figure 11) several springs sites were determined not feasible to improve to provide water; therefore this alternative was eliminated from detailed analysis. The spring information and rationale why improvement would not improve the water supply is provided in the table below.

**Table 2.2. Existing Water Sources With Potential for Improvement Within the Bluebell and Goshutes Peak WSAs**

<b>Water Source Name/ID</b>	<b>Water Source Characteristics</b>	<b>Rational for No Improvement Proposed</b>
Bluebell WSA		
Tunnel Spring	See description in Section 2.1.1, "Spring Diversion and Maintenance" (p. 13).	Proposed for improvement under the Proposed Action and Alternative 2.

# **Chapter 3. Affected Environment and Environmental Consequences**

This page intentionally  
left blank

This section describes the general setting, identifies the critical elements and other affected resources and uses of concern in the vicinity of the Proposed Action, and describes the affected environment and the predicted environmental consequences of the Proposed Action. This section also describes the No Action Alternative as it is comparatively analyzed against the Proposed Action.

The project area includes both Bluebell and Goshute Peak WSAs in their entirety. It is located approximately 15 miles southwest of Wendover, in Elko County, Nevada (Figure 1) at elevations ranging between 4,720 and 9,580 feet AMSL on public lands. The project area encompasses the south and central portions of the Goshute and Toano ranges. The highest peak in the area is Goshute Peak at 9,609 feet AMSL within the southern extremity of the project area.

In general, the area is rural with livestock grazing, wild horse management, mineral exploration, and dispersed recreation being the dominant types of multiple-use. The dominant vegetative communities within the project area are the pinyon-juniper woodland, xeric mixed sagebrush shrubland, montane sagebrush shrubland, and mountain mahogany cover types also occupy major portions of the project area (Figure 12). The climate of the region is classified as mid-latitude steppe and desert characterized by hot summers and cold winters with semi-arid conditions. The annual precipitation for 2012 totaled 10 inches in Wells, Nevada. The mean annual temperature for 2012 ranged between 29.2 degrees Fahrenheit (°F) and 60.4°F with an average of 44.8°F (NWS, 2012).

To comply with NEPA and in accordance with the BLM NEPA Handbook (H-1790-1), a checklist of critical elements of the environment which are subject to requirements specified in statute, regulation, or by executive order must be considered in all EAs (BLM, 2008a). Table 3.1, “Supplemental Authorities” (p. 29) identifies the resources that must be considered in all environmental analyses, as well as other resources deemed appropriate for evaluation by the BLM, and denotes if the Proposed Action affects those resources.

**Table 3.1. Supplemental Authorities**

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Human Concerns				
Air Quality		X		The Proposed Action would have no effect on air quality.
Cultural Resources			X	Refer to Section 3.1.1, “Cultural Resources” (p. 33)
Environmental Justice	X			The Proposed Action would not disproportionately impact any low income or minority populations as described in the Environmental Justice Executive Order (EO 12898).
Human Health and Safety	X			The Proposed Action would have no effect on human health and safety.

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Native American Concerns			X	Refer to Section 3.1.2, "Native American Concerns" (p. 35)
Wildlife/Animal Concerns				
Migratory Birds			X	Refer to Section 3.1.3, "Migratory Birds" (p. 36)
Threatened/Endangered Species			X	Refer to Section 3.1.8, "Special Status Species" (p. 47)
Other Concerns				
Areas of Critical Environmental Concern	X			There are no areas of critical environmental concern in the project area. Therefore, areas of critical environmental concern would not be affected.
Lands with Wilderness Characteristics	X			There are no Lands With Wilderness Characteristics. Therefore, Lands With Wilderness Characteristics would not be affected
Farm Land-Prime/Unique	X			There are no known designated prime or unique farmlands in the project area.
Floodplain	X			There are no floodplains within the project area.
Forests and Rangelands Healthy Forest and Restoration Act (HFRA)	X			This element applies only to HFRA projects; no forest fuels reduction projects are analyzed within this EA.
Non-Native Invasive and Noxious Species			X	Refer to Section 3.1.4, "Non-Native, Invasive and Noxious Species" (p. 38)
Waste, Hazardous/Solid	X			No wastes, hazardous or solid, would be utilized, stored, or encountered by implementing the Proposed Action.
Water Quality Drinking-Ground			X	Refer to Section 3.1.5, "Hydrology and Riparian Wetland" (p. 40)

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Wetlands, Riparian Zones			X	Refer to Section 3.1.5, "Hydrology and Riparian Wetland" (p. 40)
Wild and Scenic Rivers	X			No federally designated Wild and Scenic Rivers exist within the project area.
Wilderness			X	Refer to Section 3.1.12, "Wilderness and Wilderness Study Areas" (p. 61)
Note: See Statute: NV-2009-030, BLM Manual, regulation or order that may require an element be addressed in a NV BLM EA or Environmental Impact Statement				

Other elements of the human environment that have been considered for this EA are listed in Table 3.2, "Resources or Uses Other than Supplemental Authorities" (p. 31). Resources that may be affected by the Proposed Action are further described in this EA.

**Table 3.2. Resources or Uses Other than Supplemental Authorities**

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Human Concerns				
Access		X		
Engineering	X			There are no engineering concerns in the project area.
Fire Management	X			There are no fire management concerns in the project area.
Mining/Minerals	X			There are no mining/mineral concerns in the project area.
Realty-Land Use		X		No impacts to Realty-Land Use activities are expected to occur under the Proposed Action.
Recreation			X	Refer to Section 3.1.6.4, "Environmental Consequences of the No Action Alternative" (p. 46)
Social or Economic	X			There are no social or economic concerns in the project area.
Visual Resources			X	Refer to Section 3.1.6, "Visual" (p. 45)
Wildlife/Animal Concerns				

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Aquatic Species	X			There are no aquatic species in the project area.
Livestock and Grazing		X		<p>The proposed exclosures are located within the Leppy Hills and Utah Nevada North grazing allotments. The Proposed Action would not change the permitted AUMs or any adversely impact any water sources.</p> <p>The proposed guzzlers would be located in Use Area J of the Spruce allotment, No authorized grazing occurs in Use Area J of the Spruce Allotment.</p> <p>Therefore, livestock and grazing resources have been determined present but not affected.</p>
Sensitive Species			X	Refer to Section 3.1.8, "Special Status Species" (p. 47)
Vegetation and Soils			X	Refer to Section 3.1.9, "Vegetation and Soils" (p. 53)
Wildlife			X	Refer to Section 3.1.10, "Wildlife" (p. 56)
Wild Horses			X	Refer to Section 3.1.11, "Wild Horses" (p. 59)
<b>Other Concerns</b>				
Climate Change (GHG's, Wildland fire, disease, etc.)		X		No impacts to climate changes such as GHG's, Wildfire, disease, etc. are expected. Climate change as part of the baseline condition is discussed in Section 3.1.13, "Common to all

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
				Alternatives and Resources” (p. 63).
Energy (Gas, Oil, Wind)	X			There are no energy (Gas, Oil, Wind) concerns in the project area.

### 3.1. Analysis of Affected Resources

As identified in Table 3.1, “Supplemental Authorities” (p. 29) and Table 3.2, “Resources or Uses Other than Supplemental Authorities” (p. 31), the resources that are present, their existing conditions, and whether they have the potential to be affected by the Proposed Action are described below.

Potential impacts are described in terms of duration (short-term or long-term) and intensity. Short-term impacts generally last between one and five years and are based on impacts from the Proposed Action installation activities and initial re-growth of habitat, while long-term impacts last beyond five years and are based on impacts from project features and reestablishment of habitat. The thresholds of change for the intensity of a potential impact are defined as follows:

- No Impact – There is no detectable impact.
- Negligible – The impact is at the lowest level of detection.
- Minor – The impact is slight, but detectable.
- Moderate – The impact is readily apparent.
- Major – The impact is a severe or adverse impact or benefit.

This chapter also analyzes the potential cumulative impacts that would result from the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.

#### 3.1.1. Cultural Resources

##### 3.1.1.1. Affected Environment

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings (36 CFR Part 800.1(a)). The purpose of consultation is to identify historic properties (cultural resources listed or eligible for listing on the NRHP) potentially affected by the undertaking. Any potential adverse effects to historic properties must be identified on public lands to the extent possible. If necessary, appropriate avoidance or mitigation measures must be developed to reduce or eliminate the adverse effects to eligible sites located within the project’s Area of Potential Effect (APE).

Cultural resources consist of definite locations of human activity, occupation, or use identified through field inventory, historic documentation, or oral evidence. The term includes archaeological, historic, and architectural properties and sites or places of traditional cultural or religious importance to Native American Tribes or other social or cultural groups. The BLM is responsible for identifying, protecting, and managing cultural resources located on public lands and on non-federal lands that may be affected by BLM actions.

Decisions regarding the management of cultural resources are dependent on determinations of significance in their evaluation for the NRHP. In order for a cultural resource site to be eligible for the NRHP, the site must meet certain criteria (36 CFR 60.4) and retain aspects of integrity including location, design, setting, materials, workmanship, feeling, and association.

BLM conducted a Class III (intensive) cultural resource inventory at each of the seven proposed spring and riparian maintenance areas and two guzzler installation locations. A total of 52.2 acres were inventoried. Within the project APE, five new cultural resource sites were encountered during the inventory. Three of the sites are considered eligible for the NRHP; two sites are historic wild horse trap and holding pen structures. Artifacts found at both eligible wild horse traps ranged in age from circa 1900 to the 1970s, the last documented use of the traps prior to enactment of the Wild Horse and Burro Act, which outlawed such activities. They are made of pinyon wooden posts and barbwire fencing, with multiple holding pens per trap site. Historic documentation suggests that most of the traps were located just below small bluffs near a water source in which the animals were known to frequent, particularly when distressed (Barnum, 1908). The other NRHP-eligible property is a prehistoric site.

Currently, the conditions at the sites are being heavily impacted by wild horse trampling causing heavy erosion within the site perimeters, especially at the prehistoric site.

### **3.1.1.2. Environmental Consequences of the Proposed Action**

There would be no adverse effects to Historic Properties under the Proposed Action. The two wild horse trap and holding pen structures would be avoided and construction of the fence around the springs would protect and preserve these sites. Installation of low-profile fencing placed approximately 33 feet (10 meters) outside of site boundaries would avoid indirect impacts to the viewshed of the two historic wild horse trap structures (Section 2.1.4, “Environmental Protection Measures” (p. 21)). A similar buffer would also be placed around the prehistoric site. The prehistoric site would also be protected by the proposed fence location around the spring and pipeline. The trough location would be outside of the fenced area and site boundaries. Prior to implementation of the project, all proposed fence lines would be field-checked by a BLM district archeologist or district archeological technician. The placement of spring enclosures would result in enhanced preservation qualities for cultural resources, including the three eligible sites. The fences would prevent further wild horse overutilization and trampling. With implementation of the EPMs as outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), no adverse effects are anticipated on historic properties.

### **3.1.1.3. Environmental Consequences of Alternative 2**

Since no cultural resources, hence no historic properties, are located at Sidehill Spring or either of the two proposed guzzler site locations, Alternative 2 would have the same environmental consequences for Cultural Resources as the Proposed Action (Section 3.1.1.2, “Environmental Consequences of the Proposed Action” (p. 34)).

### **3.1.1.4. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, management actions would remain at the current level. The No Action Alternative would not allow for protection of the eligible historic properties. As stated above, current conditions at the sites are being heavily impacted by wild horses. If implementation of the No Action Alternative occurs, impacts are expected to be long-term and may result in effects that alter, directly and indirectly, characteristics of a historic property that qualify it for inclusion in the NRHP. For example, the effects could diminish the integrity of the property's location, design, setting, feeling, among other attributes (36 CFR Part 800.5(1)).

## **3.1.2. Native American Concerns**

### **3.1.2.1. Affected Environment**

In accordance with the National Historic Preservation Act (P.L. 89-665), the National Environmental Policy Act (P.L. 91-190), the Federal Land Policy and Management Act (P.L. 94-579), the American Indian Religious Freedom Act (P.L. 95-341), the Native American Graves Protection and Repatriation Act (P.L. 101-601, and Executive Order 13007, the BLM must provide affected Tribes and Bands the opportunity to comment and consult on proposed BLM land management actions. The BLM must also make efforts to identify locations having traditional, cultural, or religious values to Native Americans and ensure that land management actions do not unduly or unnecessarily burden the pursuit of traditional religion or life ways by inadvertently damaging important locations or hinder access to them.

The Western Shoshone and possibly other tribes of the Western Great Basin traditionally occupied the lands within the BLM Elko District Office administrative boundary. Historically, the people hunted and gathered, built temporary shelters, and participated in the various social gatherings, activities, and ceremonies that define a culture. The Western Shoshone found and continue to find strength or spirituality in all living things upon the land including the land itself. Therefore, it is believed that the area in question may contain locations of religious and spiritual importance.

Such sites of importance include, but are not limited to: existing antelope traps; certain mountain tops used for prayer, guidance, and reflection; medicinal and edible plant gathering locations; prehistoric and historic village sites; gravesites; sites associated with creation stories; hot and cold springs; material used for basketry and cradle board making; locations of stone tools such as projectile points and grinding stones (mano and metate); chert and obsidian quarries; hunting sites; sweat lodge locations; locations of pine nut ceremonies, traditional gathering, and camping; rocks or boulders used for offerings and medicine gatherings; tribally identified Traditional Cultural Properties (TCPs); TCPs found eligible to the NRHP; rock shelters; rock image (petroglyphs, pictographs) locations; lands that are near, within, or boarding current reservation boundaries; lands that conflict with tribal land acquisition efforts that involve the Nevada Congressional Delegation; and water sources in general, which are often considered the "life blood of the Earth and all who dwell upon it."

### **3.1.2.2. Environmental Consequences of the Proposed Action**

Various tribes and bands of the Western Shoshone have stated that federal projects and land actions can have widespread effects to their culture and religion as they consider the landscape as sacred and as a provider.

Due to the fact that there is no knowledge (BLM) of any site specific spiritual or religious, or other important traditional and/or cultural use sites/activity areas within the project boundaries, there exists the possibility for land management practices to adversely affect traditional life ways and the integrity of Native American spiritual/religious sites or sites of traditional and cultural importance.

On March 26, 2013, a consultation initiation letter was sent to the following tribal entities:

- Battle Mountain Band Council
- Duckwater Shoshone Tribe
- Ely Shoshone Tribe
- Confederated Tribes of the Goshute Indian Reservation
- Shoshone-Paiute Tribes of the Duck Valley Indian Reservation
- Wells Band Council
- Western Shoshone Committee
- Western Shoshone Descendants of Big Smoky

Based on a letter response request, on May 3, 2013, the BLM met with the Confederated Tribes of the Goshute Indian Reservation to discuss aspects of the project. The proposed project is located in a range that was used by the Shoshone tribes. To date, no locations having traditional, cultural, religious or spiritual importance have been identified. Consultation and coordination opportunities would be available throughout the life of the proposed project.

Therefore, under the Proposed Action of spring/riparian enhancements, and wildlife guzzler installations, there would be no impacts to Native American traditional, cultural, spiritual or religious sites.

### **3.1.2.3. Environmental Consequences of Alternative 2**

Under Alternative 2, similar to the Proposed Action, there would be no impacts to Native American traditional, cultural, spiritual, or religious sites.

### **3.1.2.4. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, the Proposed Action, or Alternative 2, would not occur. With current management practices continuing, there would be no impacts to Native American traditional cultural properties, important tribal resources, and spiritual or religious sites.

## **3.1.3. Migratory Birds**

### **3.1.3.1. Affected Environment**

“Migratory bird” means any bird listed in 50 CFR 10.13. All native birds found commonly in the United States, with the exception of native resident game birds, are protected under the MBTA.

*Chapter 3 Affected Environment and Environmental  
Consequences  
Migratory Birds*

The MBTA prohibits taking of migratory birds, their parts, nests, eggs, and nestlings. 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 January 17, 2001 and updated August 31, 2010. The purpose of the 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 Great Basin Bird Observatory (GBBO) has conducted surveys in the vicinity of the project area. Species documented during GBBO surveys include brown-headed cowbird (*Molothrus ater*), black throated gray warbler (*Setophaga nigrescens*), rock wren (*Salpinctes obsoletus*), mountain chickadee (*Poecile gambeli*), and mountain bluebird (*Sialia currucoides*) (NDOW, 2011).

More than 75 percent of all species in Nevada are strongly associated with riparian vegetation (USGAO, 1993), including 80 percent of avian species (Dobkin, 1998). Based on data compiled over the last several decades by NDOW and because the project is associated with riparian areas, it is known that a wide variety of migratory birds are likely to be found within the project area. These species are associated with a variety of habitat types, and many occur within the project vicinity year round. A full list of birds having a potential to occur in the project vicinity is provided as Appendix B.

### **3.1.3.2. Environmental Consequences of the Proposed Action**

The Proposed Action would result in less than 0.59 acres of new disturbance to the project area. All activities associated with the Proposed Action would occur outside the avian breeding and nesting seasons (March 1 to July 31), thus no direct impacts to nests or breeding birds will occur as a result of the Proposed Action. Indirect negative impacts are expected to be negligible and temporary in nature, and would be associated with the increased activity and human presence within potential migratory bird habitat during the implementation of the Proposed Action (a few days). More specifically, during the period of temporary loss of habitat, impacts would be negligible because disturbance would be dispersed and large tracks of undisturbed suitable upland habitat are available in the surrounding area for dispersing birds. The direct loss of less than 0.59 acres of migratory bird habitat would be temporary, until productive vegetation communities are successfully re-established through reclamation. Furthermore, the increased vegetative diversity and functioning conditions of the riparian areas as a result of the Proposed Action would create positive impacts to migratory birds by restoring migratory bird habitats within riparian areas, which had been previously lost due to over-utilization. Improved riparian habitat resulting from the Proposed Action is expected to yield an increase in species diversity and abundance. Similarly, the proposed two guzzlers would provide additional water sources which would allow otherwise suitable habitat to be utilized by migratory birds and would increase species diversity and abundance in those habitats. Avian predator perching points that would be increased with the implementation of the Proposed Action would be mitigated with the EPMS discussed in Section 2.1.4, “Environmental Protection Measures” (p. 21). Additionally, since much of the Goshute and Toano ranges are forested, an abundance of potential perching points already exist, thus the increase of perching points as a result of the Proposed Action would be negligible. The Proposed Action would increase habitat function and diversity, creating protective

vegetative cover for migratory birds in which they can avoid both avian and terrestrial predators. With the implementation of the EPMs discussed in Section 2.1.4, “Environmental Protection Measures” (p. 21), impacts to migratory birds are expected to be short-term and minor.

### **3.1.3.3. Environmental Consequences of Alternative 2**

The type of impacts to migratory birds from Alternative 2 would be similar to the Proposed Action; however, the total amount of surface disturbance under this alternative would be reduced from less than 0.59 acres to less than 0.09 acres without construction of the two guzzlers or installation of the water diversion and trough at Sidehill Spring. Therefore, less surface disturbance would result from this alternative. The positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers to migratory birds as described in the Proposed Action (Section 3.1.3.2, “Environmental Consequences of the Proposed Action” (p. 37)) would not occur under this alternative.

### **3.1.3.4. Environmental Consequences of the No Action Alternative**

No indirect negative impacts would occur due to the implementation of the Proposed Action with increased activity and human presence. The No Action Alternative would not allow for protection of the target springs; impacts would most likely continue and result in less available water for consumptive uses such as riparian vegetation and wildlife. With implementation of the No Action Alternative, impacts are expected to be long-term and moderate. Under the No Action Alternative, management actions would remain at the current level.

## **3.1.4. Non-Native, Invasive and Noxious Species**

### **3.1.4.1. Affected Environment**

The BLM defines an invasive weed as, “a non-native plant that disrupts or has the potential to disrupt or alter the natural ecosystem function, composition and diversity of the site it occupies. Its presence deteriorates the ecological health of the site, replaces desirable vegetation, and it may interfere with management objectives for that site. It is an invasive species that requires a concerted effort (manpower and resources) to eradicate it from its current location, if it can be removed at all” (BLM, 2008c).

Invasive and non-native plant species may spread from infested areas by people, equipment, livestock, wildlife, and winds. They often exhibit aggressive growth and have the potential to seriously degrade the economic and ecological values of natural resources. Under Executive Order 13112, it is the policy of the land management agencies to prevent introduction of non-native invasive and noxious species and to control their spread (NISC, 2011). Nevada Revised Statute 555.005 defines noxious weeds as plants, which are likely to be “detrimental or destructive and difficult to control or eradicate.” The State of Nevada classifies noxious weeds into three categories as defined below.

Category A weeds are not found or are limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; and control is required by the state in all infestations (NDOA, 2005).

Category B weeds are established in scattered populations in some counties of the state; actively excluded where possible; actively eradicated from nursery stock dealer premises; and control is required by the state in areas where populations are not well established or previously unknown to occur (NDOA, 2005).

Category C weeds are currently established and widespread in many counties of the state with abatement at the discretion of the state quarantine officer (NDOA, 2005).

The BLM Elko District Office has developed an Integrated Weed Management Plan for the entire Elko District. In addition, the BLM follows all federal and state noxious and invasive weed laws and Executive Orders as described above as well as BLM Manual 9015 – Integrated Weed Management (BLM, 1992).

The BLM weeds database was reviewed for known occurrences of non-native, invasive, and noxious weeds. Figure 13 displays the known occurrences of non-native, invasive, and noxious weeds as well as the knapweed herbicide treatments mentioned below. Houndstongue (*Cynoglossum officinale*) and squarrose knapweed (*Centaurea virgata*) were identified as being present within the project area and are both Category A Nevada noxious weeds. A squarrose knapweed herbicide treatment of approximately 1.88 acres was conducted by the BLM in August 2010. Canada thistle (*Cirsium arvense*) and tamarisk (*Tamarix* spp. *cicuta maculata*) were also identified as occurring within the project area and are both Category C Nevada noxious weeds. Invasive non-native species cheatgrass (*Bromus tectorum*) is also known to occur throughout the project area.

#### **3.1.4.2. Environmental Consequences of the Proposed Action**

Noxious weeds and non-native species are already present throughout the project area. It is not anticipated that project construction and maintenance would result in an appreciable increase in these species.

Natural processes such as wildland fire have the potential to contribute to the establishment of new non-native invasive species. Any increase in human activity such as recreation will usually result in the opportunity to spread noxious weeds. However, with the implementation of the EPMS discussed in Section 2.1.4, “Environmental Protection Measures” (p. 21), the spread of noxious weeds from the implementation of the Proposed Action would be minimized, making impacts from non-native invasive and noxious species short-term and minor.

#### **3.1.4.3. Environmental Consequences of Alternative 2**

Impacts from Alternative 2 are expected to be similar to those described for the Proposed Action (Section 3.1.4.2, “Environmental Consequences of the Proposed Action” (p. 39)); however, the total surface disturbance associated with this alternative would be reduced to less than 0.09 acres.

#### **3.1.4.4. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, management actions would remain at the current level. Natural processes such as wildland fire would still have the potential to contribute to the establishment of new non-native invasive species. Any increase in human activity such as recreation will usually result in the opportunity to spread noxious weeds.

## 3.1.5. Hydrology and Riparian Wetland

### 3.1.5.1. Affected Environment

#### Hydrology

The project area encompasses the south and central portions of the Goshute and Toano ranges. The water resources associated with the Bluebell and Goshute Peak WSAs include four hydrographic basins: Goshute Valley to the west, Pilot Creek to the northeast, Great Salt Lake Desert to the east, and Antelope Valley to the southwest (Figure 14).

The scarce water resources within the Goshute and Toano ranges include springs/seeps, ephemeral/intermittent streams, ephemeral ponds, and water wells (Figure 11). Water resource inventory data collected from 1979 to 2011 along with PFC assessments provides much of the information regarding flow, condition and other characteristics of these water resources and associated riparian values. Detailed information is only available for sources on public lands. A summary of the spring in the project area and status of these springs is show in Table 3.3, “Spring and Riparian Area Information” (p. 41).

Spring flows vary yearly and by season reflecting climatic inputs such as precipitation. It is likely that long-term climatic inputs such as global climate change have also impacted discharge at these springs. BLM flow measurements are not a quantification of total water produced by the spring since all or a portion of the water coming from a spring is evaporated, utilized by nearby vegetation, or seeps into groundwater near the spring source. A summary of characteristics of the target springs is presented in Section 2.1.1, “Spring Diversion and Maintenance” (p. 13).

The quantity of available water at the target springs is limited in part due to increased soil compaction by wild horse use and likely results in less available water for other consumptive uses such as riparian vegetation and wildlife. Most springs within the complex have little flow and most available flow is removed by direct consumption by wild horses.

Riparian condition assessments and field observations indicate that the presence of wild horses is negatively impacting the spring sites. In general, ungulates, including wild horses, impact riparian areas by compacting and disturbing riparian soil making them less productive and less stable. Subsequent erosion of riparian soils results in decreasing riparian value. Adverse impacts increase when more wild horses are present. During summer months, wild horses compete for scarce water resources and spend a great deal of time near water resources and associated riparian zones. Additional impacts occur when wild horses dig at spring sources with their hooves to try to obtain more water. This results in a depression of the water table at spring sources and further reduction of the riparian area quality (Photos 5 through 10).

There are no known water contaminations at the target springs that have resulted in an inability to use water resources for their known beneficial uses as defined by NAC 445A.144 (typically wildlife, livestock and wild horse use). Some water quality data have been collected by the BLM, but these data are insufficient to determine trends at local springs and do not include any nutrient or bacteria data. For purposes of evaluation, riparian condition assessments can be used to determine whether and to what extent water quality is under anthropogenic influence. In general, a spring is more likely to have water quality issues if its riparian area has been rated as non-functional than if it is rated at PFC.

## Riparian/Wetland

The Bluebell and Goshute Peak WSAs have scattered and limited riparian areas, which are associated with springs and seeps. Under natural conditions these small springs provide water, forage, and habitat diversity for native wildlife and wild horses. These systems occupy less than 0.1 percent of the landscape but are disproportionately important for biodiversity and users of the landscape including humans.

Riparian condition assessments were conducted by the BLM and NDOW between 1999 and 2011 on springs that would be affected by the Proposed Action. Riparian condition assessments are qualitative assessments of riparian areas based on quantitative science. The methodology evaluates the functionality of riparian areas based on hydrological, vegetation, and soils/erosional factors within the context of the geologic setting and the potential of the area. Prichard et al. (1994) suggests the following definitions for spring and lentic areas:

“Lentic riparian-wetland areas are functioning properly when adequate vegetation, landform, or debris is present to:

1. Dissipate energies associated with wind action, wave action, and overland flow from adjacent sites, thereby reducing erosion and improving water quality;
2. Filter sediment and aid floodplain development;
3. Improve flood-water retention and groundwater recharge;
4. Develop root masses that stabilize islands and shoreline features against cutting action;
5. Restrict water percolation;
6. Develop diverse ponding characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterbird breeding, and other uses; and
7. Support greater biodiversity”.

Riparian condition assessments on the target springs indicated that they are in the lower range of functionality. One is functional at risk with no apparent trend (FARN), two are functional at risk with downward trend (FARD), and three are non-functional (NF). Poor ratings were given to these springs primarily because of physical impacts related to wild horse use.

**Table 3.3. Spring and Riparian Area Information**

Source Name	Legal Description	Type(s) of Negative Impacts	PFC Rating
Tunnel Spring	Section 28, T34N, R68E	wild horse use and water diversion	NF
Rock Spring	Section 10, T33N, R68E	wild horse use	NF
Erickson Spring	Section 35, T33N, R68E	wild horse use and water diversion	NF
Sidehill Spring	Section 14, T32N, R68E	wild horse use	FARD

Source Name	Legal Description	Type(s) of Negative Impacts	PFC Rating
Morgan Spring	Section 15, T32N, R68E	wild horse use and water diversion	FARD
Warburton Seep	Section 14, T32N, R68	wild horse use	FARN

### 3.1.5.2. Environmental Consequences of the Proposed Action

The Proposed Action includes developments that are expected to improve riparian value, hydrology, and water availability at some spring sources. Water availability would decrease at other sources because springs would be located inside enclosures. There are some negative impacts to riparian areas and hydrology, but these negative impacts are expected to be outweighed by positive effects.

Proposed enclosures would protect the spring source and associated riparian area by preventing further impacts by wild horses. This would prevent additional hoof action and resulting alteration of surface flow patterns. This change would allow riparian soils and vegetation within the enclosure to develop. The riparian value may take a long time to recover due to heavy impacts which have occurred at some sites. In the long-term, the riparian area would capture sediment and increase the volume of riparian soils and decrease loss of spring water from infiltration. Development of riparian vegetation would also decrease water losses from evaporation. When this occurs, the ability of the spring to support additional riparian area would increase since more water would be available overall, and flow during wet periods would be stored for use during dry periods.

Spring diversions increase the availability of water for wild horses and wildlife, but they can also have negative impacts to hydrology and riparian resources. Replacement of the diversion at Rock Spring and a new diversion at Sidehill Spring would improve the availability of water at these sources, but may result in some impacts to riparian area. With a diversion in place, water would be available at Rock Spring even during periods of low flow. These diversions would also alter surface and/or subsurface flow patterns and would make less water available for riparian vegetation downstream of the diversion. Overflow from these diversions could occur on upland soils, which would lose water to infiltration more quickly than riparian soils. Repair and replacement of troughs at Tunnel Spring and Rock Spring would improve the availability of water for wild horses and wildlife and extend the life of existing water developments.

Enclosure fences around Erickson Spring, Morgan Spring, and Warburton Seep may result in reduced water availability during periods of low flow. During dry periods water from these sources may not flow outside of the proposed fences. Improvement of riparian areas would increase spring storage and may increase availability of water outside enclosures in the long-term. The Proposed Action, as it pertains to riparian values, would protect areas from overutilization, reduce further soil compaction, and encourage long-term viability of the seep and spring sources.

### 3.1.5.3. Environmental Consequences of Alternative 2

This alternative would not include construction of the two guzzlers or a water diversion and troughs at Sidehill Spring. The associated impacts and benefits of a diversion as described above for the Proposed Action in Section 3.1.5.2, “Environmental Consequences of the Proposed Action” (p. 42) would not occur.

### 3.1.5.4. Environmental Consequences of the No Action Alternative

Under the No Action Alternative, management actions would remain at the current level. The No Action Alternative would not allow for protection of the target springs, and the same or greater rate of diversion would occur under the No Action Alternative as compared to the Proposed Action. However, if the No Action Alternative is implemented, wildlife would drink directly from the ground rather than from a trough. As stated above, current conditions at the springs are impacted by heavy use of wild horses. If the No Action Alternative occurs, impacts would most likely continue and result in less available water for consumptive uses such as riparian vegetation and wildlife. With implementation of the No Action Alternative, impacts are expected to be long-term and major.



**Photo 5 Tunnel Spring Area, Impacted by wild horse use (2011)**



**Photo 6 Rock Spring Area, Impacted by wild horse use (2012)**



**Photo 7 Erickson Spring Area, Impacted by wild horse use (2012)**



**Photo 8 Sidehill Spring Area, Impacted by wild horse use (2012)**



**Photo 9 Morgan Spring Area, Impacted by wild horse use (2012)**



**Photo 10 Warburton Seep Area, Impacted by wild horse use (2011)**

## **3.1.6. Visual**

### **3.1.6.1. Affected Environment**

The entire project area is located within VRM Class I. The objective of Class I is to preserve the existing characteristics of the landscape. A VRM Class I is assigned to areas where a management decision has been made to preserve the natural landscape. This includes specially designated areas such as WSAs. According to VRM Class I, the level of change to the characteristic landscape should be very low and should not attract attention. This class provides for natural ecological changes; however, it does not preclude very limited management activities.

For projects occurring within the Goshute Peak WSA there are no current anthropogenic features at either of the proposed guzzler sites. Line, form, color, and texture for both areas are consistent with the natural forms that dominate the landscape of this WSA. The ridgeline to the east of each project area forms a strong undulating, irregular line from which pyramidal peaks flow down and away from this central spine to the wide flat valley below. Vegetation within the project area varies from pinyon pine and Utah juniper forest in the mountainous areas, to open, xeric shrubland in Goshute Valley. From most vantage points, the texture looks smooth and consistent with dark green and black coloring.

For projects occurring within the Bluebell WSA general landscape descriptions remain similar to those associated with the Goshute Peak WSA. Range improvement visual impacts at individual spring sites consist of previously existing troughs, pipes, and fencing comprised of both natural and manufactured materials that generally impact the line, and form of the natural landscape. The manufactured materials at spring sites (where they occur) have become worn and weathered so as to render them mostly unnoticeable from as little as 50 feet from the source. Oxidation on metal surfaces combine with the natural materials used to construct most of the corrals, and other fencing blend with natural colors and textures in the area. Denuded areas are characterized by smooth flat textured soils with a light to darker brown color depending on soil composition and moisture content. Forms and lines are generally soft and rolling as the topography of the area changes. A few of the springs are characterized by rock piles scattered in a random fashion around each spring source of equally random size. The rocks tend to be lighter in color than the

surrounding bare soil and present stronger circular lines and spherical forms compared to those springs that lack major rock outcrops.

### **3.1.6.2. Environmental Consequences of the Proposed Action**

The Proposed Action would result in minor visual impacts principally affecting the elements of line and texture. Guzzlers would be camouflaged with color tones that would be two to three shades darker than the predominant landscape color tone. The guzzlers would be located primarily underground and the above ground portion would be largely unnoticeable blending in with the surrounding terrain. The guzzlers are not expected to be visible to the casual observer at distances greater than 100 yards. fence post will not be visible at distances greater than 20 to 30 yards. Once construction is complete, the area would be restored using vegetation, rock, and soil from the site to mimic the natural contours of the area. Re-seeding would be completed if necessary in coordination with the BLM. Impacts to visual resources are expected to be consistent with VRM Class I objectives such as preserving the existing characteristic of the landscape while allowing very limited management activities. With implementation of the EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), impacts to visual resources would be long-term and minor.

### **3.1.6.3. Environmental Consequences of Alternative 2**

Under this alternative, the two guzzlers would not be installed in the Goshute Peak WSA and thus it would reduce the visual impacts to the WSA by approximately 0.5 acres over the Proposed Action. Under this alternative the natural features in terms of line, form, color and texture within the Goshute Peak WSA would remain unchanged as well as limit impacts to Sidehill Spring to just a pipe fence to protect the riparian area. Fence posts will not be visible at distances greater than 20 to 30 yards. Anthropogenic features within the Goshute Peak WSA would consist only of those improvements made to the area prior to WSA designation. Visual impacts to the Bluebell WSA would remain largely unchanged from the Proposed Action with the exception of removing the trough and diversion works from Sidehill Spring.

### **3.1.6.4. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, management actions would remain at the current level. By not installing the guzzlers or maintaining the troughs and fencing current impacts to visual resources would be limited to pre-existing “grandfathered” range improvements at each spring location where present. Any additional impacts by wild horses would not appreciably impact the visual resources at these sites.

## **3.1.7. Recreation**

### **3.1.7.1. Affected Environment**

The large size of the Bluebell and Goshute Peak WSAs and varied typography, offer outstanding opportunities for a primitive and unconfined type of recreation experience as well as experiences of solitude. The majority of the WSAs allow for unconfined freedom of movement due to the many drainages, ridges and peaks. Recreation activities available in the WSA include backpacking, camping, hiking, horseback riding, hunting, wildlife observation,

sightseeing/photography, and rock climbing. The variety of plants and animals in the WSAs are also of educational value (BLM, 1983).

### **3.1.7.2. Environmental Consequences of the Proposed Action**

Total disturbance for the seep and spring maintenance projects as well as the Guzzler installations is less than 0.59 acres in the project area of 124,831 acres representing a less than 0.00001 percent loss in possible recreation space for this project during the construction phase. Impacts to the visual component of naturalness of either WSA caused by the interruptions in line, color, form, or texture posed by the project would be subverted through project design. Materials would be selected to more closely resemble the surrounding terrain, vegetation or other natural features or paint schemes would be used to camouflage project impacts, and ground disturbances would be reclaimed and reseeded according to BLM standards.

Under the Proposed Action restrictions to the freedom of movement due to spring fencing and other such barriers would influence to the physical component of the Recreation Setting Characteristic that would potentially impact a participants' recreational experience (BLM, 2012). Project implementation would impact the visual aspect of recreational experiences for the long-term as materials used to improve the springs and seeps as well as the guzzlers would remain at those sites for the foreseeable future. Nevertheless, those impacts would be minor as the disturbance represents such a small percentage of the available acreage, and project designs limit visual and associated impacts to the extent possible. Additionally, the project would result in reliable and enhanced water sources which may benefit wildlife and dispersed recreational opportunities in the area.

### **3.1.7.3. Environmental Consequences of Alternative 2**

Impacts from Alternative 2 are expected to be similar to those described for the Proposed Action (Section 3.1.7.2, "Environmental Consequences of the Proposed Action" (p. 47)); however, the total surface disturbance associated with this alternative would be reduced to less than 0.09 acres. The minor long-term impacts associated with the guzzlers and development of Sidehill Spring would not occur; therefore, fewer impacts to primitive recreation would occur.

### **3.1.7.4. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, management actions would remain at the current level. Current recreational use would continue without modifications to the recreational landscape. With implementation of the No Action Alternative, impacts to recreation would gradually increase as water availability and wildlife abundance are reduced, thus reducing wildlife viewing opportunities by recreationists and other users of the WSAs. These impacts are expected to be long-term and moderate.

## **3.1.8. Special Status Species**

### **3.1.8.1. Affected Environment**

BLM policy (516 DM 6840; BLM, 2008b) defines Special Status Species to include:

*Chapter 3 Affected Environment and  
Environmental Consequences  
Special Status Species*

- Federally Threatened or Endangered Species: Any species that the USFWS has listed as an endangered or threatened species under the Endangered Species Act (ESA) throughout all or a significant portion of its range.
- Proposed Threatened or Endangered Species: Any species of fish, wildlife, or plant that is proposed in the Federal Register to be listed under Section 4 of the Endangered Species Act.
- Candidate Species: Plants and animals that have been studied and the Service has concluded that they should be proposed for addition to the Federal endangered and threatened species list.
- BLM Sensitive Species: Species that are 1) native species found on BLM-administrated lands for which BLM has the capability to significantly affect the conservation status of the species through management. 2) has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range. 3) depend on ecological refugia or specialized or unique habitats on BLM-administrated lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk. 4) are; designated candidate species, proposed species, and delisted species for the first five years following their delisting.
- State of Nevada Listed Species: State-protected animals that have been determined to meet BLM's Manual 6840 policy definition.

Actions that may affect species that are federally listed, or are proposed for listing, as threatened or endangered are treated as if the listing has been finalized and are subject to consultation or conference under Section 7 of the ESA. 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 for candidate species in BLM Manual 6840.06C (BLM, 2008b). 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 NAC 501.100 – 503.104;
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 a federally listed, proposed, or candidate species.

## **Special Status Plants**

The Nevada Natural Heritage Project (NNHP) maintains an Animal and Plant At-Risk Tracking List (At-Risk List) for Nevada. At risk species typically include those with federal or other Nevada agency status and those with global and or state ranks indicating some level of imperilment (NNHP, 2010). According to consultation with NNHP, no occurrences of special status plants are known to exist within the project area. Further, NNHP consultation did not identify potential habitat for other special status plant species (NNHP, 2011).

## **Special Status Wildlife**

The project area provides habitat for terrestrial and aquatic wildlife species designated as special status species. The special status wildlife species or species of local importance identified by

USFWS, BLM, and NDOW known to occur or with potential to occur in the project area are outlined in Table 3.4, “Special Status Species that May Be Present in the Project Area” (p. 49). Table 3.5, “Raptors That May Be Present in the Project Area” (p. 50) presents raptors that may be present in the project area. A complete migratory and native bird species list considered located in or near the project area and habitat associations is provided in Appendix B.

**Table 3.4. Special Status Species that May Be Present in the Project Area**

Common Name	Scientific Name	Status
<b>Mammals</b>		
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BLM Sensitive, State of Nevada Protected
Western small-footed myotis	<i>Myotis ciliolabrum</i>	BLM Sensitive
Pallid bat	<i>Antrozous pallidus</i>	BLM Sensitive, State of Nevada Protected
Spotted bat	<i>Euderma maculatum</i>	BLM Sensitive, State of Nevada Protected
Long-eared myotis	<i>Myotis evotis</i>	BLM Sensitive
Big brown bat	<i>Eptesicus fuscus</i>	BLM Sensitive
Silver-haired bat	<i>Lasionycteris noctivagans</i>	BLM Sensitive
Hoary bat	<i>Lasiurus cinereus</i>	BLM Sensitive
California myotis	<i>Myotis californicus</i>	BLM Sensitive
Little brown myotis	<i>Myotis lucifugus</i>	BLM Sensitive
Fringed myotis	<i>Myotis thysanodes</i>	BLM Sensitive
Yuma myotis	<i>Myotis yumanensis</i>	BLM Sensitive
Western pipistrelle	<i>Pipistrellus hesperus</i>	BLM Sensitive
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	BLM Sensitive
Long-legged myotis	<i>Myotis volans</i>	BLM Sensitive
Dark kangaroo mouse	<i>Microdipodops megacephalus</i>	BLM Sensitive
Bighorn sheep	<i>Ovis canadensis</i>	BLM Sensitive
<b>Raptors</b>		
Western burrowing owl	<i>Athene cucularia hypugaea</i>	BLM Sensitive
Golden eagle	<i>Aquila chrysaetos</i>	BLM Sensitive
Ferruginous hawk	<i>Buteo regalis</i>	BLM Sensitive
Swainson's hawk	<i>Buteo swainsoni</i>	BLM Sensitive
Northern goshawk	<i>Accipiter gentilis</i>	BLM Sensitive, State of Nevada Protected
Peregrine falcon	<i>Falco peregrinus</i>	BLM Sensitive, State of Nevada Protected
<b>Other Birds</b>		
Greater sage-grouse	<i>Centrocercus urophasianus</i>	USFWS Sensitive BLM Sensitive NNHP Sensitive
<b>Sensitive Migratory Birds</b>		
Black rosy-finch	<i>Leucosticte atrata</i>	BLM Sensitive
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	Statewide Sensitive
Brewer's sparrow	<i>Spizella breweri</i>	BLM Sensitive
Loggerhead shrike	<i>Lanius ludovicianus</i>	BLM Sensitive
Lewis woodpecker	<i>Melanerpes lewis</i>	BLM Sensitive
Sage thrasher	<i>Oreoscoptes montanus</i>	BLM Sensitive
<b>Amphibians</b>		
Northern leopard frog	<i>Rana pipiens</i>	BLM Sensitive

**Table 3.5. Raptors That May Be Present in the Project Area**

Common Name	Scientific Name	Status
Cooper's hawk	<i>Accipiter cooperii</i>	Identified by NDOW
American kestrel	<i>Falco sparverius</i>	Identified by NDOW
Rough-legged hawk	<i>Buteo lagopus</i>	Identified by NDOW
Red-tailed hawk	<i>Buteo jamaicensis</i>	Identified by NDOW
Great horned owl	<i>Bubo virginianus</i>	Identified by NDOW

Suitable habitat for greater sage-grouse, a BLM sensitive species, is present within the project area (Figure 15). The Goshute and Toano ranges are on the eastern edge of the East Valley Population Management Unit (PMU) and very few birds have been documented in the area. No known leks are within the project area.

A large portion of the Goshute and Toano ranges is classified as greater sage-grouse “non-habitat”, primarily due to the dominant overstory of pinyon and juniper with very few open stands of sagebrush with desired understory species. However, greater sage-grouse habitat does exist within the project area and has been classified as General Habitat Management Area (GHMA). The GHMA habitat within the project area is fragmented and disjunct from other sections of GHMA habitat. The habitat determination of GHMA is defined as occupied seasonal or year-round habitat that includes areas of higher quality habitat that may lack a key component such as vegetative structure or herbaceous understory, which prevent it from meeting Priority Habitat Management Area (PHMA) criteria. PHMA has the highest conservation value to maintaining sustainable greater sage-grouse populations and includes breeding, brood-rearing, and winter concentration areas.

Each of the guzzler sites (Guzzler #1 and Guzzler #2) is located within non-habitat on the western aspect of the Goshute and Toano ranges. Additionally, Morgan, Sidehill, and Rock Springs, Tunnel as well as Warburton Seep, are located in non-habitat. None of the guzzlers or springs are located in GHMA or PHMA, however some of the access roads to the guzzlers and springs do cross some GHMA and Other Habitat Management Areas (OHMA)

Limited sightings of greater sage-grouse have occurred within the Goshute Mountains, outside of the project area. Nesting and brood-rearing habitat is not known to occur within or adjacent to the project area and the nearest known lek is approximately 13 miles to the northwest (C. McAdoo, Nevada Department of Wildlife, 2012). Greater sage-grouse was not identified as a species of concern during agency consultation with NDOW, USFWS, and NNHP (Appendix C) because of the limited use, lack of PHMA, and the low acreages of GHMA habitat within the project area (Figure 15).

Any greater sage-grouse occupying the PGMA habitat as described above would likely utilize the aforementioned springs, due to the limited availability of perennial water sources within PGMA habitat in the Goshute and Toano ranges.

The Goshutes and Toano ranges have both resident and migratory populations of golden eagles (*Aquila chrysaetos*). Active nests are known to occur within the project area. Within a four-mile buffer of the spring and seep sites discussed in the Proposed Action, one active nest is known to occur and is four miles from the closest spring within the Proposed Action. Five active nests are known to occur within a 10-mile buffer around the seeps and springs addressed in the Proposed Action, three of which are at the edge of the 10-mile buffer and the remaining two are within five miles. For the two proposed guzzler sites, no active golden eagle nests are known to occur

within a four-mile buffer around each of the sites. There are, however, five active nests within a 10-mile buffer of the guzzlers. Three of which are also within 10 miles of the springs and the remaining two nests are on the outer edge of the 10-mile buffer.

Aerial and ground surveys conducted by NDOW detected two ferruginous hawk (*Buteo regalis*) nests within a four-mile buffer around the seep and spring sites and occurred on the western aspect of the range. Three ferruginous hawk nests were also identified within a four-mile buffer around the guzzler sites. No additional nests were detected at a 10-mile buffer for either the seep and springs nor the guzzler sites.

Based on yearly surveys conducted by NDOW, there are no known nest locations for the Swainson's hawk (*Buteo swainsoni*), northern goshawk (*Accipiter gentilis*), or Peregrine falcon (*Falco peregrinus*) within the project area, or within a 10-mile buffer of the seep, springs, and guzzler sites discussed in the Proposed Action. Although there are no known nests within the project area, NDOW has identified that Swainson's hawk, Peregrine falcon, Cooper's hawk (*Accipiter cooperii*), American kestrel (*Falco sparverius*), rough-legged hawk (*Buteo lagopus*), great horned owl (*Bubo virginianus*) have been observed or are likely to be present within the vicinity of the project area. Northern goshawk has been observed near Bluebell Spring.

The BLM has identified that the western burrowing owl (*Athene cunicularia hypugaea*) has the potential to occur within or adjacent to the project area. The western burrowing owl is a small (9 to 10 inches) ground-dwelling owl with long legs, white chin stripe, round head, and stubby tail (NatureServe, 2012). It often nests in burrows that have been abandoned by other burrowing mammals, and usually in open areas with good surrounding visibility. Burrowing owls are active throughout the day; however, activity peaks in the morning and evening. It occupies northern Nevada in the spring and summer months and spends winters in the southwestern United States (Udvardy, 1994).

According to the BLM, several sensitive migratory bird species are known to occur within or adjacent to the project area. These species and their associated habitats within the project area are described below.

Lewis woodpecker (*Melanerpes lewis*) has the potential to be found in sagebrush, mountain riparian, and salt desert shrub communities. The sage thrasher (*Oreoscoptes montanus*) and Brewer's sparrow (*Spizella breweri*) have the potential to be found in sagebrush communities. Black rosy-finch (*Leucosticte atrata*) has the potential to be found in sagebrush, mountain shrub, and cliff and talus communities. The pinyon jay (*Gymnorhinus cyanocephalus*) is found only in the pinyon and juniper communities.

NDOW has documented Townsend's big-eared bat at Sidehill Spring. Several other bat species may be present within the project area including pallid bat, spotted bat, western small-footed myotis, and long-eared myotis. These bat species may forage at the existing springs and seeps associated with the project.

Isolated sightings of Rocky Mountain bighorn sheep have occurred in the northernmost portion of the Goshute Mountains; however, those individuals were most likely associated with the Unit 091 herd or the Unit 103 herd. Further, viable populations of bighorn sheep do not currently exist in the Toano Range and Goshute Mountains.

Known occurrences of mitered vertigo (*Vertigo concinnula*), Schell Creek mountain snail (*Oreohelix nevadensis*), and Lyrate mountainsnail (*Oreohelix haydenii*) were also identified

through consultation with NDOW. These species are not currently considered special status; however, they are being tracked on the At-Risk List maintained by NNHP.

### **3.1.8.2. Environmental Consequences of the Proposed Action**

Under the Proposed Action, up to 0.59 acres of disturbance would occur. Negative impacts to special status species are not expected from the Proposed Action as activities would be short-term and create minimal localized disturbance within the larger habitat area. Implementation of the EPMS discussed in Section 2.1.4, “Environmental Protection Measures” (p. 21), would prevent unnecessary or undue degradation to riparian habitat areas. Indirect negative impacts are expected to be negligible and temporary in nature, and would be associated with the increased activity and human presence within special status species habitat during the implementation phase of the Proposed Action (a few days). More specifically, during the period of temporary loss of habitat, impacts would be negligible because disturbance would be dispersed and large tracks of undisturbed suitable upland habitat would be available in the surrounding area for any animals which dispersed as a result of the temporary activity.

However, long-term positive impacts from the Proposed Action would be realized by special status species. More specifically, by protecting the seep and spring sites from overutilization, an increase in habitat quality, floral and faunal diversity, prey base (including insects, small mammals, small birds), forage quality, and sustainability of the riparian systems would occur. These riparian systems are critically relied upon by the above-mentioned special status species, for both forage, cover, and as a water source in an area with limited perennial water and riparian areas.

Impacts from the water developments (Guzzlers #1 and #2) are expected to be negligible and temporary in nature, and would be associated with the increased activity and human presence within special status species habitat during the implementation phase of the Proposed Action (a few days). More specifically, during the period of temporary loss of habitat, impacts would be negligible because disturbance would be dispersed and large tracks of undisturbed suitable upland habitat would be available in the surrounding area for animals, which disperse as a result of the temporary activity.

The water developments would, however, provide long-term benefits to wildlife and wilderness values by providing a reliable water source in unoccupied or low-density habitats, which are currently water limited, but otherwise suitable for a wide array of wildlife species. An increase in species abundance and diversity would likely occur as a result of the available water. The Proposed Action may increase the potential prey base for resident and migrating sensitive raptor species, as identified in Table 3.5, “Raptors That May Be Present in the Project Area” (p. 50), as well as an increase foraging areas (insects over water) for the sensitive bat species.

The Proposed Action is in compliance with the Eagle Protection Act. No nest abandonment or eagle mortality would result due to implementation of the Proposed Action.

With implementation of the Proposed Action overall impacts to special status species are expected to be short-term and minor.

### **3.1.8.3. Environmental Consequences of Alternative 2**

The type of impacts to special status species habitat from Alternative 2 would be similar to the Proposed Action; however, total amount of surface disturbance under this alternative would be

reduced from less than 0.59 acres to less than 0.09 acres without construction of the guzzlers or installation of the water diversion and trough at Sidehill Spring. Therefore, less surface disturbance would result from this alternative. The positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers to special status species habitat as described in the Proposed Action (Section 3.1.8.2, “Environmental Consequences of the Proposed Action” (p. 52)) would not occur under this alternative.

### 3.1.8.4. Environmental Consequences of the No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. There would not be a direct loss of up to 0.59 acres of habitat utilized by sensitive status species. The No Action Alternative would not allow for protection of the target springs, thereby increasing riparian functionality and improving vegetation, which would in turn improve habitat for many sensitive status species including mammals, migratory birds, and raptors. The current conditions at the springs are impacted by heavy use of wild horses. With implementation of the No Action Alternative impacts to special status species, specifically their habitat, are expected to be long-term and major.

## 3.1.9. Vegetation and Soils

### 3.1.9.1. Affected Environment

Within the Goshute and Toano ranges, sagebrush shrubland with scattered big sagebrush shrubland and mixed salt desert shrub are present at lower elevations. Progressing upslope is pinyon-juniper woodland typical of high desert mountain vegetation in northern Nevada. Scattered montane sagebrush steppe and mountain mahogany are present at higher elevations with rocky outcrops and cliffs. The location of an individual vegetation community depends on several factors including elevation, soil type and depth, slope, aspect, and precipitation. The vegetation communities present in the project area are shown in Table 3.6, “Vegetation Communities in the Project Area” (p. 53) and on Figure 11 and are discussed below.

**Table 3.6. Vegetation Communities in the Project Area**

Plant Community Name	Elevation Range (feet AMSL)	Acres	Percent of Project Area
Pinyon-juniper woodland	6,500-7,500	75,920	61
Xeric mixed sagebrush shrubland	5,800-6,500	33,795	27
Montane sagebrush steppe	7,000-9,500	7,221	6
Big sagebrush shrubland	5,800-6,500	3,275	3
Mountain mahogany	7,000-9,500	1,889	2
Mixed salt desert shrub	6,500-7,500	548	<1
Cliff and canyon	6,500-8,500	852	<1
Foothill and Lower Montane Riparian Woodland and Shrubland	6,800-8,500	193	<1
Other	5,800-9,000	830	<1
<b>Total</b>		<b>124,523</b>	<b>100</b>

Land cover communities in the southwestern United States have been mapped as part of the Southwest Regional Gap Analysis Project (SWRGAP) (USGS, 2004). According to SWRGAP, eight land cover communities plus an “other” category occur within the proposed project area.

Great Basin pinyon-juniper woodland is the dominant vegetation community type, covering 61 percent of the project area. This community ranges from 6,500 to 7,500 feet AMSL and can be found on all aspects, occurring on deep to stony soils. The vegetation community is dominated by a mix of singleleaf pinyon (*Pinus monophylla*) and Utah juniper. The understory is sparse and is comprised mostly of snowberry (*Symphoricarpos mollis*), arrowleaf balsamroot (*Balsamorhiza sagittata*), and bulbous bluegrass (*Poa bulbosa*).

Great Basin foothill and lower montane riparian woodland and shrubland covers less than one percent of the project area. This community occurs within a broad elevation range from approximately 5,800 to 9,000 feet AMSL. The variety of plant associations connected to this system reflects elevation, stream gradient, floodplain width, and flooding events. Dominant trees may include white fir (*Abies concolor*), grey alder (*Alnus incana*), red birch (*Betula occidentalis*), narrowleaf cottonwood (*Populus angustifolia*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Fremont cottonwood (*Populus fremontii*), red willow (*Salix laevigata*), Goodding's willow (*Salix gooddingii*), and Douglas fir (*Pseudotsuga menziesii*). Dominant shrubs include silver sagebrush (*Artemisia cana*), redosier dogwood (*Cornus sericea*), narrowleaf willow (*Salix exigua*), arroyo willow (*Salix lasiolepis*), Lemmon's willow (*Salix lemmonii*), or yellow willow (*Salix lutea*). Herbaceous layers are often dominated by species of sedge (*Carex* spp.) and rush (*Juncus* spp.), and perennial grasses and mesic forbs such as tufted hairgrass (*Deschampsia cespitosa*), slender wheatgrass (*Elymus trachycaulus*), fowl mannagrass (*Glyceria striata*), Rocky Mountain iris (*Iris missouriensis*), False Solomon's seal (*Maianthemum stellatum*), or Fendler's meadow-rue (*Thalictrum fendleri*). Introduced forage species such as creeping bentgrass (*Agrostis stolonifera*), Kentucky bluegrass (*Poa pratensis*), Timothy grass (*Phleum pretense*), and cheatgrass are often present in disturbed stands. These are disturbance-driven systems that require flooding, scour and deposition for germination and maintenance.

Great Basin xeric mixed sagebrush shrubland vegetation community covers 27 percent of the project area, consisting of mostly rocky outcrops with shallow, rocky soils. It occurs on ridgelines and gentle slopes between 5,800 and 6,500 feet AMSL. Sites are dry and wind-swept, with shallow rocky volcanic soils. Dominant shrubs include little sagebrush (*Artemisia arbuscula*) and may include other sagebrush species. The understory is dominated by stemless mock goldenweed (*Stenotus acaulis*), squirreltail (*Elymus elymoides*), and Sandberg bluegrass (*Poa secunda*).

Inter-mountain montane sagebrush steppe occurs on six percent of the project area. This community ranges from 7,000 feet to 9,500 feet AMSL and can be found on all aspects, occurring on deep-soiled and stony flats, ridges, nearly flat ridgetops, and mountain slopes. Dominant shrubs include mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), big sagebrush (*Artemisia tridentata* ssp.), and other sagebrush species. Other shrub species include currant (*Ribes* spp.), serviceberry (*Amelanchier* spp.), and antelope bitterbrush (*Purshia tridentata*). Dominant grasses include Sandberg bluegrass, fescue (*Festuca* spp.), and brome (*Bromus* spp.).

Inter-mountain basins big sagebrush shrubland occurs on three percent of the project area between 5,800 and 6,500 feet AMSL occurring in deep, well-drained and non-saline soils. Sites occur on broad basins between mountain ranges and on plains and foothills. Scattered juniper may be present on some sites. Dominant shrubs consist of Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), big sagebrush, and various other sagebrush species, as well as

rubber rabbitbrush, yellow rabbitbrush, and antelope bitterbrush. Dominant grasses include Indian ricegrass (*Achnatherum hymenoides*), blue grama (*Bouteloua gracilis*), and thickspike wheatgrass (*Elymus lanceolatus*).

Inter-mountain basins mountain mahogany woodland and shrubland occurs on two percent of the project area. This community ranges from 7,000 to 9,500 feet AMSL and can be found on rocky outcrops or escarpments and forms small to large patch stands in forested areas. Most stands occur as shrublands on ridges and steep rimrock slopes, but it may occur as a small tree in steppe areas. Sites are dominated by shrubs and trees such as curl-leaf mountain mahogany (*Cercocarpus ledifolius*), mountain big sagebrush, antelope bitterbrush, snowberry, and kinnikinnick (*Arctostaphylos uva-ursi*). Small juniper or pine trees may occur.

The inter-mountain basins cliff and canyon vegetation community covers less than one percent of the project area between 6,500 and 8,500 feet AMSL. Sites usually occur on steep cliff faces, narrow canyons, smaller rock outcrops, as well as rock screes and talus slopes. Vegetation may include species of fir, pine, juniper, sagebrush, antelope bitterbrush, curl-leaf mountain mahogany, and ephedra (*Ephedra* ssp.).

Inter-mountain basins mixed salt desert shrub occurs on less than one percent of the project on lower hillslopes between 6,500 and 7,500 feet AMSL and is usually on saline and calcareous soils. These sites typically consist of open canopied shrublands of typically saline basins, alluvial slopes and plains. Dominant shrubs usually consist of one or more species within the *Atriplex* genus, shadscale, and Wyoming big sagebrush in some cases. Greasewood (*Sarcobatus*) is usually absent from these sites. Grass species usually consist of Indian ricegrass, thickspike wheatgrass, western wheatgrass (*Pascopyrum smithii*), and grama species.

### **3.1.9.2. Environmental Consequences of the Proposed Action**

There would be a direct loss of up to 0.59 acres of vegetation and soils removed with implementation of the Proposed Action. The 0.59 acres of disturbance to vegetation and soils represents a very small percentage of the habitat type locally or regionally available. Indirect impacts include the potential for non-native invasive and noxious species to establish in disturbed areas. With proper reclamation and implementation of the EPMS as outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), impacts to vegetation and soils are expected to be short-term and minor.

### **3.1.9.3. Environmental Consequences of Alternative 2**

The type of impacts to vegetation from Alternative 2 would be similar to the Proposed Action; however, total amount of surface disturbance under this alternative would be reduced to less than 0.09 acres without construction of the guzzlers or installation of the water diversion and trough at Sidehill Spring.

### **3.1.9.4. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, management actions would remain at the current level. There would not be a direct loss of 0.59 acres of vegetation and soils. The No Action Alternative would not allow for protection of the target springs, thereby increasing riparian non-functionality and decreasing vegetation, which would in turn impact wildlife habitat. The current conditions at

the springs are impacted by heavy use of wild horses. With implementation of the No Action Alternative, impacts to vegetation and soils are expected to be long-term and major.

### 3.1.10. Wildlife

#### 3.1.10.1. Affected Environment

The project area contains five key habitats for wildlife as defined in the *Nevada Wildlife Action Plan* (WAPT, 2006) including sagebrush, lower montane woodlands, cliffs and canyons, intermountain shrub, and intermountain rivers and streams and springs. Sagebrush provides nesting, cover and structure, protection from predators, thermal cover, and foraging for wildlife. Lower montane woodlands provide nesting cover, structure, and cavities, protection from predators, thermal cover, and foraging for wildlife. Springs provide water availability and food resources to wildlife. Cliffs and canyons provide structure for ledges and crevices for nesting, roosting, or denning, protection from predators, protection from the summer sun, and areas for foraging. Intermountain shrub and rivers and streams provide nesting, cover, protection, and forage for wildlife as well (WAPT, 2006). Both the Bluebell and Goshute Peak WSAs lie within NDOW Management Unit 106. A complete list of wildlife species occurring or having potential to occur within NDOW Management Unit 106 was provided by NDOW and is included as Appendix B.

##### Reptiles

Reptile species including western fence lizard (*Sceloporus occidentalis*), desert horned lizard (*Phrynosoma platyrhinos*), Great Basin collared lizard (*Crotaphytus bicinctores*), Great Basin rattlesnake (*Crotalus viridis* ssp. *lutosus*), western terrestrial garter snake (*Thamnophis elegans*), and Great Basin spadefoot toad (*Spea intermontana*) are known to reside in the project area.

##### Non-Sensitive Birds

A complete list of birds considered located in or near the project area and habitat associations is provided as Appendix B.

##### Raptors

Each fall between 5,000 and 6,000 raptors including northern goshawk, golden eagle, and bald eagle are known to migrate south over the Bluebell WSA (BLM, 1981). Several raptor species have been documented within the Goshute Mountains including northern goshawk, Cooper's hawk, great horned owl, peregrine falcon, golden eagle, and Swainson's hawk. Additional raptors such as American kestrel, rough-legged hawk, and red-tailed hawk (*Buteo jamaicensis*) are also likely to be present (NDOW, 2011). Many raptor species in Nevada are special status species and are addressed in Section 3.1.8, "Special Status Species" (p. 47).

##### Mammals

Smaller mammals such as bobcat (*Lynx rufus*), American badger (*Taxidea taxus*), coyote (*Canis latrans*), red fox, (*Vulpes vulva*), kit fox (*Vulpes velox*), black-tailed jackrabbit (*Lepus californicus*), and mountain cottontail (*Sylvilagus nuttalli*) are known to reside in the project area. Additionally, various squirrels, chipmunks, gophers, kangaroo rodents, mice, rats, and voles are known to reside in the project area. Large mammals in the project area are predominantly game species and are discussed below. A number of bat species are known to reside within the

project area. Because bat species in Nevada are primarily special status species, they have been addressed in Section 3.1.8, “Special Status Species” (p. 47). Data on mammals was gathered from past surveys and observations from NDOW.

### Game Species

Big game species known to reside within the project area (Figure 16) include mule deer, pronghorn antelope, Rocky Mountain elk, and mountain lion (*Puma concolor*). Isolated sightings of bighorn sheep have occurred in the Goshute Mountains and the species is discussed in the special status species Section 3.1.8, “Special Status Species” (p. 47). Seasonal ranges and habitat types of these big game species are presented in Figure 16. Small game species known to reside within the project area include chukar (*Alectoris chukar*), American crow (*Corvus brachyrhynchos*) and mourning dove (*Zenaida macroura*).

The project is located within NDOW's Management Unit 106, which is managed for mule deer, Rocky Mountain elk, and pronghorn antelope. The mule deer population associated with the project area is managed as part of Units 101-108: southern Elko and northwestern White Pine counties. According to the 2011-2012 NDOW Big Game Status Book, this mule deer population accounts for over 20 percent of Nevada's total mule deer population, and is the largest in the state. The herd is stable but experiencing repressed fawn recruitment. The factors contributing to this are suspected to be related to herd density and resource availability. A mule deer survivorship study is currently taking place within this management unit that is aimed at identifying age and sex specific mortality rates; defining summer, winter, and transitional ranges; and determining cost and benefits of differing mule deer migration strategies (NDOW, 2012).

The pronghorn antelope population associated with this project area is managed as part of Units 078, 105-107, and 121: southeastern Elko and central White Pine counties. This pronghorn antelope population was estimated at 1,000 individuals, which was only 70 percent of the long-term average but consistent with the previous year's estimate. Fawn production was noted to be below the long-term average, which accounts for the stagnant nature of this population (NDOW, 2012).

The Rocky Mountain elk population associated with this project are managed as part of Units 078, a portion of 104, 105-107, and 109; Spruce Mountain: Elko County. Frequent observations of elk in Unit 106 indicate this herd is still expanding its distribution and range. The population objective for this herd is 340 elk, which NDOW is working toward achieving through harvest strategies. The long-term average calf ratio remains relatively low, though the long-term trend for this herd depicts positive population growth within this unit group. The current population estimate of 350 animals.

Year-round mountain lion habitat exists throughout the project area. Population numbers are unknown, but 87 lions were harvested in northeastern Nevada in 2011, including the Goshute and Toano ranges (Professional conversation with McAdoo, 2012). The primary prey base species for mountain lions in the Goshute and Toano ranges include deer and elk. Small prey also exists such as rabbits and rodents.

### 3.1.10.2. Environmental Consequences of the Proposed Action

The Proposed Action would create up to 0.59 acres of disturbance primarily to sagebrush/grassland wildlife habitat within the project area. This habitat is abundant and widespread throughout the region of the project area. Animals displaced as a result of project disturbance would likely

relocate to adjacent undisturbed habitat, which would have a negligible effect where the habitat is not at carrying capacity. If displaced animals move into habitat already at carrying capacity, there could be an increased mortality rate among the displaced individuals and an impact to the resident population. This in turn would cause a reduction in viable young at least for the next breeding season in the area. The loss of habitat as a result of the project would be short-term. Habitat would be restored following successful reclamation efforts, which is expected to return the area to productive wildlife habitat.

As a result of the design features of the Proposed Action, water will be available to wildlife at all times of the year, thus no direct impact outside of the construction phase is expected to occur. Furthermore, the increased vegetative diversity and functioning conditions of the riparian areas expected as a result of the Proposed Action would generate positive impacts to wildlife species by restoring degraded habitats within riparian areas, which had been previously lost due to over-utilization. Increased riparian habitat as a result of the Proposed Action would result in an increase in species diversity and abundance. Similarly, the proposed two guzzlers would create additional water sources that would allow otherwise suitable habitat to be utilized by wildlife and would increase species diversity and abundance in those portions of the range. The Proposed Action would increase habitat function and diversity.

Additional impacts to other wildlife would also be expected from short-term increase in noise and human activity during construction. Species such as deer, elk, antelope, small mammals, and birds may avoid the available habitat around the project disturbance. However, there is an abundance of similar habitat surrounding the project area. Additional short-term impacts to wildlife as a result of increased traffic along access roads would be minimized by the implementation of the EPMs as outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21). With implementation of the EPMs and the reclamation plan, impacts to wildlife are expected to be minor and short-term.

### **3.1.10.3. Environmental Consequences of Alternative 2**

The type of impacts to wildlife from Alternative 2 would be similar to the Proposed Action; however, total amount of surface disturbance under this alternative would be reduced to less than 0.09 acres without construction of the guzzlers or installation of the water diversion and trough at Sidehill Spring. The positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers to wildlife as described in the Environmental Consequences of the Proposed Action (Section 3.1.10.2, “Environmental Consequences of the Proposed Action” (p. 57)) would not occur under this alternative.

### **3.1.10.4. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, management actions would remain at the current level. There would not be a direct loss of 0.59 acres of habitat utilized by wildlife species. The No Action Alternative would not allow for protection of the target springs, thereby increasing riparian non-functionality and decreasing vegetation, which would impact habitat for wildlife species. The current conditions at the springs are impacted by heavy use of wild horses. With implementation of the No Action Alternative, impacts to wildlife species, specifically their habitat, are expected to be long-term and major.

### 3.1.11. Wild Horses

#### 3.1.11.1. Affected Environment

The project area is located in the Goshute HMA (Figure 17). In the 1940s, an individual, Gilbert Macaulay, was given some horses from a ranch that he worked on north of Wendover (Photo 11). He brought the horses to the Goshute and Toano ranges and ran horses until end of the claiming period (Portwood recording, 2011). Many of the horses are descended from the horses that he brought into the Goshute/Toano Ranges.



**Photo 11 Macaulay Horse Trap 1974-1975**

Wild horses protected under the Wild Free-Roaming Horse and Burro Act of 1971 (WFRHBA), exist within the project area. Under the provisions of the WFRHBA, a thriving natural ecological balance among wild horse and burro populations, domestic livestock, wildlife and vegetation must be achieved. Wild horses are actively managed in HMAs with Appropriate Management Levels (AMLs). In Nevada, AMLs of wild horses and burros are generally determined through the multiple-use decision process. Through land use planning, BLM evaluates each HMA to determine if it has adequate food, water, cover and space to sustain healthy and diverse wild horse and burro populations over the long-term (NWSA, 2012).

In establishing the AML, BLM relies on an intensive monitoring program over several years involving studies of grazing utilization, trend in range condition, actual use, precipitation (climate) and other factors. AML is based on consideration of wildlife, permitted livestock, and wild horses and burros in the area. BLM sets AMLs with public involvement through an in-depth environmental analysis and decision process.

AML is defined as the maximum number of wild horses that can be sustained within a designated HMA, which achieves and maintains a thriving natural ecological balance keeping within the multiple-use management concept for the area.

The AML range for the Goshute HMA is between 74 and 123 and was established between 1998 and 2001 through public decision-making processes that culminated in the FMUDs following an in-depth analysis of monitoring data collected over several years. Table 3.7, “Appropriate

Management Level for the Goshute HMA” (p. 60) shows the AML by allotment and a summary of allotment and related decisions for the Goshute HMA.

**Table 3.7. Appropriate Management Level for the Goshute HMA**

Appropriate Management Level for the Goshute HMA	
Allotment	AML by Allotment
East Big Springs <sup>a</sup>	34-56
Lead Hills <sup>b</sup>	Incidental
Leppy Hills <sup>b</sup>	5-8
Spruce <sup>c</sup>	29-50
UT/NV North <sup>b</sup>	5-9
White Horse <sup>b</sup>	Incidental
Total	74-123 <sup>d</sup>
As per current Washington Office direction, AML is expressed as a single number but the population is reduced below AML during a gather. The population is expected to be at or above AML at the time of the next gather (in approximately four years).	
The estimated population of the Goshute HMA is 668 wild horses ( <a href="http://www.blm.gov/wo/st/en/prog/whbprogram.html">http://www.blm.gov/wo/st/en/prog/whbprogram.html</a> ).	

<sup>a</sup>AML established through the Big Springs Final Multiple Use Decision in September 2002.

<sup>b</sup>AML established through the Sheep Allotment Complex Final Multiple Use Decision in October 2001.

<sup>c</sup>AML established through the Spruce Final Multiple Use Decision in 1998 and modified in 2002 by Stipulated Agreement.

<sup>d</sup>Difference due to rounding.

Without proper management, rangelands may be damaged. Desirable native species may be replaced by invasive species. These weedy species out-compete native species, further reducing vegetation diversity. Under these conditions, the rangelands may become unable to produce forage and habitat for the many animals that live there. Healthy rangelands are the foundation for healthy wild horse and wildlife populations.

The January 2011 Notice of Action (Section 1.3, “Notice of Action” (p. 10)) disclosed that NDOW identified riparian areas within the Bluebell and Goshute Peak WSAs (within Goshute HMA) that had been negatively impacted by wild horses and that some of the perennial waters were at risk of being lost due to the consistent trampling and over-use by wild horses (Chapter 1, *Introduction* (p. 5)). There are 23 perennial springs within the Goshute HMA and implementing the actions brought forward in the proposal would protect the springs most impacted by wild horses in the Bluebell and Goshute Peak WSAs.

### 3.1.11.2. Environmental Consequences of the Proposed Action

The proposed action would result in the loss of less than one percent of the acreages available to wild horses in the Goshute HMA.

Water would be available for wild horses outside of the temporary fences installed to protect perennial spring sources with the exception of Erickson Spring (Photo 12). Currently, the water does not flow past the historic trap site below Erickson Spring, but it is anticipated that as the spring recovers water would flow below the fence that would protect the spring and historic trap site below the spring. This would have a short-term impact on wild horses that use the spring.

Implementation of the Proposed Action has the potential to improve spring sources that have historically provided water for wild horses. During periods of construction (between one and five days) and annual maintenance, wild horses would be temporarily displaced. However,

post-implementation, water would be available to wild horses outside the exclusionary fence within a reasonable vicinity to where they had historically used it, thus impacts to wild horses are expected to be short-term and negligible.

There are 23 perennial springs within the Goshute HMA and this proposal would protect the springs most impacted by wild horses in the Bluebell and Goshute Peak WSAs.



**Photo 12 Erickson Spring (2011)**

### **3.1.11.3. Environmental Consequences of Alternative 2**

Under Alternative 2, the impacts would be the same as outlined in Section 3.1.11.2, “Environmental Consequences of the Proposed Action” (p. 60).

### **3.1.11.4. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, the springs would continue to be impacted by wild horses. The No Action Alternative would not allow for protection of the target springs. Riparian functionality would continue to decrease thereby not improving wildlife habitat. If the No Action Alternative occurs, impacts would most likely continue and result in less available water for consumptive uses. With implementation of the No Action Alternative, impacts to wild horses are expected to be long-term and major.

## **3.1.12. Wilderness and Wilderness Study Areas**

### **3.1.12.1. Affected Environment**

The BLM Elko District Office manages 10 WSAs totaling 303,572 acres. The Wells Field Office manages the Bluebell and Goshute Peak WSAs. Section 1.2, “Conformance with Applicable Policies and Plans” (p. 8) summarizes the BLM Manual 6330 – Management of BLM Wilderness Study Areas guidelines to determine what activities can occur within WSAs and Section 603(c) of FLPMA, which provides direction to the BLM on the management of WSAs.

The project area comprises the Bluebell WSA and Goshute Peak WSAs which lie within the Goshute Mountains. The 54,575-acre Bluebell WSA is approximately seven miles wide, 11 miles long and consists primarily of the southern half of the Toano Range.

The Bluebell WSA exhibits steep mountainous terrain with many canyons radiating from the central line of mountain peaks. At the lower elevations, the area supports a pinyon-juniper ecosystem, while small stands of mixed conifer, including bristlecone pine, can be found at higher elevations (BLM, 2013a).

The imprints of man are generally confined to the lower elevations and are unnoticeable in the WSA as a whole (BLM, 2013a).

The Goshute Peak WSA exhibits extremely rugged and densely wooded drainages and outstanding opportunities for solitude. White fir, limber pine, bristlecone pine, and mountain mahogany add variety to the vegetative screening and to the solitude. Opportunities for primitive and unconfined recreation are outstanding. The Goshute Peak WSA has many drainages, ridges and peaks, provides outstanding opportunities for backpacking, hunting, horseback riding, hiking, rock climbing, fossil collecting and wildlife observation (BLM, 2013a).

### **3.1.12.2. Environmental Consequences of the Proposed Action**

The Proposed Action includes constructing fences around riparian areas to improve and rehabilitate perennial water sources, repairing or modifying existing troughs, and installing two guzzlers (Section 2.1, “Proposed Action:” (p. 13)). There would be a direct loss of less than 0.59 acres of habitat removed with implementation of the Proposed Action. The loss would be temporary in nature as it is expected that spring sites will improve over time. There would be an impact to wilderness resources that would be moderate in severity and temporary in duration during the construction phase of the project, and to the roadless condition and primitive and unconfined recreation opportunities of the WSAs. This impact would resolve to negligible in severity and long-term in duration after reclamation.

However, implementation of the Proposed Action has the potential to enhance wilderness values and support healthy wildlife populations by improving spring sources that have historically provided water for wildlife.

Other impacts from the maintenance and installation activities to wilderness values would likewise be temporary and per the project design be reclaimed as soon as the work would be completed. The limited duration of the impacts renders them negligible as they would be short-term and minor.

### **3.1.12.3. Environmental Consequences of Alternative 2**

Impacts from Alternative 2 to WSAs are expected to be similar to those described for the Proposed Action (Section 3.1.12.2, “Environmental Consequences of the Proposed Action” (p. 62)); however, the total surface disturbance associated with this alternative would be reduced to less than 0.09 acres. The impacts associated with the guzzlers would not occur and all disturbances would be confined to the Bluebell WSA; therefore, fewer impacts to solitude, primitive and unconfined recreational opportunities, and naturalness would occur. Impacts to wilderness under this alternative would be moderate and short-term during construction and negligible and long-term after reclamation.

### 3.1.12.4. Environmental Consequences of the No Action Alternative

Under the No Action Alternative the springs would continue to deteriorate possibly impacting wilderness characteristics. The No Action Alternative would not allow for riparian improvements including repairing or replacing existing grandfathered troughs and constructing water catchments.

### 3.1.13. Common to all Alternatives and Resources

Although climate change has been determined present and not affected by the project, climate change may have an impact on the existing and future conditions for any alternative that is selected. Therefore climate change has been determined a resource common to all alternatives and resources. According to the BLM's instructional Memorandum 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 following events can result in positive or negative direct, indirect, and cumulative impacts with any of the alternatives. The summary below was identified during a literature review on climate change to comply with directives that BLM consider the impacts of climate change to projects that occur within the BLM Elko District. This information is taken from an Elko District Inter-office Memo titled Climate Change and the BLM Elko District (Anne, 2013).

Predictions as determined from peer reviewed literature from this document determined applicable to the Elko District include 1) Temperature increase of 1 to 2 degree F (Karl et al., 2009) between now and 2020 and 2) Precipitation could vary from no change to as much as 15 percent less than present (Karl et al., 2009; Meehl, 2007; Timmerman et al., 1999).

The Council on Environmental Quality notes that *agencies should recognize the scientific limits of their ability to accurately predict climate change effects, especially of a short-term nature, and not devote effort to analyzing wholly speculative effects.* The terms "effects" and "impacts" are synonymous in the CEQ regulations (40 CFR 1508.8).

### Adaptive Management Practices Associated with Climate Change

Methods that BLM Elko District can use in adaptive management for this project include:

- Monitoring of key areas (baseline condition surveys and season follow-up surveys).
- Documenting through assigned tracking forms (i.e., PFC, Wildfire Recovery, Soils, etc.).
- After Action Reviews.
- Note differences, especially for species exhibiting resistance and resilience.
- Be aware of increases for insects (mosquitoes, beetles, etc.).
- Use the "precautionary principle" (be conservative when planning--especially if the outcome of an activity is uncertain and harmful effects are possible).

#### Wildfire

Large portions of sagebrush and pinyon pine/juniper woodlands occur within the area and are presently dominated by perennial and annual grasses, including some invasive species

(i.e., Canadian thistle and cheatgrass) that are among the first plants established following fire. The removal of such invasive plant species would be more beneficial to sage grouse and the naturalness of the area. These habitats, within the Great Basin, are considered crucial for many species including the sage-grouse.

Proactive measures by BLM Elko District to minimize impacts by fire include annual enlistment of fire staff and fire suppression equipment. The BLM fire staff monitors daily weather conditions and coordinates with other agencies to suppress fires that occur within the Elko District and surrounding areas. Seasonally, the BLM Elko District also enlists the support of Engine and Type II Hand Crews, as well as Helitack and Hotshot Crews when necessary.

BLM also assigns roles/responsibilities to qualified emergency assessment team members (advisors with specific training/knowledge in resources impacted by fire such as soils, range, wildlife, and botanists). Once a fire is considered both contained and controlled by a Fire Incident Commander, the advisors are among the first to examine and determine fire severity to provide reclamation recommendations.

### Spread of Insects and Disease

The BLM Elko District could be impacted by animals (i.e., mice, birds, etc.) and insect populations that can carry and/or deliver infectious disease. Medical and scientific literature reviews have attributed recent outbreaks such as West Nile Virus (WNV) to geographic shifting and adaptation to increasing temperatures associated with climate change. With regards to other animals, horses also appear to be sensitive to the virus, but there is no known evidence that WNV causes disease in cattle.

Collaborative efforts are ongoing between Federal, state, and other organizations (i.e., academia, Institute of Medicine, the Centers for Disease Control and Prevention, and the National Institute of Health). Through meetings and discussions issues of shared concern are addressed which include (but are not limited to) research, prevention, detection, and management of emerging or reemerging infectious diseases.

Within the Great Basin efforts for research also include NDOW, Nevada Department of Agriculture, Nevada State Health Department, USGS, Animal and Plant Health Inspection Service, and US Fish and Wildlife Service. Methods suggested from the agencies, supported by BLM, for recommendations regarding past and emerging threats of disease include using pesticides, posting public statements, and using media/internet to inform the public about areas where reports have identified possible outbreaks and stating what the public can do to both protect themselves and how to minimize infestations (Anne, 2013).

## 3.2. Cumulative Impacts

This section analyzes the potential cumulative impacts to the resources from past, present, and reasonably foreseeable future actions (RFFAs) combined with the Proposed Action and alternatives within the project area. A cumulative impact has been defined as the impact, which results from the incremental impact of the action, decision, or project when added to other past, present, and RFFAs, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

These cumulative impacts include both direct and indirect actions occurring as a result of the Proposed Action and how they affect the resources of concern. These impacts are additive and do not always result in a one-to-one relationship but rather can compound the degree of effect. The significance of effects should be determined based on context (i.e., the setting of the Proposed Action) and intensity (40 CFR 1508.27(b)(7)). Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Intensity refers to the severity of effect. Factors that could be used to define the intensity of effects include the magnitude (relative size or amount of an effect), geographic extent, duration, and frequency of the effects.

Environmental consequences of the Proposed Action and alternatives are described earlier in Section 3.1, “Analysis of Affected Resources” (p. 33). The Proposed Action and alternatives would result in negligible impacts to cultural resources; therefore, these resources are not analyzed for cumulative impacts.

Based on the analysis in Section 3.1, “Analysis of Affected Resources” (p. 33), the resources to be analyzed in the cumulative impacts section are those for which the Proposed Action and alternatives would have an impact and include the following:

- Wildlife resources, including migratory birds and special status species (including greater sage-grouse);
- Non-native, invasive and noxious species;
- Hydrology and riparian/wetland;
- Visual resources;
- Vegetation and soils;
- Big game species including mule deer, antelope, and elk;
- Wilderness resources, WSAs, and recreation resources; and
- Wild Horse.

Table 3.8, “Cumulative Effects Study Areas” (p. 65) lists the analyzed resources, the name and size of each Cumulative Effects Study Area (CESA), a description of the geographic extent of the CESA, and the figure number for the CESA.

**Table 3.8. Cumulative Effects Study Areas**

Resource	Cumulative Effects Study Areas		
	Name	Acres	Description
Migratory birds; Special status species; Wildlife – small mammals	General Wildlife CESA	918,675	NDOW Hunt Unit 106 (Figure 18)
Special Status Species - Greater Sage-grouse	Greater Sage-grouse CESA	1,619,007	East Valley PMU (Figure 19)

Resource	Cumulative Effects Study Areas		
	Name	Acres	Description
Non-native invasive and noxious species; Hydrology and riparian/wetland; Vegetation and soils	Non-native, Invasive and Noxious Species, Hydrology and Riparian/Wetland CESA	1,406,753	Goshute Valley (Hydrographic Basin 187), Pilot Creek Valley (Hydrographic Basin 191), Great Salt Lake Desert Hydrographic Basin 192), and Antelope Valley (Hydrographic Basin 186A and 186B) State Engineer Basin Boundaries (Figure 20)
Visual; Recreation; Wilderness and WSAs	Visual, Recreation, and Wilderness and WSA CESA	125,435	Bluebell and Goshute WSA Boundaries (Figure 21)
Wildlife – Big Game	Mule Deer CESA	4,081,530	Hunt Units 101-109 (Figure 22)
	Elk CESA	1,846,890	Hunt Units 078, 105-107 and 109 (Figure 22)
	Pronghorn CESA	2,513,084	Hunt Units 078, 105-107, 121 (Figure 22)
Wild Horses	Wild Horse CESA	1,012,627	Goshute, Antelope Valley, Spruce-Pequop HMA s(Figure 23)

**Table 3.9. Past, Present, and Reasonably Foreseeable Future Actions for the Bluebell and Goshute Peak Water Project Cumulative Effects Study Areas**

Types of Activity	Cumulative Effects Study Areas							
	Migratory Birds, Special and Sensitive Status Species, Wildlife-Small Mammals	Special Status Species-Greater Sage-Grouse	Non-native Invasive and Noxious Species, Hydrology and Riparian/Wetland, Vegetation and Soils	Visual, Recreation, Wilderness and WSA	Mule Deer	Elk	Antelope	Wild Horse
<b>Past and Present Actions-Surface Disturbance Acres</b>								
<b>Mineral Development and Exploration</b>								
Graymont Pilot Peak Mine	443	443	443	NA <sup>a</sup>	443	443	443	443
Pequop Exploration Project	NA	100	100	NA	100	100	100	NA
Victoria Mine	15	15	15	NA	15	15	15	15
Long Canyon Mine	NA	169	169	NA	NA	169	169	NA
Kinsley Exploration Project	71	71	71	NA	71	71	71	71
Limo Butte	NA	NA	NA	NA	NA	NA	89	NA

Types of Activity	Cumulative Effects Study Areas							
	Migratory Birds, Special and Sensitive Status Species, Wildlife-Small Mammals	Special Status Species-Greater Sage-Grouse	Non-native Invasive and Noxious Species, Hydrology and Riparian/Wetland, Vegetation and Soils	Visual, Recreation, Wilderness and WSA	Mule Deer	Elk	Antelope	Wild Horse
Cocomongo Project	NA	NA	NA	NA	NA	NA	2	NA
Golden Butte Mine	NA	NA	NA	NA	NA	NA	10	NA
Maverick Springs Exploration Project	NA	NA	NA	NA	14	NA	NA	NA
Bald Mountain Mine North and South Operations (Including Yankee, Winrock, and Alligator Ridge)	NA	NA	NA	NA	9,856	NA	NA	NA
Gravel Pits, Material Sites and Community Sand and Gravel Pits	1,001	1,167	1,137	NA	3,065	1,324	2,253	682
Notice of Intent	32	68	66	NA	176	90	136	15
<b>Utilities, Infrastructure and Public Purpose</b>								
Railroads <sup>b</sup>	60	230	193	NA	1,135	669	999	107
Telephone and Fiber Optic Lines and Communication Sites	210	326	248	NA	1,631	766	1,199	191
ON Line/Southwest Intertie Transmission Line Project	1,139	1,672	1,672	NA	1,139	218	2,957	NA
Falcon to Gonder 345 kV Transmission Line Project	NA	NA	NA	NA	485	NA	310	NA
Silver State Fiber Optic Line	NA	NA	NA	NA	40	NA	NA	NA

Types of Activity	Cumulative Effects Study Areas							
	Migratory Birds, Special and Sensitive Status Species, Wildlife-Small Mammals	Special Status Species-Greater Sage-Grouse	Non-native Invasive and Noxious Species, Hydrology and Riparian/Wetland, Vegetation and Soils	Visual, Recreation, Wilderness and WSA	Mule Deer	Elk	Antelope	Wild Horse
Other Power Lines	420	931	871	NA	3,114	1,429	2,360	347
Water/Sewer Pipelines and Water Tanks	143	238	217	NA	195	80	137	101
Ruby Valley Maintenance Station	NA	NA	NA	NA	10	NA	NA	NA
Ferguson Springs Maintenance Station	16	16	16	NA	16	16	16	16
West Wendover Sanitary Landfill	88	88	88	NA	88	88	88	NA
City of Ely Class I Landfill	NA	NA	NA	NA	NA	NA	80	NA
West Wendover Sewage Treatment Facility	200	200	200	NA	200	200	200	NA
Ely Airport	NA	NA	NA	NA	NA	NA	3,450	NA
Nevada Ely State Prison	NA	NA	NA	NA	NA	NA	640	NA
<b>Oil, Gas and Geothermal Development</b>								
Oil, Gas and Geothermal Development <sup>c</sup>	15	27	18	NA	156	6	51	9
<b>Urban Development</b>								
City of West Wendover (Including Toana Vista Golf Course)	1,013	1,013	1,013	NA	1,013	1,013	1,013	NA
Currie, NV	41	41	41	NA	41	41	41	3
Pilot Valley	NA	648	NA	NA	NA	NA	NA	NA
Montello	NA	67	NA	NA	NA	NA	NA	NA
Ely, NV (Including Cross Timbers)	NA	NA	NA	NA	NA	NA	1,589	NA

Types of Activity	Cumulative Effects Study Areas							
	Migratory Birds, Special and Sensitive Status Species, Wildlife-Small Mammals	Special Status Species-Greater Sage-Grouse	Non-native Invasive and Noxious Species, Hydrology and Riparian/Wetland, Vegetation and Soils	Visual, Recreation, Wilderness and WSA	Mule Deer	Elk	Antelope	Wild Horse
City of Elko (Includes Spring Creek)	NA	NA	NA	NA	17,944	NA	NA	NA
City of Wells	NA	NA	NA	NA	512	32	75	NA
McGill	NA	NA	NA	NA	NA	NA	46	NA
Cherry Creek	NA	NA	NA	NA	NA	NA	73	NA
Schellbourne Station	NA	NA	NA	NA	NA	NA	12	NA
Interstate 80 <sup>d</sup>	970	3,617	3,633	NA	NA	1,940	3,622	NA
U.S.Highways <sup>e</sup>	695	665	621	NA	1,200	1,051	1,609	460
State Routes <sup>f</sup>	NA	228	228	NA	1,004	45	76	NA
Local/ County Roads <sup>g</sup>	164	540	428	NA	565	324	420	533
BLM Roads <sup>h</sup>	2,717	4,041	3,551	125	6,285	5,300	5,720	588
Other Roads <sup>i</sup>	67	77	350	NA	4,738	102	4,938	3,527
<b>Recreation</b>								
Goshute Mountain Research Station and Trail Maintenance to Station (Hawkwatch International)	6	6	6	6	6	6	6	6
West Wendover Equestrian Park	142	142	142	NA	142	142	142	NA
<b>Wildland Fires (1999-2013)</b>								
Wildland Fires	8,870	13,145	12,361	2,960	91,990	17,128	27,763	9,338
Past and Present Disturbance Totals	18,538	29,991	27,898	3,091	147,389	32,808	62,920	16,452
<b>Reasonably Foreseeable Future Actions</b>								
<b>Mineral Development and Exploration</b>								
Bald Mountain Mine	NA	NA	NA	NA	6,707	NA	NA	NA

Types of Activity	Cumulative Effects Study Areas							
	Migratory Birds, Special and Sensitive Status Species, Wildlife-Small Mammals	Special Status Species-Greater Sage-Grouse	Non-native Invasive and Noxious Species, Hydrology and Riparian/Wetland, Vegetation and Soils	Visual, Recreation, Wilderness and WSA	Mule Deer	Elk	Antelope	Wild Horse
Graymont Pilot Peak Mine	578	578	578	NA	578	578	578	578
Victoria Mine	23	23	23	NA	23	23	23	23
Long Canyon Mine	NA	3,962	4,076	NA	NA	3,918	3,918	NA
West Pequop Exploration Expansion	NA	300	300	NA	300	300	300	NA
Kinsley Exploration Project	21	21	21	NA	21	21	21	21
Notice of Intent	7	9	7	NA	2.4	2	2	NA
Gravel Pits, Material Sites and Community	80	230	230	NA	115	110	143	NA
<b>Utilities, Infrastructure and Public Purpose</b>								
Powerlines	0.2	0.2	0.2	NA	58	58	58	NA
Water and Sewer Pipelines and Infrastructure	1	1	1	NA	1	1	1	NA
City of Wells Construction and Demolition Landfill	NA	NA	NA	NA	5	5	5	NA
<b>Access and Roads Future Actions</b>								
ICI Cattle and Timber Company, LLC	NA	NA	NA	NA	24	24	24	NA
Misc. Road ROW	NA	NA	NA	NA	3	2	2	NA
<b>Urban Development</b>								
Port of West Wendover	3,000	3,000	3,000	NA	3,000	3,000	3,000	NA
Wendover Project, LLC	675	675	675	NA	675	675	675	NA
Wells Golf Course Expansion	NA	NA	NA	NA	80	NA	NA	NA
<b>Vegetation Treatment Projects</b>								

Types of Activity	Cumulative Effects Study Areas							
	Migratory Birds, Special and Sensitive Status Species, Wildlife-Small Mammals	Special Status Species-Greater Sage-Grouse	Non-native Invasive and Noxious Species, Hydrology and Riparian/Wetland, Vegetation and Soils	Visual, Recreation, Wilderness and WSA	Mule Deer	Elk	Antelope	Wild Horse
Overland Pass Project	NA	NA	NA	NA	14,850	NA	NA	NA
Spruce Restoration Project	10,000	4,561	NA	NA	10,000	10,000	10,000	10,000
Recreation Future Uses								
Wild Horse Eco-Sanctuary	240,179	399,568	391,528	32,800	399,568	399,568	399,568	366,077
Reasonably Foreseeable Future Disturbance Totals	244,564	408,367	400,439	32,800	426,010	408,285	408,318	366,699

<sup>a</sup>NA (Not Applicable) in Table 3.9, “Past, Present, and Reasonably Foreseeable Future Actions for the Bluebell and Goshute Peak Water Project Cumulative Effects Study Areas” (p. 66) means that no disturbance from the activity is present in the CESA.

<sup>b</sup>Railroad disturbance assumes a 40-foot wide disturbance area and includes both Union Pacific and Nevada Northern ROWs.

<sup>c</sup>Oil, Gas, and Geothermal development estimated disturbance assumes three acres of disturbance for each well site.

<sup>d</sup>Interstate 80 disturbance assumes a 400-foot-wide disturbance area.

<sup>e</sup> U.S. Highway disturbance assumes a 100-foot-wide disturbance area.

<sup>f</sup>State Route disturbance assumes a 70-foot-wide disturbance area.

<sup>g</sup>Local/County roads disturbance assumes a 50-foot-wide disturbance area.

<sup>h</sup>BLM roads disturbance assumes a 50-foot-wide disturbance area.

<sup>i</sup>All other roads disturbance assumes a 20-foot-wide disturbance area.

### 3.2.1. Past, Present, and Reasonably Foreseeable Future Actions

Information utilized in the cumulative impacts assessment was gathered from the following sources: BLM’s Land and Mineral Legacy Rehost 2000 System (LR2000); the 2012 Nevada Atlas and Gazetteer; Geographic Information System shape files provided by the BLM, NDOW, Nevada Bureau of Mines and Geology; aerial photography; Elko County; the City of West Wendover, and previously published EA and EIS documents. The BLM LR2000 database was queried for authorized multiple land use activities, pending ROW grants, mineral and non-mineral exploration and mining permits. Table 3.9, “Past, Present, and Reasonably Foreseeable Future Actions for the Bluebell and Goshute Peak Water Project Cumulative Effects Study Areas” (p. 66) outlines the quantifiable actions considered in the cumulative impacts analysis.

The time frame for past, present, and RFFAs begins with the earliest recorded data on the LR2000 report and extends into the future (likely to occur within the next 20 years) to correspond with the life of the proposed project. The past, present, and RFFAs discussed in the following sections have occurred or may occur in numerous geographic locations and therefore, could have impacts to resources within the various CESAs.

Past, present, and RFF actions within the CESA boundary include the following:

- Livestock grazing and range improvements;
- Wild horse use;
- Game habitat management;
- Wildland fires and fire rehabilitation
- Recreation (dispersed used, off-highway vehicles, Christmas tree cutting);
- Road construction and maintenance;
- Utilities infrastructure including water and irrigation facilities, utility lines (power lines, fiber optic lines, and telephone lines), and railroads;
- Mineral development and exploration including Notice-level exploration (minerals activities on BLM administered land with less than five acres of surface disturbance) and Plans of Operations, metal and non-metal mining projects including sand and gravel operations;
- ROWs for roads, highways, utilities and infrastructure

### **3.3. Evaluation of Potential Cumulative Impacts**

Cumulative impacts for the Bluebell and Goshute Peak Water Project EA involve evaluating potential environmental effects from combined impacts of past, present, and RFFAs within the Proposed Action area. The resources discussed below are those that can be reasonably identified as potentially affected by the cumulative effects of the Proposed Action and alternatives. The analysis presented in this EA considers the potential direct, indirect, and cumulative impacts associated with the Proposed Action and alternatives as well as the proposed EPMs for those impacts. Table 11 displays specific actions within each CESA. The analysis below combines the surface disturbance acres for the different action types (i.e., mineral development and exploration, utilities, infrastructure, and public purpose sites, etc.) within each CESA boundary. For the specific actions within each CESA boundary, refer to Table 11.

#### **3.3.1. Wildlife Resources, Including Migratory Birds**

##### **3.3.1.1. Wildlife Resources, Including Migratory Birds CESA Boundary**

The CESA for wildlife resources and migratory birds consists of the NDOW Hunt Unit 106 (Figure 18). This CESA boundary was chosen because it is the hunt unit the project area is located within; it incorporates the range of general wildlife and migratory bird use in relation to the project area; and it represents the extent of potential impact to these species.

##### **3.3.1.2. Past and Present Actions**

The majority of past and present activities that have impacted general wildlife, special status species, and migratory birds and their habitat in the CESA include mineral development and exploration; utilities, infrastructure and public purpose projects; urban development acres), access,

roads, livestock grazing and wild horses. In addition, there has been recreation development and oil, gas, and geothermal development. Wildland fires have also impacted acres within the CESA. Effects related to these disturbances include loss of habitat, displacement, and fragmentation.

### **3.3.1.3. Reasonably Foreseeable Future Actions**

Surface disturbance associated with RFFAs include mineral development and exploration, urban development and continued recreation activities. Impacts associated with the RFFAs would be similar to the impacts described for past and present actions. The Wild Horse Eco-Sanctuary (now under proposal and in the draft environmental analysis preparation phase); however, there would be no specific disturbance associated with it. Wild horses would graze on plants likely used as wildlife, special status species and migratory bird habitat; however, a maximum wild horse carrying capacity would be determined and application of best management practices (BMPs) and adaptive management would preclude overgrazing. There are reasonably foreseeable utility, infrastructures, or public purpose projects identified

### **3.3.1.4. Cumulative Impacts**

#### Proposed Action

Approximately 263,102 acres of disturbance is associated with past, present, and RFFAs (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 28 percent of the CESA. The Proposed Action would increase the surface disturbance within the CESA by less than 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent.

The Proposed Action would provide the benefit of a reliable source of water for wildlife that would exist within the CESA. Implementation of the proposed EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21) are expected to minimize impacts to general wildlife, special status species and migratory birds that would result from implementation of the Proposed Action. Potential impacts from the Proposed Action combined with past, present, and RFFAs include temporary displacement and loss of habitat and individuals. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with the Proposed Action would result in a negligible increase (less than one percent) in surface disturbance within the CESA, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the CESA.

#### Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts to wildlife under this alternative would be similar to those described for the Proposed Action. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers to wildlife as described in the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include temporary displacement and loss of habitat and individuals. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts to wildlife within the CESA.

## No Action

Cumulative impacts for wildlife, special status species, and migratory birds under the No Action Alternative are expected to be major. Under the No Action Alternative, current conditions would continue, and lead to the degradation of riparian functionality. If conditions continue as they have been, cumulative degradation of riparian habitat could lead to major declines for wildlife habitat in the area.

### **3.3.2. Special Status Species (Greater Sage-Grouse)**

#### **3.3.2.1. Special Status Species (Greater Sage-Grouse) CESA Boundary**

The greater sage-grouse CESA boundary was developed to address impacts to the sage-grouse that utilize the project area. The CESA consists of the East Valley PMU that was delineated by telemetry studies to designate bird usage of specific habitats (Figure 19). The East Valley PMU has a population of approximately 500 greater sage-grouse.

#### **3.3.2.2. Past and Present Actions**

The primary effect to sage-grouse within the CESA has been habitat changes associated with past and present mineral development and exploration activities, utilities, infrastructure, and public purpose sites, urban development, and access and roads. In addition, there has been recreation development and oil, gas, and geothermal development. Livestock and wild horses have also impacted the CESA. Wildland fires have impacted portions of the CESA. Effects related to these disturbances include noise disturbance, loss of habitat, displacement, and fragmentation. Mortality by vehicles has also most likely occurred from the past and present actions within the CESA boundary.

#### **3.3.2.3. Reasonably Foreseeable Future Actions**

RFFAs would be similar to past and present actions and include mineral development and exploration activities, urban development, continued recreation activities and the proposed Wild Horse Eco-sanctuary. Although there is no specific disturbance associated with this project, increased wild horse populations could compete with sage-grouse for resources such as forage and water, and could further degrade habitat. Mineral extraction projects and urban development would further eliminate habitat and forage.

#### **3.3.2.4. Cumulative Impacts**

##### Proposed Action

The Proposed Action for this project would increase the surface disturbance within the CESA by less than 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent.

The Proposed Action would provide the benefit of a reliable source of water for greater sage-grouse potentially occurring within the CESA. Implementation of the proposed EPMS outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21) is expected to minimize impacts to greater sage-grouse that would result from implementation of the Proposed Action.

Potential impacts from the Proposed Action combined with past, present and RFFAs include temporary displacement and loss of habitat and individuals. As a result of the proposed EPMs and the fact that the surface disturbance associated with the Proposed Action would result in a negligible increase (less than one percent) in surface disturbance within the CESA, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the CESA.

#### Alternative 2

Cumulative impacts under this alternative would be similar to those described for the Proposed Action. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers to wildlife as described in the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include temporary displacement and loss of habitat and individuals. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

#### No Action Alternative

Cumulative impacts to greater sage-grouse under the No Action Alternative are expected to be major. Under the No Action Alternative, current conditions would continue, and lead to the degradation of riparian functionality. If conditions continue, cumulative degradation of riparian habitat could lead to further decline in greater sage-grouse habitat.

### **3.3.3. Non-Native Invasive and Noxious Species**

#### **3.3.3.1. Non-Native Invasive and Noxious Species CESA Boundary**

The non-native, invasive and noxious species CESA (Figure 20) was developed to assess impacts from the Proposed Action, alternatives and other actions to the state engineer basin and boundaries located within the Goshute Peak and Bluebell WSAs. The boundaries include the Goshute Valley, Pilot Creek Valley, Great Salt Lake Desert, and Antelope Valley. These valleys represent the watershed basins, in relation to the Proposed Action, where impacts from non-native, invasive and noxious species are likely to occur.

#### **3.3.3.2. Past and Present Actions**

Past and present surface disturbance within the CESA includes mineral development and exploration; utilities, infrastructure and public purpose sites; urban development; access and roads; and recreation. In addition, livestock grazing, wild horses, oil, gas, and geothermal development occur within the CESA boundary. Wildland fires have also impacted portions of the CESA. Wildland fires have the potential to contribute to the establishment of new non-native invasive species, and any increase in human activity such as mineral development and exploration and recreation may result in the opportunity to spread noxious weeds. However, with the implementation of the EPMs discussed in Section 2.1.4, “Environmental Protection Measures” (p. 21), the spread of noxious weeds

In total, 27,898 acres (Table 11) have been disturbed as a result of past and present actions within the CESA boundary.

### 3.3.3.3. Reasonably Foreseeable Future Actions

RFFAs would be similar to past and present actions and include mineral development and exploration projects, urban development, and continued recreation activities. Past and present actions also include the proposed Wild Horse Eco-sanctuary, livestock grazing and wild horses; however, there would be no specific disturbance associated with the project. However, without proper management, rangelands may be damaged by wild horse use. Desirable native species may be replaced by invasive species due to trampling or over grazing. Weedy species are often able to out-compete native species, further reducing vegetation diversity. Under such conditions, the rangelands may become unable to produce forage and habitat for the existing animals that now live there. A maximum wild horse carrying capacity would be determined and application of BMPs and adaptive management would preclude overgrazing.

### 3.3.3.4. Cumulative Impacts

#### Proposed Action

The Proposed Action combined with past, present, and reasonably foreseeable surface disturbance has the potential to create conditions favorable for the establishment/invasion of non-native invasive and noxious species. For projects under federal and state jurisdiction, BMPs used during construction and timely reclamation would lessen the spread of non-native, invasive and noxious species. Wildland fire and recreation poses the greatest risk for future invasion of non-native invasive and noxious species within the CESA, largely because the future mineral development and exploration activities would require appropriate reclamation activities to reduce the spread of non-native invasive and noxious species and future urban development activities most likely would be required to follow BMP guidelines to reduce the spread of non-native and noxious species. The potential for the establishment of noxious and/or invasive non-native weeds within the CESA area may be greater if the fire burns on private lands where federal involvement is limited.

Approximately 428,337 acres of surface disturbance is associated with past, present and RFFAs (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 30 percent of the CESA. The Proposed Action would increase the surface disturbance within the CESA by less than 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent. Consistent with BLM policy, use of suitable BLM-approved seed mixes with only certified weed-free and tested seed, combined with implementation of appropriate reclamation techniques would reduce the potential for undesired weeds to invade disturbed areas from all present and reasonably foreseeable future projects on public land within the CESA. As a result of the proposed EPMs associated with the Proposed Action and the fact that the surface disturbance associated with the Proposed Action is temporary and would result in a negligible increase (less than one percent) in surface disturbance within the CESA, the Proposed Action is expected to result in negligible impacts within the CESA (less than 0.59 acres); therefore, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the CESA.

#### Alternative 2

The surface disturbance associated with Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts under this alternative would be similar to those described for the Proposed Action; however, with 0.5 acres less of surface

disturbance impacts from non-native, invasive and noxious species would be less under this alternative. Potential impacts from Alternative 2 combined with past, present, and RFFAs include loss of habitat during construction and possible introduction or spread of existing populations of non-native, invasive and noxious species. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

#### No Action Alternative

Cumulative impacts under the No Action Alternative are expected to be the similar to those described under the Proposed Action, although with the implementation of the No Action Alternative spring a seep sites would not be fenced, therefore re-establishment of native vegetation would not take place and non-native and noxious species would continue to become established in these areas. The EMPs for weed control outlined under the Proposed Action would not take place to help minimized the establishment of these species.

### **3.3.4. Hydrology and Riparian Wetland**

#### **3.3.4.1. Hydrology and Riparian Wetland CESA Boundary**

The hydrology and riparian/wetland CESA (Figure 20) was developed to assess impacts from the Proposed Action, alternatives and other actions to the state engineered basin and a boundaries located within the Goshute Peak and Bluebell WSAs. The boundaries include Goshute Valley, Pilot Creek Valley, Great Salt Lake Desert, and Antelope. These valleys represent the extent of where effects to hydrology and riparian/wetland areas would occur.

#### **3.3.4.2. Past and Present Actions**

Past and present surface disturbance within the CESA includes mineral development and exploration; utilities, infrastructure and public purpose sites; urban development, access and roads, and recreation. Past and present surface disturbance within the CESA also includes livestock grazing, wild horses, oil, gas, geothermal development and wildland fires. The mineral development and exploration operations have used or are currently using water (typically groundwater) as part of their operations, either for dust control or processing, which may reduce the availability of water or impact water quality. General surface disturbance can cause sediment loading; channel rerouting can cause erosion/sedimentation; and inadvertent spills of process water, drilling fluids, or other hazardous substances can contaminate surface water or shallow groundwater.

Utility and infrastructure projects may cause erosion/sedimentation associated with access roads and unreclaimed disturbances. Other activities such as roads, urban development, and recreation also have the same potential consequences because they use water and/or involve land disturbance.

#### **3.3.4.3. Reasonably Foreseeable Future Actions**

RFFAs would be similar to past and present actions and mineral development and exploration; utilities, infrastructure and public purpose sites; urban development, access and roads, and recreation. RFFAs also include continued recreation, livestock grazing, wild horses, oil,

gas, geothermal development and wildland fires. Wild horses may impact hydrology and riparian/wetlands areas by compacting and disturbing riparian soil, making them less productive and less stable. Wild horses can also compete with wildlife for limited water resources. A maximum wild horse carrying capacity would be determined and application of BMPs and adaptive management would preclude overgrazing.

### 3.3.4.4. Cumulative Impacts

#### Proposed Action

The Proposed Action combined with past, present, and reasonably foreseeable surface disturbance has the potential to impact hydrology and riparian wetland area resources. Past, present, and reasonably foreseeable actions that would cumulatively impact hydrology and riparian wetland areas along with the Proposed Action are mineral development and exploration, livestock grazing, wild horse use, recreation, range improvement maintenance, urban development and wildfire. In addition, the external influence of wildfires and climatic variability and climate change are other cumulative effects. As described in Section 3.1.5, “Hydrology and Riparian Wetland” (p. 40), water quality and riparian wetlands areas are negatively affected by these impacts and it is apparent that riparian areas have already sustained substantive cumulative impacts. As described in Section 3.1.5.2, “Environmental Consequences of the Proposed Action” (p. 42), the Proposed Action is expected to reduce these negative impacts and improve the resource.

Approximately 428,337 acres of surface disturbance is associated with past, present and RFFAs (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 30 percent of the CESA. The Proposed Action would increase the surface disturbance by less than 0.59 acres (less than one percent) within the CESA, the Proposed Action would result in negligible impacts within the CESA; therefore, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the CESA.

#### Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts under this alternative would be similar to those described for the Proposed Action. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers as described in the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include minimal surface disturbance. As a result of the proposed EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

#### No Action Alternative

Cumulative impacts under the No Action Alternative are expected to be major. Under the No Action Alternative, current conditions would continue, and lead to increased degradation of riparian functionality. If conditions continue cumulative degradation of riparian habitat could lead to major declines in wildlife habitat with the potential of no available water for wildlife and wild horse consumption at the springs and seeps identified in this project.

### **3.3.5. Visual**

#### **3.3.5.1. Visual CESA Boundary**

The CESA boundary for visual resources is the Bluebell and Goshute Peak WSAs (Figure 21). It is 125,831 acres in size and was developed to assess visual impacts from the Proposed Action and alternatives and other actions, described below as past and present actions, within the Bluebell and Goshute Peak WSAs.

#### **3.3.5.2. Past and Present Actions**

Past and present surface disturbance within the CESA is generally limited to access and roads. The Goshute Mountain Research Station and associated trail maintenance is located within the CESA, livestock grazing, wild horses and wildland fires have impacted the CESA.

#### **3.3.5.3. Reasonably Foreseeable Future Actions**

The only RFFA in the visual CESA would include the proposed Wild Horse eco-Sanctuary; however, no specific disturbance is associated with it. Visual impacts would be limited to any new fencing or water developments required for the project. Recreation activities would continue within the CESA boundary in the future. There are no other substantial RFFAs within the CESA.

#### **3.3.5.4. Cumulative Impacts**

##### Proposed Action

Past, present, and RFFAs, in addition to the Proposed Action, have the potential to result in short- and long-term visual impacts principally affecting elements of line, color, and texture within the CESA. Approximately 35,891 acres of surface disturbance are associated with past, present, and RFFAs (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 29 percent of the CESA. The Proposed Action would increase the surface disturbance within the CESA by less than 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent.

The project's design features are expected to minimize the long-term, minor visual impacts expected from the duration of the project. Installation of the two guzzlers may impact the current visual landscape as well, particularly in areas where there is limited human influence. However, the design features of these water developments and catchments would conceal such items from general view to the degree that they are unnoticeable. Visual impacts from past, present, and RFFAs is generally limited to access and roads, visual impacts from wildland fires, and the Goshute Mountain Research Station at the south end of the CESA. The proposed Long Canyon Mine is not within the CESA boundary, but the Proposed Action, at the closest point (i.e. Tunnel Spring), is approximately 12 miles to the northwest of the Long Canyon Mine. However, the remainder of the Proposed Action is over 15 miles from the proposed Long Canyon Mine. Due to the steep topography and high elevation valleys of the project area, visual impacts to line, color, and texture resulting from the Long Canyon Mine would be negligible. In addition, the distance zone for the majority of the project area to the Long Canyon Mine would be considered the seldom-seen zone since it is over 15 miles away from any observation point (BLM, 1986).

As a result of the project EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), the overall benefit of guzzlers to wildlife and other species in the area, and the negligible ground disturbance impacts within the CESA (less than 0.59 acres) from the Proposed Action, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the visual CESA.

#### Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts under this alternative would be similar to those described for the Proposed Action, except under this alternative less than 0.09 acres of surface disturbance would occur and the guzzler sites would not be constructed and, therefore, those sites would maintain their natural features of line, form, color, and texture. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers as described in the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include surface disturbance of less than 0.09 acres. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

#### No Action Alternative

Cumulative impacts to visual resources under the No Action Alternative are expected to be moderate. Under the No Action Alternative, no visual impacts are expected affecting the elements of line and texture. However, impacts would most likely continue to the target springs, thereby increasing degradation to the riparian areas and impacting the visual landscape.

### **3.3.6. Vegetation and Soils**

#### **3.3.6.1. Vegetation and Soils CESA Boundary**

The vegetation and soils CESA boundary (Figure 20) includes the Goshute Valley, Pilot Creek Valley, Great Salt Lake Desert, and Antelope Valley State Engineer Basin Boundaries. The loss of vegetation and erosion of soils and sedimentation associated with the Project would be limited to this area.

#### **3.3.6.2. Past and Present Actions**

Past and present surface disturbance within the CESA includes mineral development and exploration; utilities, infrastructure and public purpose sites; urban development, access and roads, and recreation. Past and present surface disturbance within the CESA also includes livestock grazing, wild horses, oil, gas, geothermal development and wildland fires. While there is no specific data that quantify impacts from dispersed recreation (as opposed to developed trails etc.), these types of activities would impact vegetation and soil surfaces through trampling, displacement, or modification.

Impacts to vegetation from past and present actions noted above within the CESA have included removal, trampling, and introduction of non-native and invasive noxious species that compete with native species. Impacts to soils from mining, urban development, utility/infrastructure

projects, and road construction activities have varied from minor surface disturbance to complete disturbance of the soil profile. Overland travel, wild horse use, and livestock grazing may have affected the surface soil properties and function through soil compaction, reduced vegetation cover, and exposure to wind and water erosion. Mining and road construction activities and salvage of the upper soil for plant growth media can result in a change in the soil physical and chemical properties that would affect reclamation activities such as structure, texture, intermixing of rock fragments, soil hydraulics and loss of organic surface material.

### **3.3.6.3. Reasonably Foreseeable Future Actions**

Future soil disturbance is expected to occur from continued urban development and associated infrastructure, mineral development and exploration activities, dispersed recreation, and continued livestock and wild horse grazing.

The proposed Wild Horse Eco-Sanctuary would comprise approximately 391,528 acres of the CESA; however, there would be no specific disturbance associated with it. Continued use by the existing wild horse population (or an increase) could increase erosion and sedimentation issues around seeps and springs identified in this project, affecting both vegetation and soil. In addition, desirable native species may be replaced by invasive species due to trampling and or over grazing. Weedy species are often able to out-compete native species, further reducing vegetation diversity. Under such conditions, rangelands may become unable to produce forage and habitat for the existing animals that live there. A maximum wild horse carrying capacity would be determined and application of BMPs and adaptive management would preclude overgrazing.

The reasonably foreseeable utility, infrastructure, or public purpose projects identified measure approximately 1.2 acres. The total estimated RFFA disturbance within the CESA is approximately 400,439 acres. Impacts associated with the RFFAs would be similar to the impacts described for past and present actions.

### **3.3.6.4. Cumulative Impacts**

#### **Proposed Action**

The Proposed Action combined with past, present, and reasonably foreseeable surface disturbance has the potential to impact vegetation and soils. Approximately 428,337 acres of surface disturbance are associated with past, present, and RFFAs, (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 30 percent of the CESA.

The Proposed Action would increase the surface disturbance within the CESA by less than 0.59 acres, which would be temporary until reclamation is fully completed. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent. Some of the past actions have undergone reclamation, rehabilitation after fires, or have naturally revegetated following disturbance. In addition, present and RFFAs on public land would also require reclamation of disturbed areas. The Proposed Action would be implemented using EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), which would assist with preventing adverse impacts from the project on vegetation and soils resources. The Proposed Action would result in negligible impacts within the CESA (less than 0.59 acres); therefore, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the CESA.

## Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts to vegetation under this alternative would be similar to those described for the Proposed Action. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers to vegetation as described in the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include temporary displacement and loss of habitat. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

## No Action

Cumulative impacts under the No Action Alternative are expected to be major. Under the No Action Alternative, current conditions would continue, and lead to the continued degradation of vegetation and compaction of soils, both of which are vital to riparian functionality. Continuing conditions could lead to major declines in sensitive status species habitat with the potential for no available water for wildlife and wild horse consumption at the springs or seeps within the CESA.

### **3.3.7. Wilderness, Wilderness Study Areas and Recreation**

#### **3.3.7.1. Wilderness and Wilderness Study Areas CESA Boundary**

The wilderness, WSA, and recreation CESA consist of the Bluebell and Goshute Peak WSAs (Figure 21).

#### **3.3.7.2. Past and Present Actions**

Surface disturbance within the CESA is generally limited to access and roads. The Goshute Mountain Research Station and associated trail maintenance is located within the southern portion of the CESA. Livestock grazing and wild horses have impacted portions of the CESA. According to LR 2000, Battle Mountain Gold Company performed exploration drilling within the CESA in the 1980s and 1990s. No roads were created with the exploration activities and all surface disturbances were reclaimed. Past and present motorized off-road vehicle use has occurred adjacent to the CESA. There are four-wheel drive clubs that use areas outside of the CESA for motorized off road vehicle racing. The areas used for off road vehicle racing affect those recreationists seeking solitude and a primitive outdoor experience. However, they are outside the CESA and would have minimal impacts within the CESA. Impacts within the CESA from the off-road vehicle racing would mainly be from increased noise on the east side within the CESA.

#### **3.3.7.3. Reasonably Foreseeable Future Actions**

The only RFFA in the CESA would be approximately 32,800 acres of the proposed Wild Horse Eco-Sanctuary; however, there would be no specific disturbance associated with the project. The proposed Wild Horse Eco-Sanctuary project area could be fenced outside of the WSAs on the western or eastern edges, which may limit some recreation use, and may affect the sense of primitive and unconfined outdoor experience.

### **3.3.7.4. Cumulative Impacts**

#### Proposed Action

Approximately 35,891 acres are associated with past, present, and RFFAs within the CESA boundary (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 29 percent of the CESA. The Proposed Action would increase the surface disturbance within the CESA by approximately 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent. Under the Proposed Action, the Bluebell and the Goshute Peak WSAs would continue to remain largely undisturbed. Management would continue to emphasize natural conditions and the landscape would remain primarily affected by the forces of nature. Impacts from the Proposed Action would be temporary, and the Bluebell and the Goshute Peak WSAs would continue to provide out-standing opportunities for solitude, primitive and unconfined recreation experiences. The Proposed Action added to the past, present and RFFAs would meet Section 4d: Special Provisions of the Wilderness Act and have minimal cumulative impacts to the Bluebell and the Goshute Peak WSAs.

#### Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts under this alternative would be similar to those described for the Proposed Action, except under this alternative less than 0.09 acres, a 84% reduction in surface disturbance from the Proposed Action would occur and the guzzler sites would not be constructed and, therefore, would not impact solitude and unconfined opportunities in the Goshute WSA. Under this alternative, the impacts associated with the project would be restricted to the Bluebell WSA. As a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

#### No Action Alternative

Cumulative impacts under the No Action Alternative are expected to be negligible.

## **3.3.8. Mule Deer**

### **3.3.8.1. Mule Deer CESA Boundary**

The mule deer CESA was developed to assess impacts from the Proposed Action, alternatives, and past, present, and RFFAs to the mule deer population in the area. The mule deer CESA boundary includes Hunt Units 101-109 (Figure 22). This CESA boundary was chosen because it includes the mule deer habitat within and adjacent to the project area where most of the impacts could occur from the Proposed Action and alternatives.

### **3.3.8.2. Past and Present Actions**

Past and present surface disturbance within the CESA includes mineral development and exploration; utilities, infrastructure and public purpose sites; urban development, access and

roads, and recreation. Past and present surface disturbance within the CESA also includes livestock grazing, wild horses, oil, gas, geothermal development and wildland fires.

These surface disturbance activities often modify landscapes and remove vegetation resources that would otherwise be available for mule deer use. These disturbance activities also increase the likelihood of noxious and non-native, invasive species establishment which reduces, through competition and replacement of native species, the amount of available forage vegetation. Construction of ROWs and fences has the potential to impact wildlife habitat through habitat fragmentation. Construction of roads leads to increased direct mortality from vehicle collisions.

### **3.3.8.3. Reasonably Foreseeable Future Actions**

RFFAs would be similar to past and present actions and include mineral development and exploration; utilities, infrastructure, and public purpose projects; access and roads; and urban development. Mineral development and exploration projects would further eliminate habitat and forage, and utility lines may further fragment habitat. The proposed Wild Horse Eco-Sanctuary would also be included within the mule deer CESA. Although there is no specific disturbance associated with this project, wild horse populations would compete with big game for resources such as forage and water. Two vegetation treatment activities are also proposed (Overland Pass Project and Spruce Restoration Project).

### **3.3.8.4. Cumulative Impacts**

#### Proposed Action

Approximately 573,399 acres of disturbance is associated with past, present, and RFFAs (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 14 percent of the CESA. The Proposed Action would increase the surface disturbance within the CESA by less than 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent.

Implementation of the proposed EPMs as outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21) are expected to minimize impacts to mule deer that would result from implementation of the Proposed Action. Potential impacts from the Proposed Action combined with past, present, and RFFAs include temporary displacement, loss of habitat or habitat fragmentation, and conflicts with human presence. Once activities cease, mule deer associated with the area are likely to re-inhabit the reclaimed areas as the vegetation returns. The intention of the Proposed Action is to provide a reliable source of water and as a subsequent action to increase diversity and abundance of wildlife in the WSAs, which would ultimately benefit mule deer. As a result of the proposed EPMs, and the fact that the surface disturbance associated with the Proposed Action would be temporary and result in less than one percent increase in surface disturbance within the CESA, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the CESA under the Proposed Action.

#### Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts under this alternative would be similar to those described for the Proposed Action. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers

to mule deer from the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include temporary displacement and loss of habitat and individuals. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

### No Action Alternative

Cumulative impacts under the No Action Alternative are expected to be major. Under the No Action Alternative, current conditions would continue and lead to increased degradation of riparian functionality and vegetation. If conditions continue, cumulative degradation of riparian habitat could lead to major declines in wildlife habitat with the potential of no available water for wildlife consumption, including mule deer, at the springs and seeps within the CESA.

## **3.3.9. Elk**

### **3.3.9.1. Elk CESA Boundary**

The elk CESA boundary includes Hunt Units 078, 105-107, and 109 (Figure 22). The elk CESA was developed to assess impacts from the Proposed Action and alternatives and past, present, and RFFAs to the elk population in the Goshute Peak and Bluebell WSAs. A certain percentage of the herd will travel during the spring as they move out of winter ranges; however, there is always a core group that resides in the area. This CESA boundary was chosen because it includes the elk habitat within and adjacent to the project area where most of the impacts could occur from the Proposed Action.

### **3.3.9.2. Past and Present Actions**

Past and present surface disturbance within the CESA includes mineral development and exploration; utilities, infrastructure and public purpose sites; urban development, access and roads, and recreation. Past and present surface disturbance within the CESA also includes livestock grazing, wild horses, oil, gas, geothermal development and wildland fires.

These surface disturbance activities often modify landscapes and remove vegetation resources that would otherwise be available for elk use. These disturbance activities also increase the likelihood of noxious and non-native, invasive species establishment which reduces (by out-competing native species) the amount of available forage vegetation. Construction of ROWs and fences, have the potential to impact wildlife habitat through habitat fragmentation. Construction of roads leads to increased direct mortality from vehicle collisions.

### **3.3.9.3. Reasonably Foreseeable Future Actions**

RFFAs would be similar to past and present actions and include mineral development and exploration; utilities, infrastructure, and public purpose projects; access and roads; and urban development. Mineral development and exploration projects would further eliminate habitat and forage, and utility lines may further fragment habitat. The proposed Wild Horse Eco-Sanctuary would also be included within the elk deer CESA. Although there is no specific disturbance

associated with this project, increased wild horse populations would compete with big game for resources such as forage and water.

### 3.3.9.4. Cumulative Impacts

#### Proposed Action

Approximately 441,093 acres of disturbance is associated with past, present, and RFFAs (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 24 percent of the CESA. The Proposed Action would increase the surface disturbance within the CESA by less than 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent.

Implementation of the proposed EPMs as outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), are expected to minimize impacts to elk that would result from implementation of the Proposed Action. Potential impacts from the Proposed Action combined with past, present, and RFFAs include temporary displacement, loss of habitat or habitat fragmentation, and conflicts with human presence. Once activities cease, elk associated with the area are likely to re-inhabit the reclaimed areas as the vegetation returns. The intention of the Proposed Action is to provide a reliable source of water, with subsequent actions of increasing diversity and abundance of wildlife in the WSAs, thus ultimately benefiting elk in the area. As a result of the proposed EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), and the fact that the surface disturbance associated with the Proposed Action is temporary and would result in a negligible increase (less than one percent) in surface disturbance within the CESA, the Proposed Action is expected to result in a negligible incremental increase in cumulative impacts within the CESA.

#### Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts under this alternative would be similar to those described for the Proposed Action. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers in the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include temporary displacement and loss of habitat and individuals. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

#### No Action

Cumulative impacts under the No Action Alternative are expected to be major. Under the No Action Alternative, current conditions would continue, and lead to increased degradation of riparian functionality and vegetation. If conditions continue, cumulative degradation of riparian habitat could lead to major declines in wildlife habitat with the potential for no available water for wildlife consumption, including elk, at the seeps and springs within the CESA.

### **3.3.10. Antelope**

#### **3.3.10.1. Antelope CESA Boundary**

The pronghorn antelope CESA boundary includes Hunt Units 078, 105-107, and 121 (Figure 22). The majority of the antelope herd that stays in the vicinity of Spruce Mountain utilizes portions of Steptoe Valley, Antelope Valley, and where the Goshute Mountains meet the Great Salt Lake Desert range for most of the year. This CESA boundary was chosen because it includes the antelope habitat within and adjacent to the project area where most of the impacts could occur from the Proposed Action.

#### **3.3.10.2. Past and Present Actions**

Past and present surface disturbance within the CESA includes mineral development and exploration; utilities, infrastructure and public purpose sites; urban development, access and roads, and recreation. Past and present surface disturbance within the CESA also includes livestock grazing, wild horses, oil, gas, geothermal development and wildland fires. These surface disturbance activities often modify landscapes and remove vegetation resources that would otherwise be available for antelope use. These disturbance activities also increase the likelihood of noxious and non-native, invasive species establishment which reduces (by out-competing native species) the amount of available forage vegetation. Construction of ROWs, utilities, and fences has the potential to impact wildlife habitat through habitat fragmentation, and construction of roads leads to increased direct mortality from vehicle collisions. In total, 62,920 acres have been disturbed as a result of past and present actions within the CESA boundary.

#### **3.3.10.3. Reasonably Foreseeable Future Actions**

RFFAs would be similar to past and present actions and include mineral development and exploration; utilities, infrastructure, and public purpose projects; access and roads; and urban development. Mineral development and exploration projects would further eliminate habitat and forage, and utility lines may further fragment habitat. The proposed Wild Horse Eco-Sanctuary would also be included within the antelope CESA. Although there is no specific disturbance associated with this project, increased wild horse populations could compete with big game for resources such as forage and water.

#### **3.3.10.4. Cumulative Impacts**

##### **Proposed Action**

Approximately 471,238 acres of disturbance is associated with past, present, and RFFAs (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 19 percent of the CESA. The Proposed Action would increase the surface disturbance within the CESA by less than 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent.

Implementation of the proposed EPMS outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21), are expected to minimize impacts to antelope that would result from implementation of the Proposed Action. Potential impacts from the Proposed Action combined with past, present, and RFFAs include temporary displacement, loss of habitat or habitat

fragmentation, and conflicts with human presence. Once activities cease, antelope associated with the area are likely to re-inhabit the reclaimed areas as the vegetation returns. The intention of the Proposed Action is to provide a reliable source of water with a subsequent action of increasing diversity and abundance of wildlife in the WSAs, thus ultimately benefiting antelope in the area. As a result of the proposed EPMs, and the fact that the surface disturbance associated with the Proposed Action is temporary and would result in a negligible increase (less than one percent) in surface disturbance within the CESA, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the CESA under the Proposed Action.

#### Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts under this alternative would be similar to those described for the Proposed Action. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers to antelope as described in the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include temporary displacement and loss of habitat and individuals. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

#### No Action

Cumulative impacts under the No Action Alternative are expected to be major. Under the No Action Alternative, current conditions would continue, and lead to increased degradation of riparian functionality and vegetation. If conditions continue cumulative degradation of riparian habitat could lead to major declines in wildlife habitat with the potential of no available water for wildlife consumption, including pronghorn antelope, at the springs and seeps with the CESA.

### **3.3.11. Wild Horses**

#### **3.3.11.1. Wild Horse CESA Boundary**

The wild horse CESA boundary includes the Goshute, Antelope Valley, and Spruce-Pequop HMAs (Figure 23). The wild horse CESA was developed to assess impacts from the Proposed Action and past, present, and RFFAs to the wild horse population in the project area. This CESA boundary was chosen because it includes the management areas for the wild horses that may be impacted from the Proposed Action. The HMAs encompass the project area as well as the adjacent use areas.

#### **3.3.11.2. Past and Present Actions**

Past and present surface disturbance within the CESA includes mineral development and exploration operations, utilities, infrastructure and public purpose sites, oil, gas and geothermal development, urban development, access and roads, livestock grazing and recreation. Wildland fires have also impacted approximately the CESA.

As stated above, these surface disturbance activities often modify landscapes and remove vegetation resources that would otherwise be available for wild horse use. These disturbance

activities also increase the likelihood of noxious and non-native, invasive species establishment which reduces (by out-competing native species) the amount of available forage vegetation. Construction of ROWs, utilities, and fences has the potential to impact wild horse habitat through habitat fragmentation, and construction of roads leads to increased direct mortality from vehicle collisions.

### **3.3.11.3. Reasonably Foreseeable Future Actions**

RFFAs would be similar to past and present actions and include mineral development and exploration operations. Mineral development and exploration projects would further eliminate habitat and forage area and may further fragment habitat. The proposed Wild Horse Eco-Sanctuary would also be a reasonable foreseeable future action.

### **3.3.11.4. Cumulative Impacts**

#### Proposed Action

Approximately 383,151 acres of disturbance is associated with past, present, and RFFAs (including the proposed Wild Horse Eco-Sanctuary), which accounts for approximately 38 percent of the CESA. The Proposed Action would increase the surface disturbance within the CESA by less than 0.59 acres. The surface disturbance associated with the Proposed Action would increase the surface disturbance within the CESA by less than one percent.

Implementation of the proposed EPMs outlined in Section 2.1.4, “Environmental Protection Measures” (p. 21) are expected to minimize impacts to wild horses that would result from implementation of the Proposed Action. Potential impacts from the Proposed Action combined with past, present, and RFFAs include temporary displacement, loss of habitat and forage area or habitat fragmentation, and conflicts with human presence. Once activities cease, wild horses are likely to re-inhabit the reclaimed areas as the vegetation returns. As a result of the proposed EPMs, and the fact that the surface disturbance associated with the Proposed Action is temporary and would result in a negligible increase (less than one percent) in surface disturbance within the CESA, the Proposed Action would result in a negligible incremental increase in cumulative impacts within the CESA under the Proposed Action. In addition, the Proposed Action has the potential to improve spring sources that have historically provided water for wild horses.

#### Alternative 2

Alternative 2 would increase the surface disturbance within the CESA by less than one percent. Cumulative impacts to wild horses under this alternative would be similar to those described for the Proposed Action. Under this alternative, the positive benefits of improving riparian value, hydrology, and water availability at spring sources would occur; however, the positive benefits of the guzzlers to wild horses as described in the Proposed Action would not occur. Potential impacts from Alternative 2 combined with past, present, and RFFAs include temporary displacement from watering sites. However, as a result of the proposed EPMs and the fact that the surface disturbance associated with Alternative 2 would result in a negligible increase (less than one percent) in surface disturbance within the CESA, Alternative 2 would result in a negligible incremental increase in cumulative impacts within the CESA.

#### No Action Alternative

Cumulative impacts to wild horses under the No Action Alternative are expected to be major. Under the No Action Alternative, current conditions would continue, and lead to increased degradation of riparian functionality and vegetation. If conditions continue cumulative degradation of riparian habitat could lead to major declines for available water for wild horse consumption at springs and seeps within the CESA.

## **Chapter 4. List of Preparers, Consultation and Coordination**

This page intentionally  
left blank

This EA was prepared by JBR Environmental Consultants, Inc. (JBR) under the technical direction of the BLM Wells Field Office, Elko, Nevada and with the assistance of NDOW. The BLM Wells Field Office conducted an internal scoping meeting with NDOW and JBR on March 4, 2011, to determine preliminary and anticipated issues and concerns of the Proposed Action. BLM resource specialists provided further information through subsequent conversations, consultation with NDOW, field reconnaissance, and review of supporting documentation

A Notice of Proposed Action was released on January 10, 2011, which informed interested parties that natural riparian areas occurring within the Bluebell and Goshute Peak WSAs have been severely degraded and that BLM intends to prepare and provide an EA to interested parties for comment. Copies of this EA can be obtained at the BLM Wells Field Office.

## 4.1. List of Preparers

Name	Title
<b>Bureau of Land Management</b>	
Victoria Anne	Planning and Environmental Coordinator
Terri Dobis	Planning and Environmental Coordinator
Nycole Burton	Wildlife Biologist
John Daniel	Hydrologist
Mark Dean	Hydrologist
Tyson Gripp	Natural Resource Specialist
Norm Henrikson	Archaeologist
Bryan Mulligan	Natural Resource Specialist
Blaine Potts	Outdoor Recreation Planner
Bruce Thompson	Project Lead/Wild Horse and Burro Specialist
<b>JBR Environmental Consultants, Inc./Stantec</b>	
Diana Eck	Environmental Analyst
Dulcy Engelmeier	Administrative Assistant
Michele Lefebvre	Environmental Specialist
Steve Morton	Land Planner/Environmental Analyst
Kristi Schaff	Project Manager
Dave Worley	Senior Wildlife Biologist

## 4.2. Persons, Groups or Agencies Consulted

The following persons, groups, and agencies were contacted during the preparation of this document.

Name	Title
<b>Nevada Department of Wildlife</b>	
Steve Foree	Easter Region Habitat Supervisor
Alan Jenne	Habitat Biologist
Caleb McAdoo	Game Biologist for Management Unit 10
Katie Miller	Eastern Region Mining Biologist
<b>Nevada Natural Heritage Program</b>	
Eric Miskow	Biologist
<b>United States Fish and Wildlife Service</b>	
Jenny A. Ericson	Acting State Supervisor
<b>Tribal Entities</b>	
Confederated Tribes of the Goshute Indian Reservation	

### **4.3. Public Notice and Availability**

The EA will be posted to the BLM NEPA Register at <http://1.usa.gov/1P4tS61> for public review. Copies of this EA can also be obtained at the BLM Wells Field Office.

# Chapter 5. References

This page intentionally  
left blank

Anne, Victoria. 2013. Elko District Inter-Office Memo, Updates to Climate Change and the BLM-Elko District. August 1, 2013.

Barnum, Charles (Pete). 1908. How I Trap Wild Horses. *Sunset*, August. The Nevada Observer. Accessed August 6, 2012 online at: <http://www.nevadaobserver.com/>

Bureau of Land Management (BLM). 1979 to present. Water Resources Inventory Files.

Bureau of Land Management (BLM). 1981. Draft Resource Management Plan and Environmental Impact Statement. United States Department of the Interior, Bureau of Land Management, Elko District Office, Elko, Nevada.

Bureau of Land Management (BLM). 1983. Wells Resource Area Wilderness Study Report. United States Department of the Interior, Bureau of Land Management. Elko District Office, Elko, Nevada.

Bureau of Land Management (BLM). 1985. Wells Resource Management Plan and Final Environmental Impact Statement. United States Department of the Interior, Bureau of Land Management. November 22, 1985.

Bureau of Land Management (BLM). 1986. Visual Resource Inventory Handbook. H-8410-1. January 17, 1986.

Bureau of Land Management (BLM). 1987a. Elko Resource Management Plan Record of Decision. United States Department of the Interior, Bureau of Land Management, Elko District Office. March 11, 1987.

Bureau of Land Management (BLM). 1987b. Wells Wilderness Recommendations, Final Environmental Impact Statement. United States Department of the Interior, Bureau of Land Management, Elko District Office. July 27, 1987.

Bureau of Land Management (BLM). 1989. Renewable Resources Improvements Manual, 1741-1, 1989.

Bureau of Land Management (BLM). 1990. Water Developments Manual. 1741-3. 1990.

Bureau of Land Management (BLM). 1992. BLM Manual 9015, Integrated Weed Management. United States Department of the Interior, Bureau of Land Management. December 2, 1992.

Bureau of Land Management (BLM). 1998. Programmatic Environmental Assessment of Integrated Weed Management on Bureau of Land Management Lands Available online at: [http://www.blm.gov/pgdata/etc/medialib/blm/nv/field\\_offices/elko\\_field\\_office/programs/planning/elko\\_planning.Par.49208.File.dat/Programmatic%20EA%20Integrated%20Weed%20Management.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/elko_field_office/programs/planning/elko_planning.Par.49208.File.dat/Programmatic%20EA%20Integrated%20Weed%20Management.pdf)

Bureau of Land Management (BLM). 2007. Emergency Stabilization and Restoration. 1742-2, 2007.

Bureau of Land Management (BLM). 2007. Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement (BLM 2007).

Bureau of Land Management (BLM). 2008a. National Environmental Policy Act Handbook. BLM Handbook H-1790-01, Rel. 1-1547. United States Department of the Interior, Bureau of Land Management. January 30, 2008.

Bureau of Land Management (BLM). 2008b. 516 DM Revised 6840 Special Status Species Manual. 6840.06 E Nevada BLM Sensitive Species. United States Department of the Interior. Rev. 2008.

Bureau of Land Management (BLM). 2008c. BLM National List of Invasive Weed Species of Concern. Colorado BLM. Last updated 08-12-2008. Available online at: [http://www.blm.gov/co/st/en/BLM\\_Programs/botany/invasiweed.html](http://www.blm.gov/co/st/en/BLM_Programs/botany/invasiweed.html).

Bureau of Land Management (BLM). 2012. BLM Manual 6330 – Management of BLM Wilderness Study Areas. United States Department of the Interior, Bureau of Land Management. Accessed online on July 13, 2012 at: [http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information\\_Resources\\_Management/policy/blm\\_manual.Par.31915.File.dat/6330.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.31915.File.dat/6330.pdf)

Bureau of Land Management (BLM). 2012a. Wild Horse and Burro Management. Accessed on June 29, 2012 online at: [http://www.blm.gov/pgdata/content/nv/en/prog/wh\\_b.html](http://www.blm.gov/pgdata/content/nv/en/prog/wh_b.html)

Bureau of Land Management (BLM). 2012b. Antelope Complex Wild Horse Gather. Accessed on August 8, 2012 online at: [http://www.blm.gov/nv/st/en/fo/elko\\_field\\_office/blm\\_programs/wild\\_horse\\_and\\_burro/Antelope\\_Complex\\_Gather.html](http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_programs/wild_horse_and_burro/Antelope_Complex_Gather.html)

Bureau of Land Management (BLM). 2013a. Wilderness Study Areas. Accessed on March 25, 2013 online at: [http://www.blm.gov/nv/st/en/prog/blm\\_special\\_areas/wsas0.html](http://www.blm.gov/nv/st/en/prog/blm_special_areas/wsas0.html)

Dobkin, D. S. 1998. Conservation and Management of Neotropical Migrant Land Birds in the Great Basin. University of Idaho Press, Moscow. In press.

Karl, T.R., J.M. Melillo and T.C. Peterson. 2009. Global Climate Change Impacts in the United States. Cambridge University Press.

McAdoo, Caleb. 2012. Game Biologist for Management Unit 10, Nevada Department of Wildlife. Personal communication with Josh Vittori and Colleen Lavery, JBR Environmental Consultants, Inc., Reno Office.

Meehl, G.A., T.F. Stocker, W.D. Collins, P. Friedlingstein, A.T. Gaye, J.M. Gregory, A. Kitoh, R. Knutti, J.M. Murphy, A. Noda, S.C.B. Raper, I.G. Watterson, A.J. Weaver and Z.-C. Zhao, 2007: Global Climate Projections. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

National Weather Service. (NWS) 2012. National Weather Service. National Oceanic Atmospheric Administration (NOAA). Accessed in July 2012 online at: <http://nws.noaa.gov>

National Wild Horse Association (NWhA). 2012. Updates on Our Local Herds, Nevada. Accessed on June 29, 2012 online at: [http://www.nwha.us//issues/redrock\\_horses.htm](http://www.nwha.us//issues/redrock_horses.htm)

NatureServe Explorer (NatureServe). 2012. NatureServe Explorer Species Index. <http://www.natureserve.org>. Accessed on multiple occasions during 2012.

- Nevada Department of Agriculture (NDOA). 2005. Policy Statement Regarding Noxious Weed Abatement Statutes NRS 555.005-201 and NAC 555.010 available online at: [http://agri.nv.gov/nwac/PLANT\\_MoxWeedList.htm](http://agri.nv.gov/nwac/PLANT_MoxWeedList.htm)
- Nevada Department of Wildlife (NDOW). 2011. Species List Request Response for the Bluebell and Goshute Peak WSAs Riparian Improvements and Water Developments Project, Elko County, Nevada. JBR Project Number B.A11087.00. Elko County, Nevada. April 25, 2011.
- Nevada Department of Wildlife. (NDOW). 2012. *2011-2012 Big Game Status*. Accessed on July 6, 2012 online at: <http://www.ndow.org>
- Nevada Natural Heritage Program (NNHP). 2010. Animal and Plant At-Risk Tracking List. November 2012. Available online at: <http://heritage.nv.gov/sites/default/files/Library/track.pdf>
- Nevada Natural Heritage Program (NNHP). 2011. Species List Request Response for the Bluebell and Goshute Peak WSAs Riparian Improvements and Water Developments Project, Elko County, Nevada. JBR Project Number B.A11087.00. Elko County, Nevada. March 28, 2011.
- National Invasive Species Council (NISC). 2011. Executive Order 13112 to ensure Federal programs and activities to prevent and control invasive species are coordinated, effective, and efficient. Accessed in June 2011 online at: <http://www.invasivespecies.gov/>
- Prichard, D., C. Bridges, S. Leonard, R. Krapf, and W. Hagenbuck. 1994. Riparian area management: process for assessing proper functioning condition for lentic riparian-wetland areas. TR 1737-11. Bureau of Land Management, BLM/SC/ST-94/008+1737, Service Center, CO. 60pp.
- Thompson, Bruce. 2014. Personal Communication between Kristi Schaff of Stantec and Bruce Thompson of the Elko District BLM, phone call on May 23, 2014.
- Timmerman, A.J. Oberhuber, A. Bacher, M. Esch, M. Latif, E. Roeckner. 1999. Increased El Nino Frequency in a Climate Model Forced by Future Greenhouse Warming. *Nature*. 398: 694-697.
- Udvardy, M. D. F. 1994. Field Guide to Birds Western Region. Revised Edition. National Audubon Society. Rev. Farrand, J. Jr. Knopf, New York. September 27, 1994.
- United States General Accounting Office (USGAO). 1993. Livestock Grazing on Western Riparian Areas. Gaithersburg, Maryland. 44 pp.
- United States Geological Survey (USGS). 2004. National Gap Analysis Program. Southwest Regional GAP Analysis Project – Land Cover Descriptions. RS/GIS Laboratory, College of Natural Resources, Utah State University. <http://gapanalysis.usgs.gov/>
- Wildlife Action Plan Team (WAPT). 2006. Nevada Wildlife Action Plan. Nevada Department of Wildlife, Reno, Nevada. June 2006.