

**FINAL  
ENVIRONMENTAL ASSESSMENT**

**Paiute Canyon Grazing Allotment**

DOI-BLM-NV-C020-2013-0033-EA

U.S. Department of the Interior  
Bureau of Land Management  
Carson City District  
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**January 2015**



It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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## **1.0 INTRODUCTION/PURPOSE AND NEED**

### **1.1 Introduction**

The Bureau of Land Management (BLM) Sierra Front Field Office, proposes in this final environmental assessment (EA) to issue a new term livestock grazing permit for the Paiute Canyon Grazing Allotment (Allotment). The Allotment is located approximately five miles north of Reno, Nevada (Figure 1). The Allotment encompasses approximately 69,881 acres of public lands, 17,921 acres of private lands, and 1,975 acres of Bureau of Indian Affairs lands held in trust for the Reno-Sparks Indian Colony, and is located within Washoe County, Nevada (Figure 2).

The Allotment's permit is currently held by Alan or Lillian Mendes and authorizes 400 cattle from March 1 until February 28 each year, for a total of 4,800 animal month units (AUMs). The permit was modified by the 1999 Memorandum, amending the 1989 Allotment Management Plan (AMP), which limits cattle to 350 head for a total of 4,200 AUMs annually. The Allotment is divided into six pastures (Figure 3), each with a different season of use, number of cattle, and authorized AUMs (Tables 2 and 3). The current permit was issued under the Appropriations Act (Section 426 of Title IV of Division E of Public Law 111-8) on September 1, 2010 and would expire on August 31, 2020. The current permit contains standard terms and conditions and are included in Appendix A.

In 2014, a review of the Allotment was conducted by an interdisciplinary team of BLM specialists. This review considered vegetative trend and condition, rangeland health, livestock utilization, plant and animal habitat, riparian health and water quality. As a result of this review, an Allotment Evaluation (Evaluation) (Attachment A) and Standards and Guidelines (S&Gs) Determination document (Attachment B) were completed and are available on the project website.

The Proposed Action is to issue a new 10-year term livestock grazing permit that would authorize grazing use for up to 300 cattle for a maximum period of June 1 to March 31 for a total of 3,000 AUMs. While that would be the maximum permitted use, the allowable use each year would be governed by the new AMP (Attachment C). Based on current conditions in 2015, the allowable use would start at 210 cattle from July 1 to March 31 for 1,900 AUMs.

The goal is an increase in sustained recruitment of deep-rooted perennial bunchgrasses. The turnout dates and the number of livestock would be adjusted based on monitoring data and in accordance with the AMP. The standard terms and conditions would apply (Appendix A).

The Proposed Action includes range improvements to modify livestock distribution and management. Improvements include a new holding corral on the Shovel Springs Pasture, and catch corrals in the Shovel Springs, Dogskin, Fall and Hungry Valley pastures. The Dogskin Pipeline (RI #545035) would be extended along with new water troughs and water hauls on the west side of the Warm Springs/Hungry Valley Pasture (Figure 4). The BLM does not hold the water rights to the water.

The BLM proposes to treat noxious weeds with herbicides. There are a number of vectors that can spread noxious weeds. Grazing animals, wind, vehicles and equipment, and people can spread vegetative material and/or seed from one site to another. The BLM has an on-going program to monitor and treat non-native plant species and noxious weeds. The BLM has mapped populations of weeds in the Allotment (Figures 5-7), which are listed in Table 1.

**Table 1. Noxious Weeds and Scientific Name.**

Common Name	Scientific Name
Hoary Cress	<i>Cardaria draba</i>
Canada thistle	<i>Cirsium arvense</i>
Musk Thistle	<i>Carduus nutans</i>
Perennial Pepperweed	<i>Lepidium latifolium</i>
Scotch Thistle	<i>Onopordum acanthium</i>
Yellow Star-Thistle	<i>Centaurea solstitialis</i>

For some noxious weed species such as perennial pepperweed, mechanical treatment by hand cutting is ineffective, due to the extensive root and rhizome networks produced by these plants and their capability to grow new shoots in response to cut stems. By chemically treating these noxious weeds, the BLM would curb their spread in the Allotment and to other areas outside the Allotment.

Since the 1860's, many bunchgrass and sagebrush-bunchgrass communities, which dominated the Intermountain West, have shifted to pinyon and juniper woodland (*Pinus monophylla-Juniperus osteosperma*) or introduced annual-dominated communities (West 1984, Miller et al. 1994). Studies conclude that barring some major environmental change or management action, loss of understory species would occur and decreased fire frequency would continue until trees dominate most of the sites favorable to their expansion. This tree dominance then jeopardizes the historic woodland sites because under the right conditions, a crown fire could result in a stand replacement wildfire with catastrophic consequences because of the continuous tree canopy. Studies further show that in pinyon-juniper communities that are overstocked, the ability of the understory to respond after a fire is dramatically reduced and potentially opens the site to the invasion by exotics. Any treatments or rehabilitation of these areas could be difficult and costly. The BLM proposes to remove juniper trees on approximately 2,173 acres in order to improve greater sage-grouse (*Centrocercus urophasianus*) habitat characteristics and modify fire behavior by reducing fire intensity and spotting potential (Figure 8).

To address critical habitat for Webber's ivesia (*Ivesia webberi*), the BLM proposes to construct fencing and enclose a 90 acre area of public land to protect the occupied habitat. The BLM has documented that over the past two decades, user-created routes caused by off-highway vehicles (OHV) have proliferated in the area and have fragmented the occupied habitat. To prevent further deterioration of the habitat, the BLM proposes to enclose the occupied habitat by fencing, which would result in the closure of approximately 1.3 miles of routes<sup>1</sup>.

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<sup>1</sup> A route can be any travel route, from a user-created single track or two-track trail, to a single lane unimproved road. There are no BLM maintained routes within the proposed enclosure area.

## **1.2 Purpose and Need**

The purpose of the Proposed Action is to modify current grazing practices in the Allotment to continue to meet or make significant progress toward attainment of objectives found in the Carson City Field Office Consolidated Resource Management Plan (CRMP), and in the Standards for Rangeland Health & Guidelines for Grazing Management, Sierra Front Northwestern Great Basin Area. Management of livestock grazing comes through permittee compliance with the provisions of a term livestock grazing permit issued under the authority of 43 CFR Subpart 4100, that provides the parameters and guidelines for livestock use of the range resources on the Allotment.

The need for the Proposed Action is to provide for appropriate livestock grazing on public lands in accordance with all applicable laws (such as but not limited to the Taylor Grazing Act and the Federal Land and Policy and Management Act), regulations, including but not limited to 43 CFR 4130.1(a) (2005) which states, “Grazing permits or leases authorize use on the public lands and other BLM-administered lands that are designated in land use plans as available for livestock grazing,” while achieving or making progress towards achieving applicable land health standards and conforming with applicable guidelines for livestock management (S&G’s)<sup>2</sup>.

The purpose and need for the range improvements is to aid in livestock distribution and efficient livestock management. More uniform distribution of cattle would result in more uniform forage utilization and prevent areas of heavy use.

The need for the herbicide treatment of noxious weeds is that these plant species can reduce native plant diversity, reduce wildlife habitat and quality, alter the fire regime, scale and intensity, and can deplete soil moisture and nutrient levels.

The purpose of the proposed fuels treatment is to:

- Restore and maintain wildlife habitat;
- Reduce the potential of large-scale high severity wildland fire; and
- Provide for public and firefighter safety and protection of property and infrastructure.

The need for the proposed enclosure fencing for Webber’s ivesia is to respond to recent decisions by the U.S. Fish and Wildlife Service (FWS) to list this plant as threatened, and to designate critical habitat. The occupied habitat within the Allotment is being adversely affected by livestock grazing and OHV use.

## **1.3 Scoping and Issue Identification**

On August 14, 2013 the BLM mailed a scoping letter to individuals and organizations on the project “interested party” list. The scoping period closed on August 30, 2013. The BLM received no public comments during the scoping period.

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<sup>2</sup> The applicable land health standards and guidelines for livestock grazing on the Allotment are those that apply to The “Sierra Front-Northwestern Great Basin Area” of Nevada BLM-managed lands, which were developed pursuant to 43 CFR 4180.2(b) (2005), and were approved by the Secretary of the Interior on February 12, 1997. A copy of these S&G’s may be obtained from the Carson City District Office.

On December 13, 2013, this project was considered during an interdisciplinary team meeting. Issues discussed included:

- What is the status of deep-rooted perennial bunchgrass recruitment in the Allotment?
- What is the impact of grazing on riparian areas?
- What is the impact of frequent large fires on the Allotment?
- What is the impact of juniper encroachment into the sagebrush steppe vegetation?
- What is the impact of OHV use on the proposed critical habitat for Webber's ivesia within the Allotment?

On July 2, 2014, the BLM sent information and maps on this project to the Reno-Sparks Indian Colony (RSIC) and the Pyramid Lake Paiute Tribe (PLPT). The BLM made a presentations on the project to the RSIC and PLPT council meetings on July 16 and July 18, 2014, respectively. Phone calls to follow-up on the letters were made to RSIC on July 24, 2014 and to PLPT on July 29, 2014. The Allotment surrounds the RSIC Hungry Valley community and the Tribe has an interest in how these lands are managed. Tribal consultation is on-going until a decision is signed.

#### **1.4 Decision to Be Made**

The Authorized Officer would decide whether to issue a new term livestock grazing permit, including range improvements, and if so, its terms and conditions. *Separately*, the Authorized Officer would decide whether to implement the fuels treatments, weed treatments and exclosure fencing around the Webber's ivesia critical habitat. As described in Section 2.2.5, this last action would also require the publication of a restriction order in the *Federal Register*.

#### **1.5 Land Use Plan Conformance Statement**

The Proposed Action and Current Management Alternatives described below are in conformance with the CRMP, pages LSG-1 & LSG-2 and is as follows:

- Maintain or improve the condition of the public rangelands to enhance productivity for all rangeland and watershed values;
- Initially, manage livestock use at existing levels (4,800 AUMs – cattle);
- Provide adequate, high quality forage for livestock by improving rangeland condition;
- Improve overall range administration;
- Maintain a sufficient quality and diversity of habitat and forage for livestock, wildlife, and wild horses through natural regeneration and or vegetation manipulation methods;
- Improve the vegetation resource and range condition by providing for the physiological needs of key plant species;
- Reduce soil erosion and enhance watershed values by increasing ground cover and litter; and
- Improve riparian-wetland ecosystems to achieve a healthy proper functioning condition that assures biological diversity, productivity and sustainability.

On page FIR-2:

- “Restore fire as an integral part of the ecosystem; improve the diversity of vegetation and to reduce fire hazard fuels.”

On page LSG-8:

- “Application of herbicides...would be in accordance with procedures established in Bureau Manual 9222...to ensure non-impairment of other than target species.”

On page SSS-3:

- “Use fencing, emergency OHV closure, no disposal of public lands, minerals’ coordination, or any other legal means necessary to protect identified T/E plant populations...”

As the No Grazing Alternative would be inconsistent with the CRMP, (the CRMP identified the lands within the Allotment as “available” for livestock grazing), selection of the No Grazing Alternative would require concurrent amendment of the CRMP (not within the scope of this final EA). Under 43 CFR 1610.5-3, all actions approved or authorized by the BLM must conform to the existing land use plan.

## **1.6 Relationships to Statutes, Regulations and Other Plans**

The Proposed Action and Alternatives are consistent with the following documents:

- Taylor Grazing Act of 1934 as amended;
- Federal Land Policy and Management Act of 1976;
- Public Rangelands Improvement Act of 1978;
- Title 43 of the Code of Federal Regulations Subpart 4100 – Grazing Administration;
- Noxious Weed Act of 1974;
- National Environmental Policy Act of 1969;
- Standards and Guidelines for Nevada's Sierra Front-Northwestern Great Basin Area (2003);
- The National Fire Plan, Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001);
- Protecting People and Natural Resources, A Cohesive Fuels Treatment Strategy (2006);
- The Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy, November 2004;
- Memorandum of Understanding Between the BLM and FWS to Promote the Conservation of Migratory Birds – BLM 2010-110;
- National Historic Preservation Act (16 USC 470f), implemented through the *State Protocol Agreement between BLM Nevada and the Nevada State Historic Preservation Office for Implementing the National Historic Preservation Act* (2012) under the provisions of the National Programmatic Agreement between the BLM and the Advisory Council on Historic Preservation; and
- Consultation and Coordination with Indian Tribal Governments – EO 13175.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

### 2.1 Alternative A: No Action Alternative (Current Management)

The Allotment's current permit is held by Alan or Lillian Mendes and authorizes grazing of 400 cattle from March 1 to February 28, each year, for a total of 4,800 AUMs. The authorized levels of grazing were modified under the 1999 Memorandum and reduced to 350 cattle from March 1 to February 28, each year, for a total of 4,200 AUMs. The 1999 Memorandum also made changes to pasture rotation which are listed in Tables 2 and 3 (BLM 1999). Under the No Action Alternative (Current Management), permitted grazing would be reauthorized in a new 10-year permit. The standard terms and conditions included in the current permit would apply.

**Table 2. Authorized Use Years 1 and 2.**

Pasture	Number of Livestock	Grazing Period Start	Grazing Period End	AUMs
Shovel Springs	350	4/1	6/15	875
	100	6/16	7/15	100
Incandescent Rocks	250	6/16	7/15	250
	100	7/16	8/15	100
Tule Peak	150	7/16	8/15	150
	250	8/16	10/15	500
Dogskin	100	7/16	10/15	300
Fall/Fall Field/Private*	350	10/16	11/15	350
Warm Springs/Hungry Valley	350	11/16	3/31	1,575
			<b>Total AUMs</b>	4,200

**Table 3. Authorized Use Years 3 and 4.**

Pasture	Number of Livestock	Grazing Period Start	Grazing Period End	AUMs
Warm Springs/Hungry Valley	350	2/16	6/15	1,400
	100	6/16	7/15	100
Incandescent Rocks	250	6/16	7/15	250
	100	7/16	8/15	100
Tule Peak	150	7/16	8/15	150
	250	8/16	10/15	500
Dogskin	100	7/16	10/15	300
Fall/Fall Field/Private*	350	10/16	11/15	350
Shovel Springs	350	11/16	2/15	1,050
			<b>Total AUMs</b>	4,200

\*This naming convention has been changed in Tables 4-6 to "Fall" pasture.

Approximately 16 miles of previously authorized and constructed Allotment boundary and pasture fencing would be maintained, as would enclosure fencing constructed around Paiute Spring #3 and #5. Approximately three miles of fencing previously constructed to enclose a portion of the Carson Wandering Skipper (CWS) Area of Critical Environmental Concern (ACEC) to prevent OHV use and grazing in occupied habitat would be maintained.

Under the No Action Alternative (Current Management), there would be no weed and fuels treatments, no new range improvements, and no fencing to protect Webber's ivesia occupied/critical habitat.

## 2.2 Alternative B: Reduction to Season of Use and AUMs (Proposed Action)

### 2.2.1 Livestock Grazing

The Proposed Action is to issue a new 10-year term livestock grazing permit that would authorize grazing use for up to 300 cattle for a maximum period of June 1 to March 31 (3,000 AUMs). The Proposed Action represents a 38 percent reduction in permitted AUMs. While that would be the maximum permitted use, the allowable use each year would be governed by the AMP. Based on current drought conditions in 2015, the allowable use would start at 210 cattle from July 1 to March 31 for 1,900 AUMs. Tables 4-6 describe the initial pasture rotations for the Allotment.

**Table 4. Proposed Initial Use Year 1.**

Pasture	Grazing Period Start	Grazing Period End
Dogskin	7/1	8/10
Fall	8/11	8/31
Tule Peak	9/1	10/1
Incandescent Rocks	Rest	
Warm Springs/Hungry Valley <sup>1</sup>	10/2	1/10
Shovel Springs	1/11	3/31

**Table 5. Proposed Initial Use Year 2.**

Pasture	Grazing Period Start	Grazing Period End
Fall	7/1	7/21
Tule Peak	Rest	
Incandescent Rocks	7/22	8/15
Dogskin	8/16	9/27
Shovel Springs	9/28	12/17
Warm Springs/Hungry Valley <sup>2</sup>	12/18	3/31

**Table 6. Proposed Initial Use Year 3.**

Pasture	Grazing Period Start	Grazing Period End
Incandescent Rocks	7/1	7/25
Fall	7/26	8/17
Tule Peak	8/18	9/19
Dogskin	Rest	
Warm Springs/Hungry Valley <sup>1</sup>	9/20	1/4
Shovel Springs	1/5	3/31

<sup>1</sup> Grazing would start in the north end of WS/HV and finish in the south end.

<sup>2</sup> Grazing would start in the south end of WS/HV and finish in the north end.

If vegetation monitoring demonstrates an increase in sustained recruitment of deep-rooted perennial bunchgrasses, the grazing period start dates and the number of livestock turned out would be increased in accordance with the AMP. The grazing period start dates and number of livestock may also be adjusted to achieve vegetation management goals and/or respond to changing conditions on the Allotment. All adjustments would be in accordance with the AMP. The standard terms and conditions would apply.

The change in stocking rate is necessary to evaluate the impact of reduced grazing intensity on the recruitment of deep-rooted perennial bunchgrasses. The current 55 percent utilization (41 to 60 percent is moderate use) levels have not resulted in the recruitment of deep-rooted perennial bunchgrasses, and a lower utilization rate based on reduced numbers of cattle may be a factor in promoting deep-rooted perennial bunchgrass recruitment. The AMP allows for monitoring and adjustment in the stocking and utilization rates to allow for the evaluation of reduced stocking rates on the recruitment of deep-rooted perennial bunchgrasses.

The change in season of use is necessary to evaluate the impact of spring grazing on the recruitment of deep-rooted perennial bunchgrasses. Grazing plant populations early in the growing season may be a factor in reducing plant growth and the amount of seed produced. The AMP allows for monitoring and adjustment in the season of use to allow for evaluation of the impact of spring grazing.

The change in pasture rotation described in the AMP is necessary to evaluate the impact of alternate periods of use on the recruitment of deep-rooted perennial bunchgrasses and riparian systems proper function and condition. Grazing at the same time each year may be contributing to the lack of perennial recruitment and to the low numbers of riparian species in riparian systems. The AMP would allow for monitoring and adjustment in the pasture rotation to evaluate the impact of rest and rotation on the recruitment of deep-rooted perennial bunchgrasses and riparian systems proper function and condition.

Approximately 16 miles of Allotment boundary and pasture fencing previously authorized and constructed would be maintained, as would the enclosure fencing constructed around Paiute Spring #3 and #5 and the three miles of fencing previously constructed to enclose a portion of the CWS ACEC to prevent OHV use and grazing in occupied habitat.

### **2.2.2 Range Improvements**

To better manage livestock distribution, four catch corrals and one holding corral would be installed. The four catch corrals would be installed in the Shovel Springs, Dogskin, Fall and the Hungry Valley pastures (Figure 3). The catch corrals would be constructed on T-posts and netting wire, with one side utilizing an existing Allotment fence. The dimensions would be approximately 40 feet by 10 feet in a funnel shape and 60 feet long. No water resources would be needed, as these would be used for limited duration while livestock are moved from one pasture into another. The holding corral would be located in the Shovel Springs Pasture. It would be constructed on T-posts and netting wire, include a pipe gate and an L-shaped 60-70 foot catchment wing adjacent to the gate. It would utilize existing water sources. Installation of the four corrals and livestock operations would cause permanent disturbance to less than one acre of public lands.

The existing underground Dogskin Pipeline would be extended to the north and south to enable the permittee to place new troughs along the new extended portions. The new pipelines would be installed underground and extend for approximately two miles each (Figure 4). The existing pipeline is 1.25 inches in diameter; the new extension pipelines would be 1.25 inches in diameter. The new pipelines would be placed within a trench approximately 24 inches deep, by 24 inches wide. The trenches would be cut by backhoe or similar mechanized equipment. Along

each new pipeline extension, up to two new water trough complexes consisting of three tires would be placed and filled as needed to assist in the distribution of livestock. The new trough complexes would be placed approximately mid-point along the pipeline extension and at the end point. Each water trough complex would hold approximately 500 to 600 gallons of water. Since a pipeline diverts a fixed amount of water from the spring(s), adding extensions to it would redistribute that water among existing locations; therefore new trough complexes would not result in increased demand to the source spring(s). Installation of the new pipeline extensions is anticipated to take approximately six weeks to complete. Installation of the pipelines would result in short-term disturbance to approximately 14 acres of public lands. Disturbed areas would be seeded when precipitation levels support successful germination of seed, with a BLM-approved seed mix of species most likely to germinate in low precipitation areas.

Three permanent water hauls would be established on the west side of the Allotment (Figure 4). Multiple troughs (six to eight), would be placed at each of the three water haul sites to better distribute the cattle within the water haul area. Water hauls would be placed in previously disturbed areas.

### 2.2.3 Weed Treatments

To address the presence of noxious weeds within the Allotment and within one-mile of the Allotment boundary, the BLM has identified 26 units in Table 7, consisting of approximately 844 acres, that would be treated with BLM-approved herbicides (Figures 5-7).

**Table 7. Unit Number, Unit Acres, Noxious Weeds Present.**

Unit Number	Unit Acres*	Species Present**
1	157.02	Scotch Thistle
2	.07	Perennial Pepperweed
3	.02	Scotch Thistle
4	.02	Musk Thistle
5	141.65	Scotch Thistle, Hoary Cress, Yellow Star-Thistle, Perennial Pepperweed
6	.81	Scotch Thistle, Hoary Cress
7	6.56	Perennial Pepperweed
8	.12	Perennial Pepperweed
9	.39	Scotch Thistle
10	.01	Hoary Cress
11	.56	Scotch Thistle
12	.02	Perennial Pepperweed
13	.02	Yellow Star-Thistle
14	.02	Perennial Pepperweed
15	.20	Perennial Pepperweed
16	.67	Perennial Pepperweed, Hoary Cress
17	36.04	Scotch Thistle
18	.12	Hoary Cress
19	.64	Scotch Thistle
20	67.14	Yellow Star-Thistle
21	.02	Scotch Thistle, Hoary Cress, Yellow Star-Thistle, Perennial Pepperweed, Canada Thistle
22	410.36	Hoary Cress

Carson Wandering Skipper ACEC		
23-26	22.3	Perennial Pepperweed, Hoary Cress, Musk Thistle, Scotch Thistle

\* Unit acres based on public and private lands. No BLM work would occur on private lands.

\*\* Based on surveys conducted between 2008 and 2011.

The application of herbicides would be in compliance with Informational Bulletin No. 2014-069 and the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS) and Record of Decision* (BLM 2007), which is hereby incorporated by reference. Several treatment units occur partially on private lands. The BLM would coordinate with the private land owner to treat the weeds present. No BLM actions would occur on private lands.

The Proposed Action would also include the option, in coordination with the AMP assessment process, to include protein supplements during dormant season grazing to encourage cattle to eat dried cheatgrass (*Bromus tectorum*), reducing both the non-native plant species and the fine fuel load.

#### *Chemical Treatment Description.*

Herbicides would be used to control and/or eliminate areas of noxious weeds. Chemical methods include the use of backpack sprayers, all-terrain vehicles mounted with a power sprayer (when allowed), or a truck mounted with a power sprayer. The chemicals would be either liquid or granular form.

Approved herbicides include those in the PEIS and subsequent updates to lists of BLM-approved herbicides. As new active ingredients become available and allowed for BLM use, they would be considered for use. All personnel applying restricted use herbicides would be a Certified Pesticide Applicator or under the direct supervision of one. Table 8 lists the known noxious weeds in the Allotment and the active ingredient that would be used to eliminate or control the species. The application rate, procedures and restrictions would be within label rates and according to direction in the PEIS.

**Table 8. Noxious Weeds and Active Ingredient.**

Common Name	Active Ingredient
Hoary Cress	2, 4-D
Canada thistle	2, 4-D
Musk Thistle	2, 4-D
Perennial Pepperweed	Glyphosate, 2, 4-D
Scotch Thistle	2, 4-D
Yellow Star-Thistle	2, 4-D

#### *Standard Operating Procedures.*

The following Standard Operating Procedures (SOPs) would be followed during treatments, in addition to others described in Appendix B of the PEIS:

- Conduct a site survey prior to treatment in a proposed area documenting areas of concern including waterways, wilderness study areas, private property, cultural sites or the presence of sensitive species/habitat;
- Determine the efficacy of a product on a target weed species through manufacturer, government, scientific and user testimony;

- Ensure the product is labeled for the targeted weed and/or project site; consider the rate of application and weigh product labeling instructions and restrictions against site-specific variables;
- Use chemicals authorized by BLM pesticide use proposals;
- Contact private land owners, through written notice or by phone, with property in the vicinity of the proposed treatment unit;
- The BLM or contracted applicators would conduct pesticide handling training and risk management analysis for applicators prior to project implementation;
- Verify treatments are conducted or supervised by BLM Certified Pesticide Applicators;
- Maintain and frequently update all appropriate product labels and Material Safety Data Sheets;
- Use GPS/GIS technology to map and estimate size of infestation and treatment unit;
- Conduct, evaluate and post-treatment monitor project through reporting; and
- Complete a “lessons learned” evaluation following each treatment session.

#### *Monitoring.*

Treatment units would be monitored to determine whether the treatment was successful given the species present. Monitoring activities may include site re-visits, the collection of additional GIS data, review of any pre and post treatment photo points, and use of permanent transects. Re-application of herbicides may be necessary. Intensively treated units may require restoration of native plants through broadcast seeding. Monitoring would also be used to determine the locations of new noxious weed infestations. In addition to the units described above and depicted in Figures 5-7, newly discovered areas of noxious weeds would be treated following the same procedures described in Section 2.2.7.

#### *Other Treatment Methods.*

To effectively treat and remove noxious weeds, treatment methods in addition to the application of herbicides may be necessary. Mechanical treatments would be implemented following the same procedures described in Section 2.2.7. Mechanical treatments may include use of hand-held power cutters to cut the noxious weeds, uproot plants by hand, and removal of root and rhizome network by hand.

### **2.2.4 Fuels Treatments**

Juniper trees would be removed on approximately 2,173 acres in order to improve greater sage-grouse habitat characteristics and modify fire behavior by reducing fire intensity and spotting potential. The treatment units are located in the Tule and Fall pastures. (Figure 8). Juniper trees would be lopped and scattered on site with hand and small mechanized tools (chainsaws). Hand treatments would be utilized to promote healthy, productive, and diverse habitats in the sagebrush and riparian communities.

Depending on BLM funding, staff availability and workload priorities, the fuels treatment may be completed in one effort that would take approximately one to three months to complete, or in phases that may take multiple years to complete. Crew size would range from two to 20 people. Motorized vehicles would remain on existing roads.

#### *Treatment Design*

This project would manage the treatment area in Phase 1 woodland development (Tausch et al. 2009). Trees are present but shrubs and grasses are the dominant vegetation that influences ecological processes on the site. Stump height would be less than six inches and slash height would not exceed two feet in depth. Treatment area edges would be irregular in shape.

#### *Post Treatment Management*

The treatment area would require periodic maintenance to remain effective for fire behavior modification and enhanced greater sage-grouse habitat characteristics. Monitoring would be conducted periodically to assess changes in fuel loads and habitat characteristics in the treatment area. When fuel loads increase to unacceptable levels or habitat characteristics are degraded to an unacceptable level, maintenance actions would be initiated.

#### *Adaptive Management/Monitoring*

The principle of adaptive management would be used as treatments are applied and monitored for effectiveness in meeting project objectives. Monitoring would be conducted throughout the treatment area both during and after implementation. Monitoring would consist of surveys to:

- Ensure that the initial fuel treatment objectives are met;
- Evaluate fuel load recovery;
- Evaluate the need to remove conifers that were passed over the first time;
- Evaluate habitat characteristics; and
- Identify invasive species for subsequent treatment.

### **2.2.5 Webber's Ivesia Exclosure Fencing and Route Closure**

To address Webber's ivesia critical habitat, the BLM proposes to install exclosure fencing around approximately 90 acres of public lands located in the Shovel Springs Pasture (Figure 9). The fencing would be approximately 10,840 feet in length and would meet BLM standards, including measures to minimize impacts to wildlife. Installation of the exclosure fencing would result in temporary disturbance to less than one acre of public land.

The BLM would issue a temporary restriction order to close 1.3 miles of routes within the proposed exclosure area. This final EA provides the analysis necessary for this order, which would be published in the *Federal Register*, per BLM Instructional Memorandum (IM) No. 2010-008, Change 1. The authority for this order is found at 43 CFR 8364.1. This restriction orders would apply to the following section of the Reno, Nevada USGS 7.5 minute quad: T 21E, R20E, Section 20. This order would remain in effect until a permanent closure is made in the Travel Management Plan or Resource Management Plan. Only after that permanent closure is approved would the BLM proceed to reclaim/rehabilitate the routes within the exclosure area.

### **2.2.6 Resource Commitments**

The following resource commitments would be implemented by the BLM to minimize or avoid potential adverse effects during project implementation:

- The new water troughs would be equipped with escape ramps for wildlife;
- There are no known active leks in the Allotment (the nearest active lek is three miles north of the Allotment boundary). If an active lek is located within 3.2 miles of a fuels

treatment unit, no fuels treatments would occur during the breeding season (March 1 to May 15) in that unit;

- No fuels treatments would occur within known nesting and early brood-rearing habitat (generally within 3.2 miles of an active lek) between March 15 and June 30;
- Fuels treatment units would be surveyed to determine whether noxious weeds are present, and application of herbicides may occur at a later date;
- Based on soils with a high likelihood of their occurrence, prior to the implementation of range improvements, fuels treatments, weed treatments and the Webber's ivesia enclosure fencing, the BLM would complete surveys to determine whether BLM sensitive plant species are present, and if so include measures to minimize or avoid impacts to occupied habitat during implementation;
- The BLM would coordinate with the permittee to minimize impacts to livestock operations when conducting the fuels and weed treatments;
- Herbicide treatments of noxious weeds in and adjacent to the CWS ACEC would be deferred between May 1 and July 31, encompassing the CWS flight season; and
- Installation of fencing around Webber's ivesia occupied habitat would be deferred between May 1 and June 30, considered the flowering season for the plant.

### **2.2.7 Use of Existing Analysis**

This final EA includes site-specific analysis for the fuel and weed treatments described in Section 2.2 and may be tiered to for treatments in other locations within the Allotment. The BLM would identify the new treatment area, complete any required compliance under Section 106 of the National Historic Preservation Act, would document whether there is any new information or circumstances (in a Determination of NEPA Adequacy), and if appropriate, issue a Decision Record.

## **2.3 Alternative C: No Grazing Alternative**

### **2.3.1 Livestock Grazing**

Under the No Grazing Alternative, the BLM would not issue a new term livestock grazing permit for the Allotment. No livestock would be authorized on public lands within the Allotment at this time. The CRMP has identified the lands within the Allotment as available for livestock grazing; a decision to implement a No Grazing Alternative would not be consistent with the CRMP. Under 43 CFR 1610.5-3, all actions approved or authorized by the BLM must conform to the existing land use plan. Actions out of conformance with the CRMP would require a land use plan amendment, which is outside the scope of this final EA.

### **2.3.2 Range Improvements**

Under the No Grazing Alternative, the BLM would not authorize new range improvements. Internal (pasture) fences would be considered for removal, although approximately 16 miles of Allotment boundary fencing would likely remain. The BLM would maintain the enclosure fencing constructed around Paiute Spring #3 and #5 and the three miles of fencing previously constructed to enclose a portion of the CWS ACEC to prevent wild horse and OHV use from damaging the habitat.

### **2.3.3 Weed Treatments**

Under the No Grazing Alternative, the BLM would implement the weed treatments as described in the Proposed Action (see Section 2.2.3).

### **2.3.4 Fuels Treatments**

Under the No Grazing Alternative, the BLM would implement the fuels treatments as described in the Proposed Action (see Section 2.2.4).

### **2.3.5 Webber's Ivesia Exclosure Fencing and Route Closure**

Under the No Grazing Alternative, the BLM would implement the installation of exclosure fencing around the Webber's ivesia critical habitat. Although one stressor to the plant population, livestock grazing, would no longer occur, other stresses such as fragmentation of the habitat by route proliferation caused by OHV use, would continue. Therefore enclosing the occupied habitat with fencing would be implemented by the BLM.

## **2.4 Alternative Considered but Dismissed from Further Analysis**

*Permittee Proposed Alternative.* Under this alternative, there would be no permanent change to season of use, no rotating pasture rest and fewer reduction in AUMs.

1. The permittee proposed removal of cattle during April and May for approximately two years of the permit period followed by continuation of the year round grazing currently in place.

Response to proposal: Continuation of year round grazing was considered but dismissed because it may be contributing to the lack of recruitment of deep-rooted perennial bunchgrasses. The removal for two years was considered but dismissed because arid systems take longer to recover than systems with greater precipitation and two years is an insufficient evaluation period. The Proposed Action allows for evaluation of the impacts of nine and ten month grazing periods on the recruitment of deep-rooted perennial bunchgrasses

2. The permittee proposed to reduce the number of permitted cattle to 300 head.

Response to proposal: A stocking rate of 300 head would not enable a sufficiently lower utilization rate to be evaluated for its effect on the recruitment of deep-rooted perennial bunchgrasses. The initial stocking rate in the Proposed Action of 210 head allows for a utilization rate of 35 percent during the drought in effect in 2015 and 40 percent under normal climatic conditions rather than the 55 percent under the current permit.

3. The permittee requested authorization to install range improvements including the extension of the existing Dogskin pipeline, a corral in the Shovel Springs pasture and catch pens (aka corrals) in the Shovel Springs, Hungry Valley, Fall and Dogskin pastures

Response to proposal: Requested range improvements are considered as part of the Proposed Action.

4. The permittee requested that the BLM manage wild horses within herd management areas and within appropriate numbers.

Response to proposal: The management of wild horses is outside the scope of this final EA.

### **3.0 AFFECTED ENVIRONMENT**

This chapter identifies and describes the current condition and trend of elements or resources in the human environment which may be affected by the No Action Alternative (Current Management), Proposed Action, and No Grazing Alternative. The Affected Environment is the same for all alternatives.

#### **3.1 General Setting**

The Allotment is located approximately five miles north of Reno, Nevada. Rural residential development occurs adjacent to and within the Allotment boundary. The Allotment encompasses approximately 69,881 acres of public lands, 17,921 acres of private lands, and 1,975 acres of Bureau of Indian Affairs lands held in trust for the RSIC. The Hungry Valley Recreation Area, which is completely within the Allotment boundary, is a major OHV use area (Figure 2). Topography varies from low lying valleys to high, rugged mountainous country. Elevations within the Allotment range from 4,240 feet above sea level (asl) to 8,722 feet asl. Big sagebrush/needlegrass (*Artemisia tridentata vaseyana/Achnatherum thurberianum*), and low sagebrush/needlegrass (*A. arbuscula*) plant communities dominate the Allotment. Pinyon-juniper woodlands occur primarily in the higher elevations. Two Areas of Critical Environmental Concern (ACEC) lie wholly or partially within the boundaries of the Allotment: Incandescent Rocks Natural Scenic, and the Carson Wandering Skipper.

#### **3.2 Supplemental Authorities**

Appendix 1 of BLM's NEPA Handbook (H-1790-1) identifies supplemental authorities that are subject to requirements specified by statute or executive order and must be considered in all BLM environmental documents (BLM 2008). Table 9 lists the Supplemental Authorities and their status in the Allotment. Supplemental authorities that "may be affected" by the Proposed Action or Alternatives are further described in this final EA.

**Table 9. Supplemental Authorities\*.**

Resource	Present Yes/No	Affected Yes/No	Rationale
Air Quality	Y	N	Washoe County is a non-attainment area. Under the Proposed Action there would be negligible emissions from emissions from vehicles and particulates during range improvements, fuels and weed treatments. These emissions would not affect the status of the air basin. Under the No Action Alternative (Current Management) there would be no change in emissions, and under the No Grazing Alternative there would be negligible emissions from fuels and weed treatments.
Areas of Critical Environmental Concern	Y	Y	Carried forward for analysis.
Cultural Resources	Y	N	No effect to cultural resources eligible for the National Register of Historic Places (CRR 3-3692).
Environmental Justice	N		Resource not present.
Farm Lands (prime or unique)	N		Resource not present.
Floodplains	N		Resource not present.
Invasive, Non-native Species and Noxious Weeds	Y	Y	Carried forward for analysis.
Migratory Birds	Y	Y	Carried forward for analysis.
Native American Religious Concerns	Y	N	To date no religious concerns have been identified; consultation is on-going.
Threatened or Endangered Species	Y	Y	Carried forward for analysis.
Wastes, Hazardous or Solid	N		Resource not present.
Water Quality (Surface/Ground)	Y	N	Based on surveys during riparian assessments, water quality is not affected by current grazing practices. Reduced or no grazing would likely have the same effect, therefore this resource has not been analyzed.
Wetlands/Riparian Zones	Y	Y	Carried forward for analysis.
Wild and Scenic Rivers	N		Resource not present.
Wilderness/WSA	N		Resource not present.

\*See H-1790-1 (January 2008) Appendix I Supplemental Authorities to be Considered.

*Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.*

*Supplemental Authorities determined to be Present/May Be Affected may be carried forward in the document.*

### **3.3 Resources or Uses Other Than Supplemental Authorities**

BLM specialists have evaluated the potential impact of the Proposed Action or Alternatives on these resources and documented their findings Table 10. Resources or uses that “may be affected” by the Proposed Action or Alternatives are further described in this final EA (BLM 2008).

**Table 10. Resources or Uses Other Than Supplemental Authorities.**

Resource or Issue**	Present Yes/No	Affected Yes/No	Rationale
BLM Sensitive Species (animals)	Y	Y	Carried forward for analysis.
BLM Sensitive Species (plants)	Y	Y	Carried forward for analysis.
Fire Management	Y	Y	Carried forward for analysis.
General Wildlife	Y	Y	Carried forward for analysis.
Global Climate Change	Y	N	Although there is a public and scientific debate about human-caused contributions to global climate change, no methodology currently exists to correlate greenhouse gas emissions (GHG) from the alternatives, and to what extent these contributions would contribute to global climate change.
Greenhouse Gas Emissions	Y	N	Under the No Action Alternative (Current Management) and Proposed Action there would be negligible contribution of a GHG – methane, no methodology currently exists to correlate GHG emissions from livestock grazing to any specific resource impact within the Allotment.
Land Use Authorization	Y	N	The issuance of a livestock grazing permit would not change the existing land uses or authorizations present in the Allotment. The fuels and weed treatments would have no effect on land uses.
Lands with Wilderness Characteristics	N		Pursuant to Sections 101, 201 and 202 of the Federal Land Management Policy Act, GIS spatial imagery was reviewed by the BLM. No LWC's were identified in the Allotment.
Livestock Grazing	Y	Y	Carried forward for analysis.
Minerals	Y	N	Although mining claims are present in the Allotment, none of the alternatives would affect any minerals activities.
Paleontological	N		Resource not present.
Recreation	Y	N	Although recreation occurs in the Allotment, there are no range improvements proposed such as fencing that would affect recreation activities in the Allotment.
Socioeconomics	Y	Y	Carried forward for analysis.
Soils	Y	Y	Carried forward for analysis.
Travel Management	Y	Y	Carried forward for analysis.
Vegetation	Y	Y	Carried forward for analysis.
Visual Resources	Y	N	The Allotment is primarily within VRM Class III and IV which allows for moderate to major changes to the visual character. Range improvements are consistent with these VRM classes. No range improvements are proposed in the portion of the Allotment with VRM Class II.
Wild Horses and Burros	Y	Y	Carried forward for analysis.

*\*\*Resources or uses determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.*

*Resources or uses determined to be Present/May Be Affected may be carried forward in the document.*

### 3.4 Resources Considered for Analysis

The following resources are or may be present in the Allotment and may be affected by the Proposed Action or Alternatives.

### 3.4.1 Livestock Grazing

Historic Livestock Use. Prior to the introduction of an AMP in 1989, the Allotment did not have an established grazing system. Livestock were not well distributed, and heavy forage utilization occurred in some parts of the Allotment. Forage competition between cattle, wild horses and big game was a recognized issue (BLM 1989). The 1999 Memorandum established a prescribed pasture rotation system (BLM 1999).

Current Permitted/Authorized Use. The Allotment permit is currently issued to Alan or Lillian Mendes, for 400 cattle from March 1 until February 28, for a total of 4,800 AUMs. The full active grazing preference is 4,800 AUMs. However, this was modified by the 1999 Memorandum to 350 cattle from March 1 until February 28, for a total of 4,200 AUMs. Tables 11 and 12 show the authorized use levels under the 1999 Memorandum.

**Table 11. Authorized Use Years 1 and 2.**

Pasture	Number of Livestock	Grazing Period Start	Grazing Period End	AUMs
Shovel Springs	350	4/1	6/15	875
	100	6/16	7/15	100
Incandescent Rocks	250	6/16	7/15	250
	100	7/16	8/15	100
Tule Peak	150	7/16	8/15	150
	250	8/16	10/15	500
Dogskin	100	7/16	10/15	300
Fall	350	10/16	11/15	350
Warm Springs/Hungry Valley	350	11/16	3/31	1,575
			<b>Total AUMs</b>	4,200

**Table 12. Authorized Use Years 3 and 4.**

Pasture	Number of Livestock	Grazing Period Start	Grazing Period End	AUMs
Warm Springs/Hungry Valley	350	2/16	6/15	1,400
	100	6/16	7/15	100
Incandescent Rocks	250	6/16	7/15	250
	100	7/16	8/15	100
Tule Peak	150	7/16	8/15	150
	250	8/16	10/15	500
Dogskin	100	7/16	10/15	300
Fall	350	10/16	11/15	350
Shovel Springs	350	11/16	2/15	1,050
			<b>Total AUMs</b>	4,200

The net effect is that there is alternate spring use on the Shovel Springs and the Warm Springs/Hungry Valley pastures. The current permit holder brands, vaccinates, and weans by gathering trailer loads and transporting the cattle to private lands where there are corrals and other facilities.

#### Terms and Conditions for Existing Grazing Use.

Below are the key points in the terms and conditions specified in the existing permit relative to the impacts of livestock grazing.

- Grazing use must be in accordance with the AMP approved January 11, 1989 and the grazing system modified by the 1999 Memorandum; and
- Salt and supplements must be placed ¼ mile from live water and associated riparian areas, livestock watering facilities, wet or dry meadows and aspen stands.

Actual Use. Actual use records are available from 2000 to 2012 as seen in Table 13.

**Table 13. Actual Use 2000-2012.**

Pasture	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Warm Springs/Hungry Valley</b>	1,152	1,010	582	1,030	1,180	1,660	1,072	2,139	448	882	1,229	1,286	262
<b>Incandescent Rocks</b>	478	743	224	143	183	411	571	NU	301	262	348	361	211
<b>Tule</b>	682	592	308	430	530	472	530	338	558	573	627	605	422
<b>Dogskin</b>	385	NU	54	344	330	NU	416	NU	294	239	254	135	381
<b>Fall/Fall Field/Private</b>	449	278	582	245	159	159	278	338	309	277	332	311	216
<b>Shovel Springs</b>	NU	NU	NU	338	542	418	639	343	1,827	953	928	862	1,113
<b>Total AUMs</b>	3,146	2,623	1,750	2,530	2,924	3,120	3,506	3,158	3,737	3,186	3,718	3,560	2,605

NU = no actual use.

Stocking Rate. The initial stocking rate for the Allotment was set in the Lahontan Rangeland Program Summary Update (1989) at 4,798 AUMs. The 1999 Memorandum reduced the stocking rate to 4,200 AUMs.

Utilization. Utilization refers to the proportion (usually percentage) of the current years forage production that is consumed and/or destroyed by grazing animals. Recommended utilization levels depend upon how fully each forage species in the plant community can be defoliated and still maintain or improve in vigor. Proper use refers to the maximum degree of use by grazing, expressed as a percent deemed to be physiologically correct from the standpoint of plant vigor, reproduction, longevity and regrowth potential. The utilization goal within the Allotment was 55 percent which is in BLM’s moderate range (41 percent to 60 percent) or lower utilization of key plant species. Many factors influence livestock use and distribution such as topography, distance from water, plant community characteristics, type of livestock, weather and fencing. Additional information on utilization can be found in the Evaluation.

### 3.4.2 Vegetation

Plant communities within the Allotment are primarily sagebrush steppe with small areas of riparian vegetation associated with springs, meadows and drainages such as aspen trees, willow (*Salix* spp.), sedges and rushes.

The major perennial grass species found on the Allotment are Thurber’s needlegrass, Indian ricegrass (*Achnatherum hymenoides*), desert needlegrass, bottlebrush squirreltail (*Elymus elymoides*), Basin wildrye (*Leymus cinereus*), and Sandberg bluegrass (*Poa secunda*). The major shrub species found on the Allotment are Wyoming big sagebrush, low sagebrush, basin big sagebrush (*Artemisia tridentate* var. *tridentata*), mountain big sagebrush (*A. t.* var. *vaseyana*), rubber rabbitbrush (*Ericameria nauseosa*), and antelope bitterbrush (*Purshia tridentata*). The major tree species found on the Allotment is juniper, both within and outside of its natural range.

The Natural Resources Conservation Service (NRCS) defines the expected vegetation on rangelands through the use of reference sheets for defined soil map units within Ecological Sites. The vegetation in the Allotment departs from the NRCS Reference Sheet for the Allotment in a number of ways. The vegetation has less diversity in desirable plant species and shows less recruitment of new plants. The Allotment is shrub-dominated rather than grass-dominated, and the altered shrub community has co-dominant shrubs that are increaser species representative of past disturbance. The Allotment is invaded by cheatgrass and encroached by juniper trees. There is a high level of habitat fragmentation and the Allotment is dissected by numerous roads and single-track trails.

#### *Representation of Life Forms and Numbers of Species*

While a variety of shrubs, forbs and grasses occurs throughout the Allotment, large portions of the Allotment are less diverse than expected based on the variety of species in the Rangeland Ecological Site Descriptions (RESDs). Eight of the 11 sites evaluated during Rangeland Health Assessments (RLHAs) showed overall departures in biotic integrity (BLM 2014). Five were slight to moderate; one was moderate; two were moderate to extreme. The imbalance in functional/structural groups is evident throughout the Allotment when compared to the RESDs.

Deep-rooted perennial bunch grasses were present at 10 of the 11 long-term monitoring locations, but their density was low. Forty-two production plots were located throughout the Allotment. Deep-rooted perennial grasses were present at only 17 percent of those plots, which shows a lack of expected diversity throughout large areas of the Allotment. Invasive species, such as cheatgrass and tumble mustard (*Sisymbrium altissimum*), occur throughout much of the Allotment. Annual grasses and forbs were the dominant producers at roughly 70 percent of the production plots. Three of the RLHAs had moderate to extreme departures relative to invasive plants, and one had a moderate departure. In the higher elevations and rocky slopes, the range of juniper is expanding.

#### *Diversity of Height, Size, and Distribution of Plants*

The diversity of height, size and distribution of plants varies throughout the Allotment and has been affected by a variety of factors including wildfires, OHV use, wild horse use, grazing practices and current drought conditions.

Nine of the 11 RLHAs showed some departure in functional/structural groups, although six of those only had slight to moderate departures (BLM 2014). One site had a moderate departure and two sites had moderate to extreme departures. The six areas showing slight to moderate still had adequate diversity of height and size and distribution of plants.

Wyoming big sagebrush is reduced or absent due to fire and in some of the burned areas it has been replaced by rabbitbrush and Anderson peachbrush (*Emploetocladius andersonii*). Areas not affected by fires typically have a grass/shrub imbalance (less grass and more shrubs) compared to reference state conditions. Key grass species are less than expected for most areas and substantially reduced over large portions of the Allotment. Deep-rooted perennial grasses were present at only 17 percent of the 42 production plots. Cheatgrass and annual forbs, which are generally one height, were the dominant vegetation at roughly 70 percent of the production

plots and do not provide the diversity of habitat needed for most wildlife species. Cheatgrass was the dominant species at one plot.

*Number of Wood Stalks, Seed Stalks, and Seed Production Adequate for Stand Maintenance*

Based on the 11 RHLAs and 11 monitoring locations, recruitment in the plant communities on the Allotment varies between increasers in some locations and decreasers in others. At eight of the RLHAs, reproductive capability of perennial plants was rated as being consistent with reference state conditions. Two sites had slight to moderate departures and one site had a moderate departure. However, the lack of perennial grass production, as shown in the 42 production plots, shows a substantial deficiency in reproductive capability of key grasses within large areas of the Allotment (BLM 2014).

**3.4.3 Wetlands/Riparian Zones**

Twelve riparian assessments (RA) for proper functioning condition (PFC) were conducted on the Allotment in 2009 and one site was re-assessed in 2013. Two 2009 assessments were conducted immediately adjacent to the CWS ACEC in the Warm Springs/Hungry Valley Pasture. Nine other assessments were conducted in the northern pastures of the Allotment and one at the south end (BLM 2014).

Table 14 shows 13 riparian assessments conducted during 2009 and 2013, along with functional status, trend and associated comments.

**Table 14. Riparian Assessments.**

Pasture	Location	Year	Status/Trend	Comments
Dogskin	Settlemyer Spring	2009	FAR-NA	Area is fenced; de-watered due to pipeline and trough; riparian area is contracting; inadequate vegetation composition; invasive plant species are present.
Dogskin	Matley Spring	2009	NF	De-watered due to pipeline; hoof action; perennial pepperweed present.
Fall	Salt Grass Meadow #7	2009	FAR-UP	Area is fenced, but hoof action occurred due to downed fence; adequate plant cover and vigor; invasive plant species present.
Fall	#29 (SE of DV02)	2009	FAR-NA	Area is fenced; de-watered due to pipeline and trough; upper section has adequate plant cover; invasive plant species present.
Tule	Cove Springs 1&2	2009	PFC	Some hoof action; some entrenchment and head cutting; willows and cottonwood present; adequate vegetative cover except in burn area.
Tule	Simple Spring	2009	NF	Channel in disequilibrium; head cutting; severe down cutting; hoof action; wetland is shrinking; loss of riparian vegetation.
Tule	Unnamed Spring PC01	2009	FAR-DOWN	Significant juniper increase; lost cover in area affected by hoof action; road bisects system; sediment below road.
Tule	Lotic between Cove Spring and Simple Spring	2009	PFC	Some head cutting; adequate vegetative composition, vigor, and cover.
Tule	Orchid Spring	2009	PFC	Site on a steep hillside; does not appear to be impacted by livestock.
Tule	Lotic between Cove Spring and Simple Spring	2013	FAR-NA	Low end of FAR; low vigor in perennial vegetation; heavy to severe grazing use and hoof action; lack of willows; not enough stabilizing vegetation.
Shovel Springs	S01 Spring	2009	FAR-DOWN	Hoof action/trampling compacting soils, impeding subsurface flow.
Warm Springs	CWS ACEC	2009	FAR-DOWN	North of fenced area; hoof action; tall and small white top.
Warm Springs	CWS ACEC #2	2009	FAR-UP	Outside of fenced area; hoof action; tall and small white top.

\*Rating Key: PFC-NR = Proper Functioning Condition, Not Rated Trend  
 FAR-NA = Functional-At-Risk, Not Apparent Trend  
 FAR-UP = Functional-At-Risk, Upward Trend  
 FAR-DOWN = Functional-At-Risk, Downward Trend  
 NF = Non-Functional

One key indicator in the hydrologic portion of the RA for lotic areas (flowing water) addresses the stream channel's sinuosity, width/depth ratio, and gradient as related to how well a stream conveys water and sediment and dissipates energy. In 2013, the lotic area between Cove Spring and Simple Spring was assessed. There are three lotic systems within the Allotment boundary, the lotic area between Cove Spring and Simple Spring is the only lotic system on BLM land. This lotic area was rated functional-at-risk (FAR) in part due to the lack of sinuosity based on the potential of this high gradient system. The potential for this site is a willow and sedge dominated lotic system with no channel, where woody and perennial components dissipate energy during

high-flow events. The lack of stabilizing vegetation and lack of sinuosity in this system indicates that the system is susceptible to impairment. For lotic areas, proper functioning condition (PFC) relates to the probability of the system to withstand relatively high-flow events. High-flow events are frequent events like 5-, 10-, and 25-year events. To sustain a given riparian area over time, the energies associated with high-flow events have to be accommodated. The benefits of managing for PFC in this specific system include: extension of the riparian area of over 30 meters, to and through the mouth of the drainage; and increased vegetative and physical health of the system. In 2009, the lotic area between Cove Spring and Simple Spring was rated PFC, with observations on minor head cutting (an erosional indicator), channel confinement, livestock trailing and impact areas, and the presence of erodible soils noted. No trend data is available, however the current pasture rotation, season of use, and length of use may be contributing to current conditions.

For lentic areas, PFC relates to the sustainable characteristics that provide habitat for resource values. Similar to lotic riparian areas, these characteristics include physical processes related to hydrology, vegetation, and erosion/deposition (soils) attributes. In a nut shell, hydrology supports the system, vegetation holds it together, and sediment, either too much or too little can cause a system to unravel. Two lentic areas were rated PFC in 2009, both lentic systems are located in the Tule Pasture. One had no impact from livestock and the other had some hoof action. Both had adequate vegetative composition, vigor, and cover. Seven out of eleven of the assessed lentic areas were rated FAR due to a variety of factors including invasive plant species dewatering of the system from water developments, hoof action, down cutting, fire impacts and juniper increase. Typically, lentic areas have riparian enclosure fences in place, however two of the riparian enclosure fences were down at time of assessment. The final two lentic assessments rated springs as non-functioning (NF) due to dewatering of the system or active incision where one or more of the three physical processes necessary for a functioning lentic system has stopped working. BLM does not have water rights on these systems, so is not a party to decisions about how much water remains at the source and how much water is diverted to other uses.

#### **3.4.4 Soils**

RESDs show that about 69 percent of the Allotment is comprised of loamy soils, and most of those are stony loams and varying degrees of sandy loams (BLM 2014). The remainder of the Allotment has soil types ranging from granitic to gravelly to clay pans.

Loamy soils are among the most productive, and can support a diverse plant community, however low precipitation limits that potential productivity. Diversity and vigor of plant communities varies throughout the Allotment. Some areas show adequate diversity and vigor, but large areas of the Allotment do not due to past disturbance.

As described in the Evaluation, there are a number of factors contributing to soil erosion on the Allotment. Past use by livestock, prior to the 1999 Memorandum and documented in the 1988 Allotment Evaluation, was heavy use in some areas of the Allotment (BLM 1988). Use by wild horses contributed to the excessive use within and around the Dogskin and Fall pastures. Soil erosion has been exacerbated by large fires, OHV use, and drought conditions. OHV use, particularly within the Hungry Valley Recreation Area, has been and continues to be a source of

soil disturbance and subsequent erosion. From 1999 through 2012, the Allotment has had less than average precipitation for seven of those 14 years (BLM 2014).

### **3.4.5 General Wildlife**

*Key Habitat Types.* The Nevada Wildlife Action Plan describes 22 key habitat types and identifies wildlife species assemblages for each (Wildlife Action Plan Team [WAPT] 2012). The primary key habitats in the Allotment are listed below, along with some of the general wildlife species associated with them.

Sagebrush. Seventy-two percent of the Allotment is composed of this key habitat type. Tall, dense sagebrush is required by some wildlife species, but other species use more open or grassy areas. Understory requirements vary by species, although the presence of an understory layer is generally beneficial. In general, wildlife species benefit from a shrub community that contains a mix of seral stages, shrub densities, and height classes with a diversity of plant species. Sagebrush obligates such as the Great Basin pocket mouse (*Perognathus parvus*), sagebrush lizard (*Sceloporus graciosus*), and sagebrush vole (*Lemmyscus curtatus*) are most likely to occur in this habitat type. This habitat type also provides habitat for mule deer (*Odocoileus hemionus*), black bear (*Ursus americanus*), and upland game birds such as mourning doves (*Zenaidura macroura*) and chukar (*Alectoris chukar*) (WAPT 2012).

Lower Montane Woodlands and Chaparral. Approximately 19 percent of the Allotment is composed of this key habitat type. Most of this area is comprised of sagebrush with scattered juniper. Monitoring photos and satellite imagery show juniper encroachment is occurring in many areas of the Allotment. Juniper tree densities depend on elevation, slope, and aspect. The more woodland-like areas would provide habitat for wildlife species such as Steller's jay (*Cyanocitta stelleri*), mule deer, and black bear (WAPT 2012).

Intermountain Cold Desert Shrub. This key habitat type, which mostly occurs in or near the Warm Springs Valley and other low lying areas represents approximately five percent of the Allotment. The soils in this habitat type tend to be loose and sandy or gravelly and easily excavated by denning or burrowing animals. Many species use both cold desert scrub and sagebrush habitats for various life requirements such as foraging and nesting. For example, kit foxes (*Vulpes macrotis*) use the sandy soils in scrub habitat for denning, but also forage for prey in sagebrush plant communities. Ricegrass and shadscale seeds are important food sources for many wildlife species. Wildlife species associated with this habitat type include long-nosed leopard lizard (*Gambelia wislizenii*), desert horned lizard (*Phrynosoma phatyrhinos*), Great Basin collared lizard (*Crotaphytus bicinctores*), and black-throated sparrow (*Amphispiza bilineata*) (WAPT 2012).

Grasslands and Meadows. This habitat type occurs in the Shovel Springs Pasture, in and adjacent to Hungry Valley and represents approximately two percent of the Allotment. Most of this semi-desert grassland area was burned in 2000. Wildlife species typically associated with semi-desert grassland include burrowing owl (*Athene cunicularia*) and pronghorn antelope (*Antilocapra americana*) (WAPT 2012).

Springs. Riparian assessments were conducted on the Allotment at various spring locations (Table 14). The characteristics of individual springs can vary tremendously in terms of flow, water chemistry, and habitats provided for wildlife species. Many spring systems important to wildlife represent little more than seeps. In addition to their critical importance to aquatic species, they also are important for terrestrial wildlife. Springs provide a vital source of water and food for a wide range of wildlife from big game to bats. None of the riparian assessments recorded any aquatic wildlife species.

*Habitat Conditions.* The Allotment is invaded by cheatgrass and encroached by juniper trees. Several noxious weeds are also present on the Allotment (Table 7). Sagebrush that is in good condition has a healthy bunchgrass/forb component, whereas sagebrush that has a depleted understory lacks the ability to provide adequate cover and food for wildlife (WAPT 2012). In general, wildlife species benefit from a sagebrush community that contains a mix of seral stages, shrub densities, and height classes with a diversity of plant species. Current habitat conditions are likely skewed toward those wildlife species more tolerant of early seral conditions, i.e. a loss of perennial understory vegetation. Vegetation is currently limited for wildlife species that require a diversity of perennial grasses and forbs for cover and sources of food. A number of factors including OHVs, roads and trails, right-of-ways (ROWS) for utility and highway corridors, mining exploration, and wildfire have contributed to fragmentation of wildlife habitat in the Allotment.

*Game Species.* The Allotment includes habitat for a variety of game species including mule deer, pronghorn, California quail (*Callipepla californica*), mourning doves, and chukar. The Nevada Department of Wildlife (NDOW) has identified most of the Allotment as year round habitat for mule deer and pronghorn. Crucial winter and summer habitat for both species also occurs in the Allotment. The entire Allotment is in black bear range. Bighorn sheep are discussed below under BLM Sensitive Species (Animals) (Section 3.4.7).

### **3.4.6 Migratory Birds**

*Regulatory Setting.* In 2001, President Clinton signed Executive Order (EO) 13186 placing emphasis on the conservation and management of migratory birds. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 and EO 13186 addresses the responsibilities of federal agencies to protect migratory birds by taking actions to implement the MBTA. BLM policy for migratory bird management is provided in Information Bulletin (IB) No. 2010-110 and is based on the 2010 Memorandum of Understanding (MOU) between the BLM and the FWS for the conservation of migratory birds. According to the MOU, BLM Priority Migratory Birds are those listed in the periodic FWS report Birds of Conservation Concern (FWS 2008) and those identified by the FWS Division of Migratory Bird Management as game birds below desired condition.

*Species Information.* Appendix C provides a list of migratory birds that may be present in the Allotment.

Raptors. Raptors such as ferruginous hawks (*Buteo regalis*) and golden eagles (*Aquila chrysaetos*) hunt over sagebrush for ground squirrels, jackrabbits, and other prey, and likely forage in the Allotment. These raptors are limited by prey densities and threats to these raptors

include reductions in prey populations from degradation or loss of rangelands. These raptors benefit from sagebrush habitat with a productive herbaceous understory that provides healthy prey populations (GBBO 2010). Increasingly dense woodlands decrease foraging opportunities for these species as well as others. There are no known active raptor nests within a five-mile radius of the fuels treatment units.

### **3.4.7 BLM Sensitive Species (Animals)**

*Regulatory Setting.* BLM Instruction Memorandum (IM) No. 2009-039 transmits the BLM 6840 Special Status Species Manual, the principal policy instrument detailing BLM management of special status species. Special status species are those species listed or proposed for listing under the Endangered Species Act (ESA) together with species designated internally as Bureau sensitive by State Directors. A list of the Nevada BLM sensitive species was released in 2011 (see IM No. NV-2011-059 and final list released in October 2011).

*Species Information.* Appendix C provides a list of BLM sensitive species that may be present in the Allotment.

Bighorn Sheep. The northeastern part of the Allotment that includes the Virginia Mountains is within occupied bighorn sheep (*Ovis canadensis*) range. In 1990, bighorn sheep were reintroduced at Tule Mountain in the Virginia Mountains and they currently occupy the Tule Mountain area in the northern part of the Allotment (NDOW pers. comm. 2013).

Greater Sage-Grouse. Sage-grouse are highly adapted to sagebrush; 98 percent of the year-round diet of adults is made up of sagebrush leaves, which gives the bird the ability to winter on sagebrush range (WAPT 2012). Sage-grouse depend on mature shrubs for nesting structure, protection from predators, and thermal cover. They nest on the ground under low-growing sagebrush bushes enhanced with thick bunchgrass understory. Woodland encroachment, wildfire and invasive plant species have been identified as threats to this species. The Allotment includes approximately 32,283 acres of the Virginia Population Management Unit (PMU) for sage-grouse. Portions of the Allotment have been further delineated as preliminary general habitat (13,228 acres) and preliminary priority habitat (2,981 acres) (Figure 10). There are no known active leks in the Allotment.

Pygmy Rabbit. Pygmy rabbits (*Brachylagus idahoensis*) are highly dependent on sagebrush to provide food and shelter throughout the year and are typically associated with tall, dense stands of big sagebrush, growing in deep, loose soils in which they can construct burrows. Big sagebrush is the primary food source, but grasses and forbs are also eaten (WAPT 2012). The BLM and NDOW have not documented pygmy rabbit habitat or their occurrence in the Allotment. This species is not discussed further.

### **3.4.8 Threatened or Endangered Species**

*Carson Wandering Skipper.* The Carson wandering skipper (CWS) (*Psuedocopaeodes eunus obscurus*) is a small brownish orange colored butterfly with a black terminal line and veins. This butterfly occupies grassland habitat on alkaline substrate within the CWS ACEC located in the Warm Springs/Hungry Valley Pasture (Figure 3, Section 3.4.12). This population is one of only four known populations for this subspecies. Plant species known to be used by adults for nectar

include racemose golden-weed (*Pyrrcoma racemosa*), tumble mustard, Canada thistle, bull thistle (*Cirsium vulgare*), and slender cleomella (*Cleomella parviflora*) (FWS 2007). The adult flight season occurs primarily between June and mid-July. Females lay their eggs on salt grass (*Distichlis spicata*), the larval host plant for the species (FWS 2012).

**Regulatory Setting.** The CWS was designated by FWS as an endangered species by an emergency rule on November 29, 2001 (59537 Vol. 66 No. 230) and final rule on August 7, 2002 (51116 Vol. 67 No. 152). The FWS has not designated critical habitat, however a recovery plan was finalized by FWS in 2007. The BLM has consulted with the FWS under Section 7 of the ESA for grazing activities adjacent to the core (fenced) CWS habitat and for the proposed herbicide treatments of four noxious weeds in and adjacent to the CWS ACEC (Figure 7 and Table 7).

*Webber's ivesia.* This plant prefers dry, barren, and rocky soil. The plant flowers from May to June and is associated with sagebrush (NNHP 2001).

**Regulatory Setting.** On June 3, 2014, the FWS issued a final rule in the *Federal Register* for the listing of Webber's ivesia as threatened (31878 Vol. 79 No. 106), and designation of critical habitat (32126 Vol. 79 No. 106) (FWS 2014). There is one known population of this plant, located within designated critical habitat. This 55-acre unit is located in the Shovel Springs Pasture (Figures 3 and 9). Identified threats to this population include invasive plant species, wildfire, OHV and other recreational uses, roads, livestock grazing, and other forms of vegetation or ground-disturbing activities (FWS 2014a). The BLM has consulted with the FWS under Section 7 of the ESA for grazing activities in the Shovel Springs Pasture, which contains the occupied/critical habitat for the plant.

### **3.4.9 BLM Sensitive Species (Plants)**

*Ames Milkvetch.* Ames Milkvetch (*Astragalus pulsiferae*) prefers sandy or rocky soils, often occurring with pines or sagebrush (NatureServe 2013). Known populations of this plant have not been mapped in this Allotment.

### **3.4.10 Invasive, Non-Native Plant Species and Noxious Weeds**

Invasive species are defined by Executive Order 13112 as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Alien refers to a species that did not evolve in the environment in which it is found. This includes plants, animals, and microorganisms. A brief description of each species is provided below.

*Hoary Cress.* This perennial weed grows best in disturbed, alkaline soils. This weed reproduces through roots and seed.

*Perennial pepperweed.* This perennial weed has a creeping root system and can be found in moist areas and pastures. This weed reproduces by roots and seed.

*Musk thistle.* This biennial weed has a deep, fleshy taproot and reproduces by seed, and often infests roadsides.

*Canada thistle.* This perennial weed has a deep, extensive creeping root system. This weed reproduces by both roots and seeds. Grows best in moist areas; also found in pastures.

*Scotch thistle.* This biennial weed reproduces by seed and can form dense stands that are difficult to penetrate. This weed has a fleshy taproot and often infests roadsides.

*Yellow star-thistle.* This annual reproduces by seed and can have a long tap root. This weed often infests rangeland and roadsides (NDA 2013).

Cheatgrass, an invasive weed, occurs in the Allotment. Cheatgrass is an annual grass that displaces native perennial grasses and forbs because of its ability to germinate more quickly and earlier than native species, thus outcompeting natives for water and nutrients. Cheatgrass is also adapted to reoccurring fires that are perpetuated in part by the fine dead fuels the plant leaves behind.

### 3.4.11 Fire Management

Fire history and fire effects in the Great Basin are a vital component of resource health. Fire should play a regular disturbance role in the ecosystem. Fire exclusion has occurred throughout the west since Europeans arrived, which is thought to have affected the natural role of fire. Vegetation volume has increased, and vegetative composition has changed as a result of this natural disturbance alteration resulting in mature sagebrush with increasing dead to live woody material and decreasing understory grasses and forbs. Fires prior to European settlement once carried through fine fuels and created structural and age class diversity in sagebrush sites. According to Miller and Tausch (2001), infrequent fires in the past 130 years have allowed juniper woodlands to expand into sagebrush sites. This fuel type presents a unique fire hazard as the potential for crown fire is higher. In areas where fires have not occurred for many years, fuel loading can increase the intensity of fire causing atypical burn results. Timing, intensity, and frequency can critically influence vegetation recovery, leading to potentially long-term changes in vegetation and flammability.

Table 15 shows the wildland fires within the Allotment since 1980. Typical wildfire patterns create a mosaic pattern on the landscape, burning intensely in some areas removing all vegetation, and burning lightly in other areas, removing only grasses or groundcover. Most fires on the Allotment since the BLM has maintained records were one acre or less.

**Table 15. Wildland Fires and Emergency Stabilization and Rehabilitation Since 1980.**

Event	Name	Year	Acreage
Wildfire	Hungry Mountain	1984	131
Wildfire	Unknown	1985	15,699
Wildfire	Unknown	1985	7,436
Wildfire	Unknown	1985	1,284
Wildfire	Unknown	1985	374
Wildfire	Antelope Valley 2	1986	276
Wildfire	Olds Ranch	1988	3,213
Wildfire	Reservoir	1999	5,281
Wildfire	Fish 2	1999	2,152
Wildfire	Antelope	2000	5,330

Event	Name	Year	Acreage
Wildfire	Hungary Valley	2000	3,554
Wildfire	Sun Valley	2005	29
Wildfire	Leon	2006	14
Wildfire	Hungry Valley	2007	568
Wildfire	Warm	2010	1
Wildfire	Ironwood	2012	1
Wildfire	Pyramid Highway	2012	48
<b>Total</b>			<b>45,391</b>
ES and R aerial/drill	Explosion	1974	2,354
ES and R aerial	Fish	1999	2,275
ES and R aerial	Reservoir	1999	4,981
ES and R broadcast	Warm	2011	1
<b>Total</b>			<b>9,611</b>
Fuels Treatment	Hungry Valley	2004	56

Several factors influence the condition of plant communities. Historically fire has been the dominant force controlling the distribution of the plant communities in the Great Basin. As crown cover and density increase, fuel loads result in a shift from low and mixed intensity fires to less frequent high intensity fires. High intensity fires create a post fire environment that is often exploited by opportunistic species such as cheatgrass. Once established this species provides fine fuels that increase opportunities for wildfire ignition and spread. In many areas cheatgrass is associated with a fire return interval of two to five years. Other factors influencing the vegetation density, crown cover and species composition are: fire suppression, livestock and horse grazing, drought, and perhaps climate change.

The Allotment is located in the Reno/Sparks Fire Management Unit (NV-030-02). Aggressive initial attack and full suppression of all wildfires threatening the developing wildland urban interface is the normal practice. The 2,137 acre treatment area could be characterized as a Phase 1 juniper woodland averaging five percent total tree cover per acre (Tausch et al. 2009).

### 3.4.12 Area of Critical Environmental Concern

There are two ACECs wholly or partially within the Allotment. Below are brief descriptions of each:

Carson Wandering Skipper. The CWS ACEC is a 323-acre site approximately 25 miles north of Reno along Winnemucca Ranch Road (Figures 2 and 7). Two parcels totaling 243 acres were designated as the ACEC by the Southern Washoe County Plan Amendment approved in 2001 (BLM 2001). Eighty acres of additional private lands were acquired by the BLM since the ACEC's original designation. The ACEC was established to protect the CWS habitat from agricultural use and the expanding residential and commercial development to the south in Reno. The core (occupied) CWS habitat has been enclosed by fencing (Figure 7).

Incandescent Rocks Natural Scenic. The Incandescent Rocks ACEC is a 1,072-acre site located approximately five miles west of Pyramid Lake (Figure 2). Approximately 638 acres are within this Allotment. This ACEC was established because of the rhyolitic outcrops and ridges that are characterized by red, yellow, orange, and purple hues that appear to fluoresce or glow as light reflects off the walls. This ACEC was designated through the Reno Management Framework

Plan (BLM 1983). The ACEC was established to protect the scenic area from OHV use and potential mineral exploration and mining. The BLM completed a management plan for this ACEC in 1988.

### **3.4.13 Socioeconomics**

County Profile. The Allotment is located in Washoe County, Nevada. The county covers 6,302 square miles or approximately six percent of Nevada. BLM lands make up approximately 386,496 acres (nine percent) of this county. The population of Washoe County in 2013 was estimated to be 433,731 compared to 339,486 in 2000. Persons under 18 years make up approximately 30 percent of the population, while persons over 65 years make up about 13 percent of the population (Census 2014). Farming (including livestock) makes up approximately two percent of employment in Washoe County (Headwaters 2014).

Economic Contributions by Livestock Grazing. The BLM collects annual grazing fees from permittees based on the number of permitted AUMs. An AUM represents the amount of forage required to sustain one cow and one calf for one month. The CRMP provides for 142,979 active permitted AUMs for all Allotments within the Carson City District Office (BLM 2001a). At the current rate of \$1.35 per AUM, the Allotment can generate as much as \$5,670 per year from active use AUMs. The BLM distributes 50 percent of the grazing revenues to range betterment projects, 37.5 percent to the U.S. Treasury, and 12.5 percent is returned to the State the allotment is located within (43 U.S.C. Chapter 8A 1934). In 2002 livestock and poultry represented \$7.8 million of economic input in Washoe County (UNR 2005). In addition, the U.S. Government contributes payments-in-lieu-of-taxes, which totaled \$3.3 million for Washoe County in 2013.

Permittees also add money to the local economy. Supplies, materials and services are often purchased for the following activities on public lands: fence/corral construction and maintenance, salt and supplements, shoeing, wages for hired herder/rider(s), veterinary expenses, vehicle purchase, repair and fuel.

Other Values from Livestock Grazing. Since the mid-1800's livestock grazing has occurred across much of the west. Over many decades its lifestyle has been incorporated into modern life and events. The Reno Rodeo Cattle Drive traverses through the Allotment each June. In 2012 more than 150,000 people visited the 10-day event. More than \$42 million is added to the Reno/Sparks economy each year through its hotels, casinos, restaurants and retail.

Non-economic values of livestock grazing include: recreational, aesthetic, open space, clean air and water, and wildlife habitat values. Open space promotes activities such as recreation, hunting, and wildlife watching activities.

### **3.4.14 Travel Management**

According to a partial route inventory completed by the BLM in 2012, there are 139 miles of routes within the Allotment. These routes range from single-track trails to maintained dirt roads. The Allotment is located within the Southern Washoe County Urban Interface Plan Amendment area (BLM 2001). This Plan changed the Travel Management status in the Allotment from "Open" to OHV use, to "Limited" OHV use to existing roads and trails (with the exception of the

Hungry Valley Recreation Area). Based on review of aerial imagery since 2001, OHV routes have proliferated, impacting the now designated critical habitat for Webber's ivesia (Figure 9).

#### **3.4.15 Wild Horses and Burros**

The Dogskin Herd Management Area (HMA) is located within the Allotment (Figure 2). The HMA consists of approximately 6,895 acres of public lands. The Appropriate Management Level (AML) for wild horses (*Equus ferus*) was set at 10 to 15 animals for 180 Animal Month Units, in 1993 (BLM 1993). In January 2011, 12 excess animals were removed during a wild horse gather. The most recent population census was conducted in May of 2012 and there were 29 animals identified within and outside the HMA. Due to the small size of the HMA and limited water sources, it is common to see wild horses outside the HMA and throughout the Allotment. There are no burros (*E. africanus asinus*) in the Allotment and this species is not discussed further.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

This chapter describes the potential direct, indirect, and residual effects to resources that may result from the Proposed Action or Alternatives, as well as identifies the potential monitoring needs associated with the specific resources. In this document, the terms “effect” and “impact” are used synonymously. In this document the term “beneficial effect” refers to a positive effect on a resource. The terms “adverse” and “negligible” refer to detrimental effects to a resource.

### **4.1 Alternative A: No Action Alternative (Current Management)**

#### **4.1.1 Livestock Grazing**

Under the No Action Alternative (Current Management), there would be no changes in the term livestock grazing permit. The stocking rate for cattle within the Allotment would be 300 cattle from March 1 to February 28 for a total of 4,200 AUMs. The standard terms and conditions included in the current permit would apply. Existing fencing within the Allotment would continue to be maintained.

Under the No Action Alternative (Current Management), no new range improvements would be authorized. Without the range improvements, the BLM would be unable to improve the distribution of livestock grazing within the Allotment. If no changes are made, it would not be possible to assess the impact of reduced cattle use on the sustainable recruitment of deep-rooted perennial bunchgrasses. There would be no impacts to existing grazing from the fuels and weed treatments, because these actions would not be authorized. The BLM would evaluate the need for enclosure fencing around the Webber’s ivesia critical habitat under a separate action.

#### **4.1.2 Vegetation**

Under the No Action Alternative (Current Management), up to 4,200 AUMs of annual forage production could be removed by grazing livestock. As discussed in Section 3.4.2, key deep-rooted perennial grass species are less than expected for most areas and substantially reduced over large portions of the Allotment. Deep-rooted perennial grasses were present at only 17 percent of the 42 production plots monitored. If no changes are made, it would not be possible to assess the impact of reduced cattle use on the sustainable recruitment of deep-rooted perennial bunchgrasses.

Under the No Action Alternative (Current Management), there would be no effect to vegetation from fuels, weed treatments or new range improvements because they would not be authorized. Current vegetative trends would continue, including the expansion of noxious weeds and juniper into areas previously unoccupied by the species. An increase in fire severity and intensity would likely occur, providing an opportunity for increases in non-native plant species such as cheatgrass, and a decline in the quality of wildlife habitat.

#### **4.1.3 Wetlands/Riparian Zones**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels. As discussed in Section 3.4.3 a lack of riparian vegetation, and insufficient riparian species diversity occur in the riparian areas of the Allotment. If no changes are made to livestock grazing, it would not be possible to assess the impact of changes in season of use, reduced livestock use, and pasture rest on riparian areas.

Under the No Action Alternative (Current Management), there would be no effect to riparian areas from fuels, weeds treatments, or new range improvements because they would not be implemented. Current expansion of noxious weeds and juniper into riparian areas would continue, thereby negatively affecting riparian functioning conditions which effect water availability and the composition of riparian vegetative species.

#### **4.1.4 Soils**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels. The rate of soil erosion within the Allotment, influenced by a number factors including OHV use, fire, drought conditions, wild horse and livestock grazing would be expected to continue at the existing rates. If no changes are made to livestock grazing, it would not be possible to assess the impact of changes in season of use, reduced livestock use, and pasture rest on soil disturbance and subsequent erosion potential.

Under the No action Alternative (Current Management), there would be no effects to soil productivity or soil loss from fuels, or new range improvements because they would not be implemented. Without weed treatments, there would be a missed opportunity as noxious weeds can decrease soil moisture available for native plant species. A decrease in native deep-rooted perennials from noxious weeds could increase soil erosion potential. Improvements to livestock distribution as a result of the new range improvements would not occur, because no new range improvements would be authorized.

#### **4.1.5 General Wildlife**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels (350 cattle from March 1 to February 28 for a total of 4,200 AUMs). The Allotment currently lacks the recruitment of deep-rooted perennial bunchgrasses, and riparian zones lack riparian vegetation and do not have diverse age classes or a diverse composition of riparian plant species. Continued reductions in habitat quality from current grazing practices could affect the abundance and distribution of wildlife in the Allotment. Although current grazing management is impacting wildlife habitat, other factors that contribute to deteriorated habitat conditions in the Allotment include grazing by wild horses, wildfire, heavy recreational and OHV use, roads, and the presence of invasive plant species such as cheatgrass. There would be no effect to wildlife or their habitats from new range improvements because none would be authorized.

Under the No Action Alternative (Current Management), there would be no fuels and weed treatments. Without the fuels treatment, the quality of sagebrush would decline as juniper trees continue to expand and infill sagebrush habitat, limiting the recruitment of new plants and the persistence of a healthy, diverse understory needed by wildlife. As juniper density increases over time, it effectively denies soil moisture to other plants through its disproportionate water use and can eventually replace sagebrush habitat and eliminate the understory. Declining health of sagebrush habitat would decrease forage and cover available to wildlife. Most of the Allotment has burned at least once and high fuel loads from increased tree biomass and continuous canopy cover would increase the risk of losing more habitat to large-scale, high-severity wildfires uncharacteristic of the natural fire regime. Wildfire would also likely increase

cheatgrass, further reducing habitat quality. Without the weed treatments, weeds would continue to be spread from a variety of vectors including wind, overland flow of water, livestock grazing, and OHV use. Wildlife would benefit from weed treatments because weeds can displace and out compete native plants causing wildlife habitat to be degraded. Expansion of juniper and weeds in riparian habitat would negatively affect riparian functioning, specifically plant composition and water availability. The No Action Alternative (Current Management) represents a lost opportunity to benefit wildlife by treating juniper and weeds to improve habitat over the long-term.

The effects to wildlife or their associated habitats from installation of enclosure fencing for the Webber's ivesia critical habitat would be evaluated under a separate action.

#### **4.1.6 Migratory Birds**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels (350 cattle from March 1 to February 28 for a total of 4,200 AUMs). The Allotment currently lacks the recruitment of deep-rooted perennial bunchgrasses, and riparian zones lack riparian vegetation and do not have diverse age classes or a diverse composition of riparian plant species. Continued reductions in habitat quality from current grazing practices could affect the abundance and distribution of migratory birds in the Allotment. Although current grazing management is impacting migratory bird habitat, other factors that contribute to deteriorated habitat conditions in the Allotment include grazing by wild horses, wildfire, heavy recreational and OHV use, roads, and the presence of invasive plant species such as cheatgrass. There would be no effect to migratory birds or their habitats from new range improvements because none would be authorized.

Under the No Action Alternative (Current Management), there would be no fuels and weed treatments. Without the fuels treatment, the quality of sagebrush would decline as juniper trees continue to expand and infill sagebrush habitat, limiting the recruitment of new plants and the persistence of a healthy, diverse understory needed by migratory birds. As juniper density increases over time, it effectively denies soil moisture to other plants through its disproportionate water use and can eventually replace sagebrush habitat and eliminate the understory. Declining health of sagebrush habitat would decrease forage and cover available to migratory birds. Most of the Allotment has burned at least once and continued juniper expansion would increase the risk of losing more habitat to severe wildfire. Wildfire would also likely increase cheatgrass, further reducing habitat quality. Without the weed treatments, weeds would continue to be spread from a variety of vectors including wind, overland flow of water, livestock grazing, and OHV use. Migratory birds would benefit from weed treatments because weeds can displace and out compete native plants causing migratory bird habitat to be degraded. Expansion of juniper and weeds in riparian habitat would negatively affect riparian functioning, specifically plant composition and water availability. The No Action Alternative (Current Management) represents a lost opportunity to benefit migratory birds by treating juniper and weeds to improve habitat over the long-term.

The effects to migratory birds or their associated habitats from installation of enclosure fencing for the Webber's ivesia critical habitat would be evaluated under a separate action.

#### **4.1.7 BLM Sensitive Species (Animals)**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels (350 cattle from March 1 to February 28 for a total of 4,200 AUMs). The Allotment currently lacks the recruitment of deep-rooted perennial bunchgrasses, and riparian zones lack riparian vegetation and do not have diverse age classes or a diverse composition of riparian plant species. Continued reductions in habitat quality from current grazing practices could affect the abundance and distribution of sensitive species in the Allotment. Although current grazing management is impacting sensitive species habitat, other factors that contribute to deteriorated habitat conditions in the Allotment include grazing wild horses, wildfire, heavy recreational and OHV use, roads, and the presence of invasive plant species such as cheatgrass. There would be no effect to sensitive species or their habitats from new range improvements because none would be authorized.

Under the No Action Alternative (Current Management), there would be no fuels and weed treatments. Without the fuels treatment, the quality of sagebrush would decline as juniper trees continue to expand and infill sagebrush habitat, limiting the recruitment of new plants and the persistence of a healthy, diverse understory needed by sensitive species. As juniper density increases over time, it effectively denies soil moisture to other plants through its disproportionate water use and can eventually replace sagebrush habitat and eliminate the understory. Declining health of sagebrush habitat would decrease forage and cover available to sensitive species. Most of the Allotment has burned at least once and continued juniper expansion would increase the risk of losing more habitat to severe wildfire. Wildfire would also likely increase cheatgrass, further reducing habitat quality. Without the weed treatments, weeds would continue to be spread from a variety of vectors including wind, overland flow of water, livestock grazing and OHV use. Sensitive species would benefit from weed treatments because weeds can displace and out compete native plants, causing wildlife habitat to be degraded. Expansion of juniper and weeds in riparian habitat would negatively affect riparian functioning, specifically plant composition and water availability. The No Action Alternative (Current Management) represents a lost opportunity to benefit sensitive species by treating juniper and weeds to improve habitat over the long-term.

The effects to sensitive species or their associated habitats from installation of enclosure fencing for the Webber's ivesia critical habitat would be evaluated under a separate action.

#### **4.1.8 Threatened or Endangered Species**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels (350 cattle from March 1 to February 28 for a total of 4,200 AUMs). The CWS ACEC is located in the Warm Springs/Hungry Valley Pasture and livestock grazing may occur outside the fenced portion (occupied habitat) of the ACEC (Table 2). The area has been grazed for decades; grazing by cattle in and around the ACEC occurred historically and does not represent a new use of the area. In 2001 and 2007 the BLM fenced the portions of the CWS ACEC that contain occupied CWS habitat to prevent livestock grazing and OHV use impacts. The unfenced area where grazing could occur does not resemble quality habitat. This area lacks alkaline soils and is shrub-dominated. There is a sparse, discontinuous saltgrass component scattered in the understory, but there are no large open expanses of saltgrass and there is a lack of

nectar plants. Although the unfenced portion is not characteristic of suitable habitat, there is the potential for adult females to visit individual saltgrass plants and lay eggs on them. These plants and any CWS eggs, larvae, or pupae could potentially be trampled or eaten by cattle. Some protection of the eggs, larvae, or pupae is afforded by the saltgrass itself as these life stages can be found near or at the base of the plant. Grazing may occur outside the fenced area during the CWS flight season in some years (Table 2). It is unlikely that cattle would trample adults, but adults could be temporarily disturbed if they are visiting the saltgrass plants. Effects to CWS outside the fenced portion are not expected because CWS have not been observed in the unfenced area during the flight season. There would be no effect to the CWS from the fuels and weed treatments, and new range improvements because these actions would not be authorized.

Under the No Action Alternative (Current Management), there would be no effect to the Webber's ivesia critical habitat from the fuels and weed treatments, and new range improvements, because these actions would not be authorized. The BLM would authorize the enclosure fencing for the Webber's ivesia critical habitat under a separate action<sup>3</sup>.

#### **4.1.9 BLM Sensitive Species (Plants)**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels. Impacts from livestock grazing such as the removal of the above ground biomass of sensitive plants, along with impacts to habitat such as trampling and compaction of soil would continue. The Allotment currently lacks the recruitment of deep-rooted perennial bunchgrasses and much of the area is dominated by invasive non-native plants which compete against native vegetation, including sensitive plant species. The abundance of invasive non-native plants, many of which are annuals, can lead to increased frequency and extent of wild fires and an increase in fire return intervals. While many sensitive plant species are adapted to fire, increased fire return intervals could negatively impact sensitive species and their habitat over the long-term leading to declines in species populations.

Under the No Action Alternative (Current Management), there would be no herbicide applications, allowing noxious weed species to continue to dominate and spread in areas where sensitive plant species may be found. The lack of herbicide applications, on the other hand, would also mean that sensitive plant species would not be subjected to unintended herbicide contact which could harm sensitive plant species. There would be no effect to sensitive plant species or their habitats from new range improvements as none would be authorized. Range improvements tend to disperse livestock into other areas of the Allotment and allow for dispersed impacts which can be beneficial to sensitive plant species as it reduces concentrated grazing. Range improvements such as trough development can cause livestock to congregate for various lengths of time in one area. Sensitive plant species found within the Webber's ivesia critical habitat would not benefit from the protective enclosure, nor potentially damaged by its construction as the enclosure would not be authorized. There would be no effect from any fuels treatments, because none would be authorized.

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<sup>3</sup> The BLM has existing authority to install the enclosure fencing around occupied/critical habitat for the Webber's ivesia (516 DM 11.9 J [9]). If the No Action Alternative were selected, the BLM would use this authority to approve the fencing project.

#### **4.1.10 Invasive, Non-Native Plant Species and Noxious Weeds**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels. Impacts from livestock grazing such as the removal of the above ground biomass of vegetation along with impacts to habitat such as trampling and compaction of soil would continue. The Allotment currently lacks the recruitment of deep-rooted perennial bunchgrasses and much of the area is dominated by invasive non-native plants which compete against native vegetation. The abundance of invasive non-native plants, many of which are annuals, can lead to increased frequency and extent of wild fires and an increase in fire return intervals. While many plant species are adapted to fire, increased fire return intervals could negatively impact vegetation communities and their habitat over the long-term leading to declines in native plant populations along with a corresponding increase in invasive non-native plant species and noxious weeds. Livestock grazing can be used as a tool to reduce some invasive species such as cheatgrass, however most invasive, non-native plants and noxious weeds are unpalatable.

Under the No Action Alternative (Current Management), there would be no herbicide applications which would allow noxious weed species to continue to dominate and spread throughout the Allotment. The lack of herbicide applications, on the other hand, would also mean that desirable vegetation would not be subjected to unintended herbicide contact which could harm plant species. There would be no effect to invasive, non-native plants and noxious weeds from new range improvements, because none would be authorized. Range improvements designed to disperse livestock into other areas of the Allotment can be beneficial to plant species as it reduces concentrated grazing. Range improvements such as trough development can cause livestock to congregate for various lengths of time in one area. Invasive, non-native plant species and noxious weeds found within the Webber's ivesia critical habitat would not be affected by the protective enclosure, nor be potentially damaged by its construction as the fencing would not be authorized. There would be no effect from any fuels treatments as none would be authorized.

#### **4.1.11 Fire Management**

Under the No Action Alternative (Current Management), there would be no fuels treatment and hazardous fuel conditions would continue to accumulate beyond levels representative of the natural (historic) fire regime. The resource impacts from wildfires which do occur would be greater than under the natural fire regime. Habitat values would continue to decline as the perennial, herbaceous understory would further be reduced in the long-term.

#### **4.1.12 Area of Critical Environmental Concern**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels. A portion of the CWS ACEC is enclosed with fencing to prevent livestock grazing and OHV use. Due to the lack of forage and water, little or no livestock grazing occurs in the area adjacent to the CWS ACEC. Due to the terrain of the Incandescent Rocks ACEC, and the lack of forage and water, little or no livestock grazing occurs in this ACEC. In the 1988 Management Plan for the ACEC, livestock grazing was not identified as a concern to the rock features.

Under the No Action Alternative (Current Management), there would be no effect to the ACECs from the fuels and weed treatments, and new range improvements, because these actions would not be authorized.

#### **4.1.13 Socioeconomics**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels. The social and economic benefits associated with grazing operations would continue. The continuation of existing AUMs would likely have a multiplier effect on aspects of the local economy that are associated with the ranching community. Because it is not possible to quantify the specific monetary impacts to the individual permittee, it is also not possible to accurately estimate the resulting effects on the local economy. A continuation of authorized AUMs would result in a corresponding benefits to the regional economic activity from the permittee's spending in the local economy. Continuing to graze on the Allotment would benefit the permittee, any employees, the businesses where the permittee purchases supplies from, and the communities that are supported by livestock operations. Ongoing grazing would benefit tax revenues for the local economy.

Under the No Action Alternative (Current Management), there would be no new range improvements, or fuels and weed treatments. There would be no increased benefits to local economic activity from these activities because they would not be authorized.

#### **4.1.14 Travel Management**

Under the No Action Alternative (Current Management), continued livestock grazing would have no effect to travel management. There would be no effect to travel management from the fuels and weed treatments because none would be authorized. Under the No Action Alternative (Current Management), the BLM would evaluate the need for exclosure fencing around the Webber's ivesia critical habitat under a separate action. Any impact on travel management would be evaluated separately during that review.

#### **4.1.15 Wild Horses and Burros**

Under the No Action Alternative (Current Management), authorized grazing would continue at existing levels. There would be no changes to the forage allocated to wild horses. Under the No Action Alternative (Current Management), there would be no effects to wild horses from the fuels and weed treatments, and new range improvements, because these actions would not be authorized. Under the No Action Alternative (Current Management), the BLM would evaluate the need for exclosure fencing around the Webber's ivesia critical habitat under a separate action. Any impact to wild horses would be evaluated separately during that review.

### **4.2 Alternative B: Reduction to Season of Use and AUMs (Proposed Action)**

#### **4.2.1 Livestock Grazing**

Under the Proposed Action, there would be a reduction to the season of use and authorized AUMs. The stocking rate for cattle within the Allotment would be up to 300 cattle for a maximum period of June 1 to March 31. The Proposed Action represents a 38 percent reduction in permitted AUMs. While that would be the maximum permitted use, the allowable use each year would be governed by the AMP. Based on current conditions in 2015, the allowable use

would start at 210 cattle from July 1 to March 31 for 1,900 AUMs. The standard terms and conditions included in the current permit would apply. Existing fencing within the Allotment would continue to be maintained.

Under the Proposed Action, four catch corrals would be installed in the Shovel Springs, Dogskin, Fall and Hungry Valley pastures (Figure 3). The catch corrals would be constructed of T-posts and netting wire, with one side utilizing an existing Allotment fence. The dimensions would be approximately 40 feet by 10 feet in a funnel shape and 60 feet long. No water resources would be needed, as these would be used for limited duration while livestock are moved from one pasture into another. A holding corral would be installed in the Shovel Springs Pasture. It would be of similar construction and utilize existing water sources.

The existing underground Dogskin Pipeline would be extended to the north and south to enable the permittee to place new troughs along the new extended portions. The new pipelines would be installed underground and extend for approximately two miles each (Figure 4). The existing pipeline is 1.25 inches in diameter; the new extension pipelines would be 1.25 inches in diameter. The new pipelines would be placed within a trench approximately 24 inches deep, by 24 inches wide. The trenches would be cut by backhoe or similar mechanized equipment. Along each new pipeline extension, up to two new water troughs would be placed and filled as needed to assist in the distribution of livestock. The new troughs would not result in increased demand to the source spring. Installation of the new pipeline extensions is anticipated to take approximately six weeks to complete.

Three permanent water hauls would be established on the west side of the Allotment (Figure 4). Multiple troughs (six to eight), would be placed at each of the three water haul sites to better distribute the cattle within the water haul area.

Under the Proposed Action, the BLM would implement the fuels treatments in the Tule and Fall pastures. The BLM would coordinate with the permittee to minimize the disruption to grazing operations while the fuels treatments are implemented. The BLM may modify the timing of the fuels treatments to a time of the year when livestock are not grazing in these pastures.

Weed treatments would occur in 26 units, consisting of approximately 844 acres of public lands (less than one percent of the Allotment). The greatest risk to livestock is from the consumption of vegetation that has been treated by herbicides. Because herbicide residue is higher on grasses than it is on other plants, livestock that consume large quantities of grasses are at a higher risk of exposure to herbicides (BLM 2007). To minimize potential adverse effects to livestock, the BLM would coordinate with the permittee when weed treatments were to occur. Livestock grazing would be rotated to other pastures when herbicides are applied, in accordance with instructions on the active ingredient label. A reduction in the cover of noxious weeds would benefit livestock grazing, which tend to avoid consuming most noxious weeds species. Cattle often prefer native species over noxious weeds, in part due to their lack of toxins, spines, and/or distasteful compounds. Eliminating or reducing the presence of noxious weeds would benefit grazing animals through the reestablishment of native species (BLM 2007).

Implementation of the Webber's ivesia exclosure fencing would reduce the area available to livestock grazing by about 90 acres. Removal of this parcel from livestock grazing would not affect overall livestock operations in the Allotment.

#### **4.2.2 Vegetation**

Under the Proposed Action, AUMs would be reduced to accommodate a level of 40 percent utilization (21-40 percent is light use) on the available deep-rooted perennial bunchgrasses under normal climatic conditions. As discussed in Section 3.4.2, key deep-rooted perennial grass species are less than expected for most areas and substantially reduced over large portions of the Allotment. Deep-rooted perennial grasses were present at only 17 percent of the 42 production plots monitored. Since cattle grazing is permitted based on deep-rooted perennial bunchgrasses, the Proposed Action would lead to reduced use on those grasses and provide the opportunity to evaluate if reduced use leads to increased recruitment. The reduction could lead to less use on the annual grasses and forbs that were the dominant producers at roughly 70 percent of the production plots and these may increase, adding to the fuel load. However, if livestock are used as a vegetative management tool as described in the AMP, livestock could remove some invasive species during the dormant season.

Under the Proposed Action, two water pipeline extensions would be constructed, temporarily disturbing approximately 14 acres of public lands. The disturbance corridor would be seeded with a BLM-approved seed mix. The installation and use of four catch corrals, and one holding corral would cause less than one acre of permanent disturbance.

Under the Proposed Action, herbicide treatments would occur in 26 units, consisting of approximately 844 acres of public lands (less than one percent of the Allotment). Vegetation may be crushed by foot traffic, and/or motorized vehicles or equipment used during the application of herbicides. Application of herbicides may kill both target and non-target species. Herbicides can affect vegetation through direct spraying, drift, runoff, wind transport, or accidental spills. The extent of these impacts would vary by treatment unit, the extent of the presence of noxious weeds and native species, and the active ingredient used (selective versus non-selective). The severity of impact also depends on whether they are contact herbicides (killing only the part of the plant they touch) or are translocated herbicides (transported throughout the plant). The use of non-selective herbicides may also require seeding after application. Treatments may kill disturbance intolerant species, and free up light and nutrients for early successional species. Eliminating or reducing noxious weeds would likely increase native species resiliency to disturbances and sustainability in the long-term (BLM 2007).

Under the Proposed Action, juniper trees would be removed on approximately 2,173 acres in the Fall and Tule pastures. Trees would be cut by hand and small mechanized tools (chainsaws). During the treatments, crews of two to 20 people would travel cross-country by foot to lop and scatter the trees. Low lying vegetation may be crushed by foot traffic. These impacts would be temporary and would not be expected to impact the vegetation in the long-term. Motorized vehicles used by the crews would remain on existing roads.

Under the Proposed Action, exclosure fencing would be installed around the perimeter of approximately 90 acres of public lands to protect Webber's ivesia critical habitat.

Implementation would cause temporary disturbance to less than one acre of public land. Once the fencing is in place, vegetation within the enclosure would be expected to benefit in the long-term, because the area would no longer be disturbed from activities such as OHV use and by grazing animals.

#### **4.2.3 Wetlands/Riparian Zones**

Under the Proposed Action, authorized grazing would continue, however at reduced AUMs and season of use. There would be less livestock grazing pressure on riparian communities. As listed in Table 14, PFCs reported hoof action among the other impacts such as OHV use to the riparian areas, and 30 percent of the PFCs cited inadequate riparian vegetation for proper system functionality. The Proposed Action would reduce AUMs to accommodate a level of 40 percent utilization on upland species under normal climatic conditions and rotate use on the four northern pastures to allow for one-year rest in each pasture. The AUM reduction and rest-rotation would allow for increased riparian vegetation vigor due to longer recovery time in between livestock grazing. Hot season grazing (July, August, September) would continue in the four northern pastures; during the hot season livestock tend to stay on or near riparian areas longer.

Under the Proposed Action, the Dogskin Pipeline would be extended to the north and south to facilitate improved livestock distribution. Extending the pipeline and adding additional water troughs would not be expected to create additional demand on the source spring(s).

Under the Proposed Action, herbicide treatments would occur on 26 units, most of which have a riparian feature (intermittent stream etc). As listed in Table 14, approximately half of the assessed riparian areas contained invasive plant species. Herbicide treatments would benefit riparian vegetative communities by decreasing the growth, seed production, and competitiveness of target noxious weeds, thereby releasing native species from competitive pressures and aiding in their reestablishment.

There are currently four herbicides BLM used in riparian and aquatic habitats—2,4-D, Glyphosate, Imazapyr, and Triclopyr—described in Sections 4.2.5 and 4.2.10. These herbicides could affect surface water quality if applied at concentrations in excess of label instructions. However, used at recommended levels, there is low potential for migration into aquatic bodies during stormwater runoff.

Removal of invasive species vegetation could temporarily affect water flows by altering the magnitude of low flows and the frequency and magnitude of peak flows, as compared to pre-treatment conditions. Herbicide treatments that affect the interception of precipitation could increase the magnitude and frequency of peak flows and could subsequently alter the physical characteristics of a stream channel. The scope of the proposed weed treatments would be small enough that changes in vegetative cover would be minor and usually short-term. Restoration of native plant communities and vegetation structure would ultimately improve hydrologic function and watershed processes in the long-term (BLM, 2007).

#### **4.2.4 Soils**

Under the Proposed Action, authorized grazing would continue, however at reduced AUMs and season of use. Approximately 70 percent of the Allotment is comprised of productive loamy

soils (BLM 2014). However, past soil disturbance has decreased potential productivity of the soils that may or may not be currently available to support the desired diversity and vigor of plant communities described in the RESDs provided by the NRCS. Under the Proposed Action, the two water pipeline extensions would temporarily disturb approximately 14 acres of surface areas. The four new water troughs would be placed in flat areas and would locally increase surface disturbances. The installation of four catch corrals, and one holding corral would cause permanent disturbance to less than one acre of soil surfaces. Soil compaction would result from the new range improvements and the associated trailing of livestock into and around these structures. This disturbance represents less than one percent of the Allotment.

Under the Proposed Action, weed treatments would occur in 26 units, consisting of approximately 844 acres of public lands. During herbicide application, foot, vehicles, and/or motorized equipment may cause minor surface disturbance. To the greatest extent practicable, motorized vehicles would remain on existing roads. The application of herbicides would be in compliance with the active ingredient label. Excessive application of herbicides could result in soil contamination, and although very unlikely, filter into the groundwater. Adverse effects to soils would be avoided through proper use of the herbicides and adhering to SOPs.

Under the Proposed Action, juniper trees would be cut by hand with lop and scatter dispersal. Compared to other types of vegetative treatments, this has minimal impacts to soils. Distributing the cut trees across the treatment unit would aid in reducing potential soil erosion by providing organic matter that can absorb precipitation. Reducing the severity of wildfires could decrease the potential for soil erosion that occurs after wildfire due to a lack of vegetative matter on the soil surface.

Under the Proposed Action, exclosure fencing would be installed around the perimeter of approximately 90 acres to protect Webber's ivesia occupied habitat. OHV travel would be redirected around the perimeter on existing routes, minimizing potential soil disturbances. Grazing animals, such as livestock and wild horses, may cause increased soil disturbance on the outside of the fencing as a result of animals traveling around the fencing. Overall surface disturbances from grazing animals would be spread over time and minimal. In the long-term, the benefits of the fencing to protect the Webber's ivesia occupied habitat outweigh the impacts associated with the fencing.

#### **4.2.5 General Wildlife**

Under the Proposed Action, authorized grazing would continue, however at reduced AUMs and season of use (up to 300 cattle for a maximum period of June 1 to March 31 for a total of 3,000 AUMs). Under the Proposed Action, livestock would consume less vegetation than under current management. The reductions accommodate a level of 40 percent utilization under normal climatic conditions versus the current 55 percent utilization level. The Proposed Action also eliminates spring grazing and allows for rest-rotation. Grazing plants early in the growing season may be a factor in reducing plant growth and the amount of seed produced. Grazing at the same time each year may be contributing to the lack of perennial recruitment and to low numbers of riparian plant species. Reduced use under the Proposed Action may improve wildlife habitat by increasing the density, diversity, and vigor of perennial grasses and riparian plants. The condition of riparian vegetation in the four northern pastures would be dependent on riparian

exclosure fence maintenance because these pastures would continue to be used during the hot season (July through September), which is the time of year when cattle tend to stay at or near riparian areas.

Under the Proposed Action, several range improvements would be authorized. The installation of four corrals would cause less than one acre of ground disturbance. Water hauls would improve cattle distribution within pastures. The existing Dogskin Pipeline would be extended to the north and south causing the temporary disturbance of approximately 14 acres. The area of disturbance would be seeded with a BLM-approved seed mix. There would be no additional impact to source waters because only the current number of troughs along the pipeline would be turned on at any one time resulting in zero net increase in water withdrawal. Additionally, flotation devices would be installed to keep water from overflowing.

Under the Proposed Action, weed treatments would occur on 26 units (Table 7) consisting of 844 acres throughout the Allotment, which is less than one percent of the Allotment. The application of herbicides can potentially harm wildlife. Possible adverse effects include mortality, damage to vital organs, change in body weight, decrease in healthy offspring, and increased susceptibility to predation. Species that reside in an area year round or have a small home range would have a greater potential for exposure. Wildlife that inhabit or breed in/on subsurfaces such as insects and burrowing animals would also be at higher risk for exposure. Birds or mammals that eat grasses that have been sprayed are also at greater risk to exposure than those that eat other vegetation or seeds, because herbicide residue is higher on grass (BLM 2007). Wildlife may also be temporarily disturbed or displaced while treatment activities occur.

The Environmental Risk Assessment (ERA) portion of the PEIS (BLM 2007) evaluated toxicological risks to biological receptors of 10 herbicides (not all herbicides listed here are proposed for immediate use, see Table 8). Based on the ERA, risks to terrestrial vertebrates from treatments using these 10 herbicides are:

- Chlorsulfuron, Diflufenzopyr, Fluridone, Imazapic, and Sulfometuron Methyl – No risk to any wildlife group from direct spray at either the typical or maximum application rate;
- Bromacil and Overdrive® – Low risk to insects and large herbivores from direct spray at the maximum application rate;
- Diquat and Diuron – Low risk to insects, birds, and mammals from direct spray at the maximum application rate and less so at the typical application rate; and
- Tebuthiuron – Low risk to large mammalian herbivores and large avian herbivores and high risk to small mammalian herbivores from direct spray at the maximum application rate.

The following eight herbicides approved for use by BLM were not assessed in the ERA, but were assessed in the PEIS in relation to human health. Assuming that exposure risks to human receptors also apply to other terrestrial vertebrates, the following potential risks would be expected:

- Imazapic, Imazapyr, and Metsulfuron Methyl – No risk for any exposure scenario analyzed;

- Glyphosate and Picloram – No risk for most exposures; low risk from ingesting water sprayed directly at the maximum application rate or subjected to a spill;
- Triclopyr – Moderate risk from direct spray onto skin at the maximum application rate; low or no risk from other scenarios; and
- 2,4-D and Hexazinone – Moderate from ingesting directly sprayed fruit or ingesting fish from a pond contaminated by aerial drift; no or low risk for most exposures (BLM 2007).

Wildlife habitat can also be affected. Application of herbicides may kill both target and non-target plants, and native vegetation may be crushed by foot traffic, motorized vehicles, or equipment used during herbicide application. The extent of effects to non-target vegetation varies by the extent and method of treatment, active ingredient used, the physical features of the terrain, and weather conditions at the time of application. Herbicides can affect non-target vegetation through incidental direct spraying, drift, runoff, wind transport, or accidental spills.

Wildlife would benefit from weed treatments over the long-term because weeds can decrease wildlife habitat quality by reducing native plant diversity, altering the fire regime, and depleting soil moisture and nutrient levels. Eliminating or reducing noxious weeds would likely increase native plant species resiliency to disturbances and sustainability in the long-term (BLM 2007). Overall, benefits to wildlife in the long-term from habitat improvement by removing and/or eliminating noxious weeds outweigh the potential short-term effects from herbicide applications.

Under the Proposed Action, fuels treatments would occur on approximately 2,173 acres of public lands. Juniper trees would be lopped and scattered on site with hand tools and small mechanized tools (chainsaws). During implementation of the fuels treatments, localized disturbance or displacement of wildlife may occur from noise, motorized vehicles, and foot traffic. Any disturbance and/or displacement would only occur in a portion of the Allotment and disturbed/displaced individuals could likely move into similar surrounding habitat. There is a low potential that burrows may be crushed by foot traffic, and vehicles would remain on existing roads.

Without fuels treatments, the quality of sagebrush habitat in the Allotment would decline because juniper trees would continue to expand into the sagebrush, limiting the recruitment of new plants and the persistence of a healthy, diverse understory needed for wildlife. As juniper density increases over time, it effectively denies soil moisture to other plants through its disproportionate use and can eventually replace sagebrush habitat. Declining health of sagebrush habitat would decrease forage and cover available to wildlife. Higher fuel loads from increased tree biomass and continuous canopy cover would increase the risk of losing habitat to large-scale, high-severity wildfires, uncharacteristic of the natural fire regime. Sagebrush is killed by fire and natural sagebrush re-colonization in burned areas requires decades for full recovery. The *Nevada Wildlife Action Plan* conservation strategy for sagebrush habitat involves reducing loss to woodland encroachment of juniper and thus stabilizing the loss of sagebrush habitat to wildfire and exotic species invasion (WAPT 2012).

Under the Proposed Action, the BLM would install approximately 10,840 feet of fencing to enclose approximately 90 acres of Webber's ivesia occupied habitat. The fencing would be constructed to meet BLM standards, with measures to minimize impacts to wildlife. There is

low potential for mortality from fencing. Measures such as white-topped fence posts and reflectors would increase fence visibility to help animals avoid fence lines. The benefits of constructing the fencing to protect Webber's ivesia outweigh the low risk of wildlife collisions.

#### **4.2.6 Migratory Birds**

Under the Proposed Action, authorized grazing would continue, however at reduced AUMs and season of use (up to 300 cattle for a maximum period of June 1 to March 31 for a total of 3,000 AUMs). Under the Proposed Action, livestock would consume less vegetation than under current management. The effects to migratory birds from livestock grazing, range improvements, weed and fuels treatments, and Webber's ivesia fencing would be similar to those for general wildlife (Section 4.2.5).

#### **4.2.7 BLM Sensitive Species (Animals)**

Under the Proposed Action, authorized grazing would continue, however at reduced AUMs and season of use (up to 300 cattle for a maximum period of June 1 to March 31 for a total of 3,000 AUMs). Under the Proposed Action, livestock would consume less vegetation than under current management. The effects to sensitive species from livestock grazing, range improvements, fuels and weed treatments, and Webber's ivesia fencing would be similar to those for general wildlife (Section 4.2.5).

Juniper trees are expanding in sage-grouse habitat and would be removed on approximately 2,173 acres of sage-grouse habitat. Juniper trees adversely impact sage-grouse by reducing or eliminating the native vegetation they require for food and cover. Removing trees would help retain sagebrush and understory vegetation by decreasing competition for soil resources, reduce the risk of habitat loss to wildfire, and decrease nesting and perching opportunities for avian predators such as raptors and ravens. Tree removal to reduce wildfire potential is important because wildfires likely increase cheatgrass, further reducing habitat quality. Cheatgrass was the dominant plant species at a monitoring point in PPH.

#### **4.2.8 Threatened or Endangered Species**

Under the Proposed Action, authorized grazing would continue, however at reduced AUMs and season of use. The effects from livestock grazing under the Proposed Action would be the same as under the No Action Alternative (Current Management) (Section 4.1.8). Livestock grazing does not occur in occupied CWS habitat, which is enclosed by fencing. The BLM would implement the fuels treatments, authorize new range improvements, and install fencing to protect Webber's ivesia, however these actions would have no effect to the CWS because they would not occur in or adjacent to the CWS ACEC.

Under the Proposed Action, weed treatment would occur on four units (approximately 22.3 acres) within and adjacent to the CWS ACEC. Treatment of the weeds in the CWS ACEC has been identified by the BLM and the FWS as a top priority because of the high potential for the weed patches to expand and for weed spread to occur within the small ACEC. Non-native plant invasion is identified as a threat in the *Recovery Plan* for the CWS (FWS 2007). Perennial pepperweed is of particular concern because its spreading roots and numerous seeds make it very competitive relative to other native plants and difficult to control. Dense patches often result in near-monoculture sites. The weeds in the ACEC may eventually out-compete and replace the native species if left untreated resulting in a significant loss of habitat for the CWS. The CWS

population that occupies the ACEC is an important, primary population in Nevada; CWS presence in the ACEC has been consistently documented during monitoring efforts since 1997 (FWS 2007). Herbicide treatments would occur in August outside the CWS flight season (June and July).

Under the Proposed Action, the BLM would install fencing around the perimeter of 90 acres of public land to enclose habitat occupied by Webber's ivesia. Construction activities would be deferred between May 1 and June 30, during the flowering season for the plant.

The BLM received concurrence from FWS that the grazing activities and weed treatments adjacent to the CWS ACEC "may affect, not likely to adversely affect" the CWS. The BLM received concurrence from FWS that the construction of enclosure fencing to protect Webber's ivesia and critical habitat "may affect, not likely to adversely affect" the Webber's ivesia.

#### **4.2.9 BLM Sensitive Species (Plants)**

Under the Proposed Action Alternative, there would be a reduction in the season of use and reduced numbers of livestock. The Proposed Action represents a 38 percent reduction in permitted AUMs. Impacts from livestock grazing such as the removal of the above ground biomass of sensitive plants along with impacts to habitat such as trampling and compaction of soil would continue, although at a reduced level. Under the Proposed Action several range improvements are proposed to disperse livestock use and impacts throughout the Allotment. Sensitive plant species would benefit from a more dispersed use as concentrated use in one area over time can be detrimental to plants and their habitat. There could be some initial damage to sensitive species from the construction of range improvements, however mitigation measures such as avoidance or restoration would help offset the potential impacts.

The Allotment currently lacks the recruitment of deep-rooted perennial bunchgrasses and much of the area is dominated by invasive non-native plants which compete against native vegetation, including sensitive plant species. The abundance of invasive non-native plants, many of which are annuals, can lead to increased frequency and extent of wildfires and an increase in fire return intervals. While many sensitive plant species are adapted to fire, increased fire return intervals could negatively impact sensitive species and their habitat over the long-term leading to declines in species populations. There are 26 units within the Allotment where herbicide applications would be conducted. Sensitive plant species found within these units would likely see a reduction in invasive, non-native plants and noxious weeds, however the treated units only occur on 844 acres which is less than one percent of the Allotment. The application of herbicides could potentially harm sensitive plant species that may come into contact with herbicides. Herbicides could unintentionally come into contact with and affect non-target plants through herbicide drift, runoff, wind transport, or accidental spills and direct spraying. Potential effects include mortality, reduced productivity, and abnormal growth. The risk characterization process of the ERA indicated that risk to special status terrestrial plants associated with off-site drift of Bromacil, Clopyralid, Chlorsulfuron, Dicamba, Diquat, Diuron, Imazapyr, Metsulfuron Methyl, Sulfometuron Methyl or Triclopyr would be moderate to high. Adherence to SOPs during weed abatement activities would minimize impacts (BLM 2007).

To minimize potential impacts to sensitive plant species during fuels treatments, vehicles would remain on existing roads, and treatments would be conducted by lop and scatter, rather than using machinery. There is a low potential for sensitive plant species to be crushed or trampled during the treatments.

Sensitive plant species found within the Webber's ivesia critical habitat would benefit from the protective enclosure, although may be potentially damaged by its construction. Mitigation measures such as avoidance and restoration would be implemented to minimize impacts.

#### **4.2.10 Invasive, Non-Native Plant Species and Noxious Weeds**

Under the Proposed Action Alternative, there would be a reduction in the season of use and reduced numbers of livestock. The Proposed Action Alternative represents a 38 percent reduction in permitted AUMs. Impacts from livestock grazing such as the removal of the above ground biomass of invasive, non-native plants and noxious weeds are unlikely to be any different from current management as most invasive, non-native plants and noxious weeds are unpalatable.

Concentrated livestock use in one area over time can be detrimental to plants and their habitat, and often become areas where undesirable invasive, non-native species and noxious weeds establish. Under the Proposed Action several range improvements are planned to disperse livestock use and impacts throughout the Allotment. There could be some initial damage to the native plant community from the construction of range improvements that might produce suitable conditions for the establishment of invasive species, however mitigation measures such as weed abatement efforts and restoration would help offset the impacts.

The Allotment currently lacks the recruitment of deep-rooted perennial bunchgrasses and much of the area is dominated by invasive non-native plants which compete against native vegetation. The abundance of invasive non-native plants, many of which are annuals, can lead to increased frequency and extent of wild fires and an increase in fire return intervals. While many plant species are adapted to fire, increased fire return intervals could negatively impact plant species and their habitat over the long-term leading to declines in species populations. Under the Proposed Action there are 26 units within the Allotment where herbicide applications would be conducted. Although the treated units comprise only 844 acres, which is less than one percent of the Allotment, they are important because they are within and adjacent to riparian areas which are important wildlife habitat. The application of herbicides could potentially harm desirable plant species that may come into contact with herbicides. Herbicides could unintentionally come into contact with and affect non-target plants through herbicide drift, runoff, wind transport, or accidental spills and direct spraying. Potential effects include mortality, reduced productivity, and abnormal growth. The risk characterization process of the ERA indicated that risk to typical terrestrial plants associated with offsite drift of Bromacil, Clopyralid, Chlorsulfuron, Dicamba, Imazapyr, Metsulfuron Methyl and Triclopyr would be moderate to high. Adherence to SOPs during weed abatement activities would minimize impacts (BLM 2007). Livestock and wildlife are at risk if any plant material with herbicide residue is consumed (see Section 4.2.5). To minimize risks due to the application of herbicides, SOPs in the use of herbicides would be followed (BLM 2007) and prior notification of weed abatement activities would be made to the permittee, local tribes and adjacent land owners.

Under the Proposed Action fuels treatments would be authorized. The disturbance to the native plant community may allow the establishment of invasive, non-native plant species and noxious weeds. To mitigate for possible weed infestations, SOPs would be in place during the fuels treatment to minimize impacts. The area would be surveyed for noxious weeds and if found, weeds would be treated according to established BLM protocol (BLM 2007).

There could be some potential damage to the native plant community from the construction of the Webber's ivesia critical habitat enclosure fence that might produce suitable conditions for the establishment of invasive species, however mitigation measures such as weed abatement efforts and restoration would help offset the impacts. Consultation with the FWS would be made prior to any weed abatement efforts within and adjacent to the enclosure.

#### **4.2.11 Fire Management**

Under the Proposed Action, the treatment area would become more consistent with the historic fire regime. Over time the fuel load would decrease reducing fire intensity and spotting potential in the treatment area. In the event of a wildfire, the treatment area would be at a lower risk of losing key ecosystem components. The trend of converting the treatment area into Phase 2 woodland would be reversed. The shrubs and grasses would remain the dominant vegetation influencing the ecological processes in the treatment area.

Under the Proposed Action, the BLM would coordinate with the permittee to minimize the disruption of grazing operations while the fuels treatments are implemented. The BLM may modify the timing of the fuels treatment to a time of the year when livestock are not grazing in the Tule and Fall pastures.

#### **4.2.12 Area of Critical Environmental Concern**

Under the Proposed Action, authorized grazing would continue, however at reduced AUMs and season. The effects from the Proposed Action would be similar to the No Action Alternative (Current Management) (Section 4.1.12), although livestock would consume less forage (vegetative cover). There are no proposed fuels and weed treatments in the Incandescent Rocks ACEC, therefore these actions would have no effect on this ACEC. Under the Proposed Action, weed treatments would occur in and adjacent to the CWS ACEC. These treatments would not be expected to have a long-term adverse effect on the ACEC. Areas of noxious weeds that are treated may temporarily have an increase in dead plant material, but over the long-term other native plant species present would re-occupy these areas.

#### **4.2.13 Socioeconomics**

Under the Proposed Action, there would be reduced grazing in the Allotment. The social and economic benefits associated with grazing operations would be decreased. The reduction in AUMs would likely have a multiplier effect on aspects of the local economy that are associated with the ranching community. Because it is not possible to quantify the specific monetary impacts to the individual permittee, it is also not possible to accurately estimate the resulting effects on the local economy. A reduction in AUMs would result in a corresponding reduction in regional economic activity from a likely reduction in the permittee's spending in the local economy. Reduced grazing on the Allotment would adversely impact the permittee, any

employees, the businesses where the permittee purchases supplies from, and the communities that are supported by livestock operations. These results could decrease tax revenues for the local economy.

Implementation of the fuels and weed treatments, and Webber's ivesia fencing under the Proposed Action may have a slight beneficial effect on socioeconomics. BLM employees or contractors involved in these activities purchase supplies, fuel from local suppliers, and hire employees.

#### **4.2.14 Travel Management**

Continuation of livestock grazing, and implementation of the fuels and weed treatments under the Proposed Action would have no effect to travel management.

Under the Proposed Action, the BLM would install enclosure fencing around approximately 90 acres of public lands (Figure 9). The fencing would be approximately 10,840 feet in length and would meet BLM standards, including measures to minimize impacts to wildlife. The BLM would issue a temporary restriction order to close 1.3 miles of routes within the proposed enclosure area. The BLM has determined that there are sufficient alternative routes around the perimeter of the closure area that would continue to accommodate north-south and east-west bound recreational OHV use. Only after a permanent closure is approved in a Travel Management Plan would the BLM proceed to reclaim/rehabilitate the routes within the enclosure area.

#### **4.2.15 Wild Horses and Burros**

Under the Proposed Action, authorized grazing would continue although at reduced levels. There would be no changes to the forage allocated to wild horses, although reduced livestock grazing may slightly increase forage available for wild horses. Implementation of the fuels treatments and new range improvements would temporarily disturb or displace wild horses, if present. These localized disturbances would affect individuals in the short-term, but would not be expected to affect regional populations in the long-term.

Weed treatments would occur in 26 units throughout the Allotment. One treatment unit consisting of less than one acre occurs within the Dogskin HMA. The wild horses in this region are known to range throughout the Allotment. Because wild horses range over large areas, their amount of exposure to herbicides would be low. The greatest risk to wild horses is from the consumption of vegetation that has been treated by herbicides. Because herbicide residue is higher on grasses than it is on other plants, wild horses that consume large quantities of grasses are at a higher risk of exposure to herbicides. A reduction in the cover of noxious weeds would benefit wild horses, which tend to avoid consuming most noxious weeds species. Wild horses often prefer native species over noxious weeds, in part due to their lack of toxins, spines, and/or distasteful compounds. Eliminating or reducing the presence in noxious weeds would benefit wild horses through the reestablishment of native species (BLM 2007).

Under the Proposed Action, the BLM would install fencing around the perimeter of occupied Webber's ivesia habitat. This would remove approximately 90 acres available for foraging by wild horses, however this is less than one percent of the Allotment.

### **4.3 Alternative C: No Grazing Alternative**

#### **4.3.1 Livestock Grazing**

Under the No Grazing Alternative, the BLM would not issue a new term livestock grazing permit for the Allotment. No livestock grazing would be authorized on public lands within the Allotment. Under the No Grazing Alternative, no new range improvements would be authorized, and the BLM would consider the removal of existing range improvements within the Allotment. The BLM would implement the fuels and weed treatments as described in the Proposed Action (Section 4.2.2); there would be no effect on livestock grazing because there would be no livestock grazing.

#### **4.3.2 Vegetation**

Under the No Grazing Alternative, no annual forage production would be removed by livestock grazing. Perennial bunchgrasses would continue to be impacted by other grazing animals such as wild horses and by OHV use. The fuel loads would be greater without livestock grazing and the density of cheatgrass may expand, dominating additional areas of the Allotment.

Under the No Grazing Alternative, there would be no impacts to vegetation from new range improvements, because none would be authorized. The BLM would implement the fuels and weed treatments, and Webber's ivesia exclosure fencing. The effects from these actions on vegetation would be the same as described in the Proposed Action (Section 4.2.2).

#### **4.3.3 Wetlands/Riparian Zones**

Under the No Grazing Alternative, no impacts to riparian zones and their associated vegetation would occur from livestock grazing. Riparian zones that are lacking a diverse age class or composition of plant species would benefit from the No Grazing Alternative, if livestock grazing is the primary driver of a lack of diverse plant composition. Under the No Grazing Alternative, the BLM maintain existing exclosure fencing around riparian areas.

Year round use by wild horses would continue to impact unfenced riparian areas. Under the No Grazing Alternative, there would be no impacts to riparian zones from new range improvements because none would be authorized. The BLM would implement the fuels and weed treatments, effects from these actions on riparian zones would be the same as described in the Proposed Action (Section 4.2.3). Fencing to protect Webber's ivesia critical habitat would not occur in wetlands/riparian zones.

#### **4.3.4 Soils**

Under the No Grazing Alternative, impacts to soils would no longer occur from livestock grazing. Impacts to soils from OHV use and other grazing animals such as wild horses would continue in the Allotment. There would be no impacts from new range improvements, because none would be authorized. The BLM would implement the fuels and weed treatments, and Webber's ivesia exclosure fencing. The effects from these actions on soils would be the same as described in the Proposed Action (Section 4.2.4).

#### **4.3.5 General Wildlife**

Under the No Grazing Alternative, no impacts to wildlife or their habitats would occur from authorized livestock grazing. Current livestock grazing practices are among factors affecting the health of perennial grasses and riparian plants, therefore vegetation conditions in the Allotment would likely benefit from the removal of livestock grazing (BLM 2014a). No vegetation would be consumed or trampled by cattle, and the density, diversity, and vigor of perennial grasses and riparian plants could improve under the No Grazing Alternative. In particular, the reproductive capability of key grasses would likely increase. Some vegetation conditions would not respond solely to changes in livestock management and may require active restoration efforts such as juniper thinning and weed treatments. Impacts to wildlife habitat from recreational and OHV use, wild horses, and other activities would continue to occur in the Allotment. Wildfires, roads, pipeline and transmission rights-of-way, and mining have contributed to the fragmentation of wildlife habitat. There would be no impact to wildlife or their associated habitats from new range improvements because none would be authorized. The BLM would implement the fuels and weed treatments, and Webber's ivesia enclosure fencing. The effects from these actions on wildlife would be the same as described in the Proposed Action (Section 4.2.5).

#### **4.3.6 Migratory Birds**

Under the No Grazing Alternative, no impacts to migratory birds or their habitats would occur from authorized livestock grazing. Current livestock grazing practices are among factors affecting the health of perennial grasses and riparian plants, therefore vegetation conditions in the Allotment would likely benefit from the removal of livestock grazing (BLM 2014a). No vegetation would be consumed or trampled by cattle, and the density, diversity, and vigor of perennial grasses and riparian plants could improve under the No Grazing Alternative. In particular, the reproductive capability of key grasses would likely increase. Some vegetation conditions would not respond solely to changes in livestock management and may require active restoration efforts such as juniper thinning and weed treatments. Impacts to migratory bird habitat from recreational and OHV use, wild horses, and other activities would continue to occur in the Allotment. Wildfires, roads, pipeline and transmission rights-of-way, and mining have contributed to the fragmentation of wildlife habitat. There would be no impacts to migratory birds or their associated habitats from new range improvements because none would be authorized. The BLM would implement the fuels and weed treatments, and Webber's ivesia enclosure fencing. The effects from these actions on migratory birds would be the same as described in the Proposed Action (Section 4.2.6).

#### **4.3.7 BLM Sensitive Species (Animals)**

Under the No Grazing Alternative, no impacts to BLM sensitive species or their habitats would occur from authorized livestock grazing. Current livestock grazing practices are among factors affecting the health of perennial grasses and riparian plants, therefore vegetation conditions in the Allotment would likely benefit from the removal of livestock grazing (BLM 2014a). No vegetation would be consumed or trampled by cattle, and the density, diversity, and vigor of perennial grasses and riparian plants could improve under the No Grazing Alternative. In particular, the reproductive capability of key grasses would likely increase. Some vegetation conditions would not respond solely to changes in livestock management and may require active restoration efforts such as juniper thinning and weed treatments. Impacts to sensitive species habitat from recreational and OHV use, wild horses, and other activities would continue to occur

in the Allotment. Wildfires, roads, pipeline and transmission rights-of-way, and mining have contributed to the fragmentation of wildlife habitat. There would be no impacts to sensitive species or their associated habitats from new range improvements because none would be authorized. The BLM would implement the fuels and weed treatments, and Webber's ivesia enclosure fencing. The effects from these actions on sensitive species would be the same as described in the Proposed Action (Section 4.2.7).

#### **4.3.8 Threatened or Endangered Species**

Under the No Grazing Alternative, no impacts to the CWS ACEC would occur from authorized livestock grazing. Livestock grazing does not occur in the portion of the ACEC that is occupied CWS habitat because it is enclosed with fencing. Grazing could currently occur in the unfenced portion of the ACEC, but impacts in the unfenced portion are unlikely because it is not characteristic of quality CWS habitat and CWS have not been observed in the unfenced portion during surveys. No impacts to CWS would occur from new range improvements because they would not be authorized. The BLM would implement the fuels and weed treatments, and Webber's ivesia fencing. The effects from these actions on the CWS would be the same as described in the Proposed Action (Section 4.2.8).

The BLM would implement the fuels treatments, however these actions would have no effect to habitat occupied by the Webber's ivesia. The BLM would implement the weed treatments and Webber's ivesia fencing, effects would be the same as the Proposed Action (Section 4.2.8).

#### **4.3.9 BLM Sensitive Species (Plants)**

Under the No Grazing Alternative no annual forage production would be removed by livestock grazing. Ongoing impacts to sensitive species from OHV use, wild horses and other activities would continue to effect sensitive species. Under the No Grazing Alternative, there would be no impacts to sensitive species from new range improvements, because none would be authorized. The BLM would implement the fuels and weed treatments, and Webber's ivesia enclosure fencing. The effects from these actions on sensitive species would be the same as described in the Proposed Action (Section 4.2.9).

#### **4.3.10 Invasive, Non-Native Plant Species and Noxious Weeds**

Under the No Grazing Alternative, no livestock grazing would occur, which would remove one vector that can transport vegetative parts and/or seed of noxious weeds to other locations. Other vectors that can transport noxious weeds, such as wind, overland water flow, OHV use and grazing by wild horses would continue. Under the No Grazing Alternative, there would be no impacts to noxious weeds from new range improvements, because none would be authorized. The BLM would implement the fuels and weed treatments, and Webber's ivesia enclosure fencing. The effects from these actions on noxious weeds would be the same as described in the Proposed Action (Section 4.2.10).

#### **4.3.11 Fire Management**

Under the No Grazing Alternative, the fuels treatment would still be implemented. The treatment area would become more consistent with the historic fire regime. Over time the fuel load would decrease reducing fire intensity and spotting potential in the treatment area. The fire regime condition class would remain at Phase 1, meaning the treatment area is at a low risk of

losing key ecosystem components. The trend of converting the treatment area into Phase 2 woodland would be reversed. The shrubs and grasses would remain the dominant vegetation influencing the ecological processes for the treatment area. Under the No Grazing Alternative, there would be no impacts to livestock operations during fuels treatments, because there would be no authorized livestock grazing.

#### **4.3.12 Area of Critical Environmental Concern**

Under the No Grazing Alternative, no impacts to ACECs would occur from livestock grazing. Ongoing impacts to ACECs from OHV use, wild horses and other activities would continue. The BLM would maintain the existing fencing around occupied CWS habitat to prevent damage from OHV use. The BLM would implement the fuels treatments and Webber's ivesia enclosure fencing, however these actions would have no effect to the ACECs. Under the No Grazing Alternative, the BLM would implement the weed treatments in the CWS ACEC, effects would be the same as the Proposed Action (Section 4.2.12).

#### **4.3.13 Socioeconomics**

Under the No Grazing Alternative, there would be no authorized livestock grazing in the Allotment. The social and economic benefits associated with grazing operations would be lost. The elimination of AUMs would likely have a multiplier effect on aspects of the local economy that are associated with the ranching community. Because it is not possible to quantify the specific monetary impacts to the individual permittee, it is also not possible to accurately estimate the resulting effects on the local economy. Elimination in AUMs would result in a corresponding reduction in regional economic activity from a likely reduction in the permittee's spending in the local economy. Eliminating grazing on the Allotment would adversely impact the permittee, any employees, the businesses where the permittee purchases supplies from, and the communities that are supported by livestock operations. The permittee would have to relocate their livestock to private land or a different allotment available for use on public land, possibly outside Washoe County. If the permittee's use of public land is critical to their operation, the permittee may be forced to sell off their livestock and/or close their grazing operation entirely. These results would decrease tax revenues for the local economy.

Implementation of the fuels and weed treatments under the No Grazing Alternative may have a slight beneficial effect on socioeconomics. BLM employees or contractors involved in these activities purchase supplies, fuel from local suppliers, and hire employees.

#### **4.3.14 Travel Management**

Implementation of the fuels and weed treatments under the No Grazing Alternative would have no effect to travel management. Under the No Grazing Alternative, the BLM would install enclosure fencing around approximately 90 acres of public lands, and the effects would be the same as described in the Proposed Action (Section 4.2.14).

#### **4.3.15 Wild Horses and Burros**

Under the No Grazing Alternative, there would be no authorized livestock grazing in the Allotment. Elimination of livestock grazing would result in increased forage available for wild horses. The BLM would implement the fuels and weed treatments, and Webber's ivesia

enclosure fencing. The effects from these actions on wild horses would be the same as described in the Proposed Action (Section 4.2.15).

#### **4.4 Residual Effects**

“Residual effects” are those adverse effects that remain after implementation of mitigation measures. No major adverse effects (aka “significant effects”) have been identified in this final EA. Measures have been incorporated into the elements of the Proposed Action (Section 2.2.6) to avoid or minimize adverse effects. No mitigation is necessary; there would be no residual effects.

## **5.0 CUMULATIVE EFFECTS**

A cumulative effect is defined under NEPA as “the change in the environment which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other action”. “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR Part 1508.7). Past, present, and reasonably foreseeable future actions are analyzed to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the Proposed Action and Alternatives may have an additive relationship to those effects.

### **Geographic Scope**

The geographic scope of the cumulative effects study area (CESA) is the entire Allotment, consisting of approximately 89,779 acres of public and private lands. The CESA for noxious weeds includes a one-mile buffer around the Allotment, for a total of 137,144 acres of public and private lands (Figure 11).

### **Timeframe of Effects**

Direct and indirect effects associated with livestock grazing and range improvements would occur over a 10-year period, which is the lifespan of the new term livestock grazing permit.

### **Past Actions**

The Allotment is located at the south end of the Virginia Mountains and was subject to a historic fire regime of wildfire caused by lightning strikes. Natural caused fires have burned several acres to several thousand acres during a fire event. See Section 3.4.11 for the fire history in the Allotment.

Historically, some degree of livestock grazing is likely to have occurred in the area covered by the Allotment since the mid to late 1800’s. Livestock grazing has been and is a well-established element in the regional economy and is an integral part of the larger society. Many allotments in the West area managed as a part of multi-generational and family operations that rely on grazing on public lands for income.

Approximately 16 miles of Allotment boundary and pasture fencing has been previously authorized and constructed. Exclosure fencing was constructed around Paiute Spring #3 and #5. Approximately three miles of fencing were previously constructed to enclose a portion of the Carson Wandering Skipper ACEC to prevent OHV use and grazing in occupied habitat.

The Dogskin Mountain HMA is located entirely within the Allotment (Figure 2). The HMA consists of 6,445 acres of public lands. In 1973 the population estimate of wild horses was six animals; the most recent census in May 2012 counted 26 animals. The Appropriate Management Level (AML) was set by a Multiple Use Decision in 1993 at 10 to 15 wild horses (BLM 1993). The most recent gather and removal of wild horses was completed in January 2012; twenty wild horses residing outside the HMA were removed.

Dispersed recreation has occurred throughout the Allotment. General activities include: rock hounding, hunting, target shooting, sightseeing, OHV use, and wildlife viewing. General

intensity of use is dispersed. Recreational uses in the Hungry Valley Recreation Area, which includes Moon Rocks, a popular area for OHV ‘crawling,’ is seasonally heavy and intense use. A partial inventory of routes was completed in 2012, there are at least 139 miles of routes within the Allotment. Annually in certain areas, the BLM permits woodcutting/firewood gathering and cutting/removal of younger evergreen trees for the holiday season. The BLM permits non-commercial and commercial recreation events through its Special Recreation Permit (SRP) program. Table 16 lists the past and current SRP’s authorized in the Allotment.

**Table 16. Special Recreation Permits.**

Name	Permit (Years)	Type	Area*
German Shorthair Pointer Club	2010-2015	Field Dog Trials	Hungry Valley
German Shorthair Pointer Club of America	2013	National Amateur Gun Dog Championship	Hungry Valley
Red Rock Rumble	2012-2016	Horse Endurance Ride	Sand Hills, Bedell Flat, Dogskin
Reno Rodeo	2007-2014	Cattle Drive	Bedell Flat, Hungry Valley, Winnemucca Ranch Road
Rimbenders	2007-2014	Competitive Motorcycle Race	Hungry Valley, south of Moon Rocks

Lands and realty actions have included authorizations for rights-of-ways for overhead transmission lines, an underground gas pipeline, an airport, a model plane airport, and public lands under lease for recreational purposes.

Approximately 20 percent of the lands within the Allotment are privately-owned. Activities on private lands include: livestock grazing, recreation, residential development, utility corridors, mining and roads.

**Present Actions**

Livestock grazing is a present activity on the Allotment, authorized by the BLM under a term livestock grazing permit. Livestock grazing in the Allotment is a part of the regional economy and larger society. Sixteen miles of existing fencing within the Allotment are maintained, including enclosure fencing around Paiute Spring #3 and #5. Approximately three miles of fencing enclose a portion of the CWS ACEC.

Recreational activities are on-going in the Allotment. There are no requests before the BLM for ROW authorizations.

**Reasonably Foreseeable Actions**

Under the No Action Alternative (Currently Management) and Proposed Action, livestock grazing would continue to occur for a 10-year period, the lifespan of the new term livestock grazing permit. The No Grazing Alternative would result in the removal of all cattle from the Allotment, and the fine fuels that promote increased fire intensity and severity would remain. There would likely be economic harm to the permittee and livestock grazing on the Allotment would no longer contribute to the regional economy and larger society.

Under the Proposed Action and No Grazing Alternatives, the BLM would implement fuels and weed treatments on the Allotment. Under the No Action Alternative, the BLM would authorize the installation of fencing to protect the occupied/critical habitat for Webber's ivesia.

Maintenance of fencing within the Allotment would continue under the No Action Alternative (Currently Management) and Proposed Action. Under the No Grazing Alternative the enclosure fencing around Paiute Spring #3 and #5, and Allotment pasture fencing could be removed if not necessary for management of the adjacent Allotments and protection of the springs from wild horses. Fencing around the CWS ACEC would continue to be maintained to prevent OHV use from occurring within occupied habitat.

Recreational activities would continue in the future. There are no requests before the BLM for ROW authorizations, although requests could occur at any time.

### Effects Analysis

Resource topics considered under the Effects Analysis include all resources identified in Tables 9 and 10 in Section 3.0 which "may be affected" by direct or indirect effects of the Proposed Action or Alternatives. Effects analysis considered all identified past, present and reasonably foreseeable actions within the CESA.

#### *Livestock Grazing*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, respectively, a beneficial cumulative effect. Implementing the No Grazing Alternative would likely cause economic harm to the permittee, which would be an adverse cumulative effect to livestock grazing and the regional economy. Under the No Grazing Alternative and Proposed Action, the BLM would implement the fuels and weed treatments, which would have a slight beneficial effect on available forage, which would cumulatively benefit livestock grazing. Under the No Action Alternative (Current Management), the BLM would not implement the fuels and weed treatments, a negligible cumulative effect to livestock grazing.

#### *Vegetation*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, respectively. Under the Proposed Action, vegetation including deep-rooted bunch grasses may cumulatively benefit from the elimination of spring grazing. Under the No Grazing Alternative, vegetation including deep-rooted bunch grasses may cumulatively benefit from the elimination of year round livestock grazing. Other pressures on vegetation such as OHV use and wild horses would continue, a negligible cumulative effect.

Under the No Action Alternative (Current Management), there would be no fuels and weed treatments, a negligible cumulative effect to vegetation. Under the Proposed Action and No Grazing Alternative, the BLM would implement the fuels and weed treatments, which would cumulatively benefit native vegetation and sagebrush communities. There would be a negligible cumulative effect on the juniper woodlands from implementation of the fuels treatments. During construction of the range improvements and installation of the Webber's ivesia fencing under the

Proposed Action and No Grazing Alternative, there would be negligible cumulative effects to vegetation.

#### *Wetland/Riparian Zones*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, respectively. Under the Proposed Action, riparian areas may cumulatively benefit from the elimination of spring grazing. Under the No Grazing Alternative, riparian areas may cumulatively benefit from the elimination of year round livestock grazing. Other pressures on riparian areas, such as OHV use and wild horses would continue, a negligible cumulative effect. Under the Proposed Action and No Grazing Alternative, fuels and weed treatments would have short-term negligible cumulative effects to riparian areas, although riparian communities would be expected to benefit cumulatively in the long-term from weed treatments.

#### *Soils*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue, a negligible cumulative effect to soils. Under the No Grazing Alternative, livestock grazing would not be authorized, a slight beneficial cumulative effect. Other impacts to soils such as wild horses and OHV use would continue, a negligible cumulative effect to soils. Under the Proposed Action and No Grazing Alternative, fuels and weed treatments, range improvements and Webber's ivesia fencing would have localized effects to soils during implementation, a negligible cumulative effect. Use of the range improvements over the long-term would have negligible cumulative effects to less than one percent of the Allotment.

#### *General Wildlife*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, respectively. Under the Proposed Action, wildlife habitat including deep-rooted bunch grasses may cumulatively benefit from the elimination of spring grazing. Under the No Grazing Alternative, wildlife habitat including deep-rooted bunch grasses may cumulatively benefit from the elimination of year round livestock grazing. Other pressures on wildlife habitat such as OHV use and wild horses would continue, a negligible cumulative effect.

Under the Proposed Action, range improvements and the Webber's ivesia fencing would be implemented, causing localized displacement during construction, and negligible cumulative effects to wildlife. Under the Proposed Action and No Grazing Alternative, implementation of the fuels treatments would have short-term effects to wildlife by displacement, but in the long-term sagebrush associated species would cumulatively benefit. Under the Proposed Action and No Grazing Alternative, implementation of the weed treatments in the long-term would cumulatively benefit native plant species (wildlife habitat).

#### *Migratory Birds*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, respectively. Under the Proposed Action, migratory bird habitat including deep-rooted bunch grasses may cumulatively benefit from the elimination of spring grazing. Under the No Grazing Alternative, migratory bird habitat

including deep-rooted bunch grasses may cumulatively benefit from the elimination of year round livestock grazing. Other pressures on wildlife habitat such as OHV use and wild horses would continue, a negligible cumulative effect.

Under the Proposed Action, range improvements and the Webber's ivesia fencing would be constructed, causing localized displacement during construction, a negligible cumulative effect to migratory birds. Under the Proposed Action and No Grazing Alternative, implementation of the fuels treatments would have short-term effects to migratory birds by displacement, but in the long-term cumulatively sagebrush associated migratory birds would cumulatively benefit. Under the Proposed Action and No Grazing Alternative, implementation of the weed treatments in the long-term would cumulatively benefit native plant species (migratory bird habitat).

#### *BLM Sensitive Species (Animals)*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, respectively. Under the Proposed Action, sensitive animal species habitat including deep-rooted bunch grasses may cumulatively benefit from the elimination of spring grazing. Under the No Grazing Alternative, sensitive animal species habitat including deep-rooted bunch grasses may cumulatively benefit from the elimination of year round livestock grazing. Other pressures on sensitive animal species habitat such as OHV use and wild horses would continue, a negligible cumulative effect.

Under the Proposed Action, range improvements and the Webber's ivesia fencing would be constructed, causing localized displacement during construction, and negligible cumulative effects to sensitive animal species. Under the Proposed Action and No Grazing Alternative, implementation of the fuels treatments would have short-term effects to sensitive animal species by displacement, but in the long-term sagebrush associated sensitive animal species would cumulatively benefit. Under the Proposed Action and No Grazing Alternative, implementation of the weed treatments would in the long-term cumulatively benefit native plant species (sensitive animal species habitat).

#### *Threatened or Endangered Species*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, a negligible cumulative effect. No grazing occurs in occupied CWS habitat which is enclosed by fencing. Under the Proposed Action and No Grazing Alternative, once fencing is constructed around Webber's ivesia occupied habitat, livestock and wild horse grazing and OHV use would no longer have an impact on this occupied habitat, beneficial cumulative effect. Under the No Action Alternative (Current Management), the BLM would authorize the fencing to protect the occupied/critical habitat for the Webber's ivesia, a beneficial cumulative effect.

Under the No Action Alternative (Current Management) and Proposed Action, there would be no cumulative effects to threatened or endangered species from the range improvements. Under the Proposed Action and No Grazing Alternative, there would be no cumulative effects to threatened or endangered species from the fuels treatments.

### *BLM Sensitive Species (Plants)*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, respectively. Under the Proposed Action, sensitive plant species may cumulatively benefit from the elimination of spring grazing. Under the No Grazing Alternative, sensitive plant species may cumulatively benefit from the elimination of year round livestock grazing. Other pressures on sensitive plant species such as OHV use and wild horses would continue, a negligible cumulative effect.

Under the No Action Alternative (Current Management), there would be no fuels and weed treatments, a negligible cumulative effect to sensitive plant species. Under the Proposed Action and No Grazing Alternative, the BLM would implement the fuels and weed treatments, which would cumulatively benefit sensitive plant species. During construction of the range improvements and installation of the Webber's ivesia fencing under the Proposed Action and No Grazing Alternative, there would be negligible cumulative effects to sensitive plant species.

### *Invasive, Non-Native Species*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, respectively. Livestock grazing is one of several vectors that can transport noxious weeds, seeds, and their vegetative parts to new areas in or outside the Allotment, a negligible cumulative effect. Under the No Grazing Alternative, livestock grazing would not occur, but other vectors that can transport noxious weeds, seeds, and their vegetative parts would continue, a negligible cumulative effect.

Under the No Action Alternative (Current Management), there would be no range improvements, fuels treatments, or Webber's ivesia, which would have no cumulative effect on noxious weeds. Under the No Grazing Alternative, there would be no authorized livestock grazing, which would remove one potential vector that can spread noxious weeds, a cumulatively beneficial effect. Under the Proposed Action and No Grazing Alternative, fuels treatments and Webber's ivesia fencing would be implemented, a negligible cumulative effect.

Under the No Action Alternative (Current Management), there would be no weed treatments. Noxious weeds would continue to increase and displace native vegetation, an adverse cumulative effect. Under the Proposed Action and No Grazing Alternative, the BLM would implement the weeds treatments, which may adversely affect native species in the short-term, but in the long-term would cumulatively benefit native species.

### *Fire Management*

Under the No Action Alternative (Current Management) there would be no fuels treatment; the risk of wildfire would increase and habitat values would decline, an adverse cumulative effect. Under the Proposed Action and No Grazing Alternatives fuels treatments would occur, a cumulatively beneficial effect.

### *Area of Critical Environmental Concern*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels. Little or no livestock grazing occurs in the Incandescent Rocks ACEC, and no livestock grazing occurs within occupied CWS habitat in the

CWS ACEC. The continuation of livestock grazing would have a negligible effect to the ACECs. Under the No Grazing Alternative, livestock grazing would be eliminated, a slight beneficial effect on ACECs. Under the Proposed Action and No Grazing Alternative, the BLM would implement the weed treatments in the CWS ACEC, a slight beneficial cumulative effect. There would be no cumulative effects to ACECs from fuels treatments, range improvements, and the Webber's ivesia fencing.

#### *Socioeconomics*

Under the No Action Alternative (Current Management) and Proposed Action, livestock grazing would continue at existing and reduced levels, a beneficial cumulative effect. Under the No Grazing Alternative livestock grazing would be eliminated, a negligible cumulative effect. Under the Proposed Action and No Grazing Alternative, the BLM would implement the fuels and weed treatments, and Webber's ivesia fencing, a slight beneficial effect to socioeconomics.

#### *Travel Management*

Under the No Action Alternative (Current Management) there would be no cumulative impacts to travel management. Under the Proposed Action and No Grazing Alternative, there would be negligible cumulative effects from the closure of approximately 1.3 miles of travel routes.

#### *Wild Horses and Burros*

Under the No Action Alternative (Current Management) and Proposed Action there would be no change to forage allocated for wild horses. Under the No Action Alternative (Current Management) and Proposed Action livestock grazing would continue, at existing and reduced levels, respectively. Livestock, wildlife and wild horses competes for the same forage resources, therefore reduced livestock grazing under the Proposed Action may cumulatively benefit wild horses. Under the No Grazing Alternative, there would be no livestock grazing, a beneficial cumulative effect for wild horses.

Under the No Action Alternative (Current Management), fuels and weed treatments, range improvements, and Webber's ivesia fencing would not be constructed, these actions would have no cumulative effect to wild horses. Under the Proposed Action and No Grazing Alternative, there would be new range improvements and Webber's ivesia fencing that may have a cumulative negligible effect on wild horses and/or their forage. Under the Proposed Action and No Grazing Alternative, wild horses may be locally displaced during the fuels treatments and installation of range improvements, a short-term negligible cumulative effect.

### **5.1 Monitoring**

Monitoring would continue as it has before on the Allotment. Utilization data would be collected at the end of livestock use periods. Actual use would be collected after the end of the grazing season. Trend studies, which are located throughout the Allotment, would be read at least every decade to ensure continued vegetative health and upward trend. Monitoring of cultural resources would continue. All monitoring would be performed in accordance with BLM policy following protocols from BLM approved manuals and technical references. Monitoring would occur where and when applicable and as resources allow.

Monitoring would be conducted throughout the fuels treatment area both during and after implementation. Monitoring would consist of surveys to:

- Ensure that the initial fuel treatment objectives are met;
- Evaluate fuel load recovery;
- Evaluate the need to remove conifers that were passed over the first time;
- Evaluate habitat characteristics; and
- Identify invasive species for subsequent treatment.

Re-application of the approved herbicides may be required based on monitoring if the first application is unsuccessful or the noxious weed has spread at the treated sites.

## 6.0 PERSONS, GROUPS, AND AGENCIES CONSULTED

### 6.1 List of Preparers

#### Bureau of Land Management

Name	Title	Project Expertise
Ryan Leary	Range Management Specialist	Livestock Grazing, Vegetation
Katrina Leavitt	Range Management Specialist	Livestock Grazing, Vegetation
Rachel Crews	Archeologist	Cultural Resources, Native American Religious Concerns
Keith Barker	Fire Ecologist	Fire Management
Brian Buttazoni	Planning and Environmental Coordinator	NEPA Compliance, ACECs, Travel Management, Wild Horses and Burros, Socioeconomics, Cumulative Effects
Niki Cutler	Hydrologist	Wetland/Riparian Zones, Soils
Dean Tonenna	Botanist	BLM Sensitive Species (Plants) Invasive, Non-Native Plant Species and Noxious Weeds, Threatened or Endangered Species
Pilar Ziegler	Wildlife Biologist	BLM Sensitive Species (Animals), General Wildlife, Migratory Birds, Threatened or Endangered Species

### 6.2 Public Review

The *Paiute Canyon Grazing Allotment Draft Environmental Assessment* (DOI-BLM-NV-C020-2013-0033-EA) was made available for public review from August 13 until September 11, 2014. The BLM received three comment emails or letters. The BLM has summarized the unique substantive comments and provided responses in Appendix D.

### 6.3 Tribes, Individuals, Organizations or Agencies Consulted

The following individuals, organizations, Tribes and agencies were consulted during the preparation of this final EA:

#### *Tribes*

Reno-Sparks Indian Colony  
Pyramid Lake Paiute Tribe

#### *Individuals*

Alan or Lillian Mendes

#### *Organizations*

Resource Concepts Inc.  
Nevada Cattlemen's Association  
Western Watersheds Project

#### *Agencies*

Multiple State agencies through the Nevada Clearinghouse

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## Appendix A - Standard Grazing Permit Terms & Conditions

1. Grazing permit or lease terms and conditions and the fees charged for grazing use are established in accordance with the provisions of the grazing regulations now or hereafter approved by the Secretary of the Interior.
2. They are subject to cancellation, in whole or in part, at any time because of:
  - a. Noncompliance by the permittee/lessee with rules and regulations.
  - b. Loss of control by the permittee/lessee of all or a part of the property upon which it is based.
  - c. A transfer of grazing preference by the permittee/lessee to another party.
  - d. A decrease in the lands administered by the Bureau of Land Management within the allotment(s) described.
  - e. Repeated willful unauthorized grazing use.
  - f. Loss of qualifications to hold a permit or lease.
3. They are subject to the terms and conditions of allotment management plans if such plans have been prepared. Allotment management plans **MUST** be incorporated in permits or leases when completed.
4. Those holding permits or leases **MUST** own or control and be responsible for the management of livestock authorized to graze.
5. The Authorized Officer may require counting and/or additional special marking or tagging of the livestock authorized to graze.
6. The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.
7. Grazing permits or leases are subject to the nondiscrimination clauses set forth in Executive Order 11246 of September 24, 1964, as amended. A copy of this order may be obtained from the Authorized Officer.
8. Livestock grazing use that is different from that authorized by a permit or lease **MUST** be applied for prior to the grazing period and **MUST** be filed with and approved by the Authorized Officer before grazing use can be made.
9. Billing notices are issued which specify fees due. Billing notices, when paid, become a part of the grazing permit or lease. Grazing use cannot be authorized during any period of delinquency in the payment of amounts due, including settlement for unauthorized use.
10. The holder of this authorization must notify the Authorized Officer immediately upon discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (cultural items), stop the activity in the area of the discovery and make a reasonable effort to protect the remains and/or cultural items.
11. Grazing fee payments are due on the date specified on the billing notice and **MUST** be paid in full within 15 days of the due date, except as otherwise provided in the grazing permit or lease. If payment is not made within that time frame, a late fee (the greater of \$25 or 10 percent of the amount owed but not more than \$250) will be assessed.
12. No member of, or Delegate to, Congress or Resident Commissioner, after his/her election of appointment, or either before or after he/she has qualified, and during his/her continuance in office, and no officer, agent, or employee of the Department of the Interior, other than members of Advisory committees appointed in accordance with the Federal Advisory Committee Act (5 U.S.C. App. 1) and Sections 309 of the Federal Land Policy Management Act of 1976 (43 U.S.C. 1701 et seq.) shall be admitted to any share

or part in a permit or lease, or derive any benefit to arise there from; and the provision of Section 3741 Revised Statute (41 U.S.C. 22), 18 U.S.C. Sections 431-433, and 43 CFR Part 7, enter into and form a part of a grazing permit or lease, so far as the same may be applicable.

THIS GRAZING PERMIT:

1. CONVEYS NO RIGHT, TITLE OR INTEREST HELD BY THE UNITED STATES IN ANY LANDS OR RESOURCES AND 2. IS SUBJECT TO (A) MODIFICATION, SUSPENSION OR CANCELLATION AS PROVIDED BY LAND PLANS AND APPLICABLE LAW; (B) REVIEW AND MODIFICATION OF TERMS AND CONDITIONS AS APPROPRIATE; AND (C) THE TAYLOR GRAZING ACT, AS AMENDED, THE FEDERAL LAND POLICY AND MANAGEMENT ACT, AS AMENDED, THE PUBLIC RANGELANDS IMPROVEMENT ACT, AND REGULATIONS NOW OR HEREAFTER PROMULGATED THEREUNDER BY THE SECRETARY OF THE INTERIOR.

## **Appendix B – Current and Proposed Grazing Permit Terms & Conditions**

- Grazing management shall be in accordance with the 2015 Allotment Management Plan and subsequent amendments;
- Grazing management shall be authorized in a manner that will make progress towards meeting the standards as set forth by the Sierra Front - Northwestern Great Basin RAC, 1997;
- It is your responsibility to maintain all assigned range improvements in good working order and an aesthetic state;
- Salt and/or supplements will be placed at least ¼ mile from live waters (springs/streams), and outside of associated riparian areas, permanent livestock water facilities, wet or dry meadows and aspen stands, salt should not be placed in known historic properties;
- We encourage your participation in Rangeland Monitoring. Your certified actual grazing use report is required to be submitted within 15 day from the end of the grazing period year;
- This permit or lease may be canceled, suspended, or modified, in whole or in part to meet the requirements of applicable laws and regulations; and
- By accepting this permit, you agree to provide administrative access across your controlled lands to BLM employees and contractors when needed for the orderly management and protection of the public lands.

## Appendix C

BLM Sensitive Species and Migratory Birds that may be present because they are associated with the key habitat types present on the Allotment.

Common Name	Scientific Name	BLM Sensitive	
		Species	BLM Migratory Bird
Big brown bat	<i>Eptesicus fuscus</i>	Y	-
Bighorn sheep	<i>Ovis Canadensis</i>	Y	-
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	Y	-
Brewer's sparrow	<i>Spizella breweri</i>	Y	Y
Burrowing owl	<i>Athene cunicularia</i>	Y	N
California myotis	<i>Myotis californicus</i>	Y	-
Dark kangaroo mouse	<i>Microdipodops megacephalus</i>	Y	-
Ferruginous hawk	<i>Buteo regalis</i>	Y	Y
Fringed myotis	<i>Myotis thysanodes</i>	Y	-
Golden eagle	<i>Aquila chrysaetos</i>	Y	Y
Greater sage-grouse	<i>Centrocercus urophasianus</i>	Y	N
Green-tailed towhee	<i>Pipilo chlorurus</i>	N	Y
Hoary bat	<i>Lasiurus cinereus</i>	Y	-
Loggerhead shrike	<i>Lanius ludovicianus</i>	Y	Y
Long-eared myotis	<i>Myotis evotis</i>	Y	-
Long-legged myotis	<i>Myotis volans</i>	Y	-
Mourning dove	<i>Zenaida macroura</i>	N	Y
Pale kangaroo mouse	<i>Microdipodops pallidus</i>	Y	-
Pallid bat	<i>Antrozous pallidus</i>	Y	-
Sage sparrow	<i>Amphispiza belli</i>	N	Y
Sage thrasher	<i>Oreoscoptes montanus</i>	Y	Y
Spotted bat	<i>Euderma maculatum</i>	Y	-
Swainson's hawk	<i>Buteo swainsoni</i>	Y	N
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Y	-
Western pipistrelle bat	<i>Pipistrellus hesperus</i>	Y	-
Western small-footed myotis	<i>Myotis ciliolabrum</i>	Y	-
Yuma myotis	<i>Myotis yumanensis</i>	Y	-

## **Appendix D – Comments on the Draft EA and Responses to Comments**

The BLM received three comment letters to consider on the draft EA. All comments were reviewed and categorized. Although not required for an EA by regulation, an agency may respond to *substantive* and *timely* comments received.

Substantive comments:

1. question with reasonable basis, the accuracy of information in the EA;
2. question with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis;
3. present new information relevant to the analysis;
4. present reasonable alternatives than those analyzed in the EA; and/or
5. cause changes or revisions in one or more of the alternatives.

No response is necessary for non-substantive comments (BLM 2008). Substantive and unique comments are summarized below.

#	Comment	BLM Response
1.	The Nevada Department of Wildlife (NDOW) commented that the BLM should manage wild horses within the appropriate management level.	Outside the scope of this project.
2.	NDOW commented –  Within the Standards Determination Document (SDD), Cove Springs 1 & 2 and the “Lotic between Cove Spring and Simple Spring” are rated in Proper Functioning Condition. However, the notes describe these areas to have “some head cutting” which appears to be an issue. Are these head cuts active or stable? This information is pertinent as it could be the difference between PFC or Functioning at Risk.	This head cutting is subject to ongoing monitoring by the BLM Hydrology Program to determine stability.
3.	NDOW commented – “We generally support your approach to making improvements to degraded spring areas as stated in the Grazing Allotment Evaluation Tule Pasture section, but offer the following recommendations:...”	See responses to 3.a.-c.
3.a.	The Allotment Evaluation States, “Conduct detailed spring assessments to evaluate the contribution of livestock grazing to the deteriorated condition of the springs.” The SDD states that livestock grazing was a contributing factor to not meeting the standards, so it appears that further evaluation may not be necessary. Further clarification would be helpful.	The AMP changes livestock management (see below) and it is this new management that needs to be evaluated. Objective 1: Evaluate the impact of the new season of use which removes grazing during the growing season on the riparian areas Objective 2: Evaluate the impact of the new reduction in AUMs from 4,200 to 3,000 on the riparian areas Objective 3: Evaluate the resting of one high elevation pasture every four years on the riparian areas Objective 4: If these evaluations show that there are reaches where livestock use is a limiting factor to reaching potential proper functioning condition protect those areas through physical barriers and herding and evaluate changes to the grazing rotation.
3.b.	The Allotment Evaluation States, “Move the troughs on enclosed springs so that water draining from the trough flows back into the spring enclosure. We agree but also hope you consider improving the design (i.e. perforated spring box, float, etc.) so that the riparian area is maintained (i.e. increased water flows) to the maximum extent possible.	Range improvements are subject to valid and existing rights and the BLM does not have water rights on most springs. The BLM Hydrology Program works with water rights holders on maintenance of riparian areas. It is BLMs policy that projects affecting water be designed to maintain the associated riparian area and assure attainment of standards.

3.c.	We hope that this evaluation and assessment process occurs relatively quickly as well as the range improvements (e.g. headcut repair, fencing) and/or livestock management (e.g. herding). We encourage the BLM to analyze these improvements in this document so that they can be implemented in a timely (e.g. without further NEPA which can take years) manner. Furthermore, we hope that BLM can commit to a timeline in the EA for making such improvements.	Implementation is based on funding which varies from year to year, so a timeline is not possible.
4.	We support following adaptive management principals and allowing flexibility to adjust as necessary to achieve rangeland health goals and objectives. As such, we recommend incorporating temporary nonrenewable (TNR) use, into the grazing permit given that the grazing operator can and will follow the prescription and subject to meeting all of the following criteria:	Temporary Nonrenewable Use (TNR) above the permitted use of 4,800 AUMs analyzed in the “No Action” alternative was not considered in the analysis of the ten-year grazing permit renewal. If BLM receives an application for TNR use it would consider the application . The process to consider TNR use involves, data collection regarding forage availability, consultation, the CCC process, appropriate NEPA analysis and the issuance of a decision. TNR permits are stand-alone one time permits. The current proposal for the ten year grazing permit renewal is to reduce permitted AUMs by 1,800 AUMs to achieve land health standards and the recent annually authorized livestock use has been less than permitted use due to drought conditions.
4.a.	TNR prescription would conform with and meet land Health Standards;	See response to 4.
4.b.	Forage conditions, such as sufficient forage, good plant vigor, support the action;	See response to 4.
4.c.	Same class of livestock (cattle, sheep, horses), except with respect to fuel projects, if livestock class does not conflict with other resources	See response to 4.
4.d.	T&E habitat-TNR use would not occur within Threatened & Endangered (T&E) habitat.	See response to 4.
4.e.	Cheatgrass treatments or other annual invasive species	See response to 4.
4.f.	Avoids sensitive wildlife habitat through specific location or timing restrictions.	See response to 4.
4.g.	No TNR within HMAs that are above high AML.	See response to 4.
4.h.	Minimal impact on native plants (e.g., dormant season use, weren’t grazed at the same time the year before),	See response to 4.
4.i.	Treatment areas have infrastructure in place to manage livestock for concentrated use of cheatgrass and to prevent damage to native plants outside of intensive use areas.	See response to 4.

4.j.	Does not lead to season-long critical growing season use of native plants or hot season use of riparian areas; established grazing systems would be followed, except for the cheatgrass treatments.	See response to 4.
5.	Active compliance, oversight, and monitoring to ensure plan is being adhered to and that the allotment is trending in a positive direction.	See response to 4.
6.	We support objectives 1 and 2 under goal 1 within the Allotment Management Plan (AMP). We also encourage utilization objectives outside of the growing season (e.g. <50% on DPG).	This language is designed to enable dormant season grazing of cheatgrass at a time when higher utilization levels would not be detrimental to perennials. Any grazing at these higher levels would be part of a designed and monitored project for vegetation improvement.
7.	Under Goal 3 Objective 3 in the AMP we recommend developing riparian area objectives (e.g. PFC, 4-6” stubble height) or better describing what the riparian area desired state is? We anticipate that grazing objectives may be met 1 in 4 years (i.e. during the rest year) given the proposed grazing modification. As such, we recommend using herding and/or utilizing other management techniques (e.g. fencing) to ensure riparian area objectives are being met every year. We encourage creating another objective to measure and adjust livestock grazing appropriately to address the heavy browsing on bitterbrush as this area is important mule deer habitat.	These can be established by the BLM once baseline monitoring is in place. The ability to do baseline monitoring is constrained by staffing.
8.	Within the AMP you state, “current levels of perennial grass production support a total of 1,900 AUMs”. Is this assuming a 50% utilization level? That is, did you measure 3,800 AUMs in the allotment, but since the objective is to graze 50 % you are only allowing up to 1,900 to be utilized? Clarification within the document is recommended.	See Appendix E of the final EA for the stocking rate calculations.
9.	A. and L. Mendes stated that the livestock carrying capacity for the Allotment is at least 4,599 AUMs.	See Appendix E of the final EA for the stocking rate calculations.
9.a.	A. and L. Mendes stated -  “First, the referenced Pauite Canyon Grazing Allotment Evaluation (200-2013) does not conclude that the current carrying capacity for the allotment is 1,900 AUMs. In fact, the Evaluation never calculates the current carrying capacity for the allotment.”	See Appendix E of the final EA for the stocking rate calculations.

9.b.	<p>A. and L. Mendes stated –</p> <p>“Second, the 2013 production monitoring data is unreliable information for the purposes of determining the carrying capacity for the Paiute Canyon Allotment. Such one point in time inventory methods have been repudiated as inadequate information sources for carrying capacity determinations, in part because they are highly influenced by prevailing weather patterns in the year they are conducted.”</p>	<p>See Appendix E of the final EA for the stocking rate calculations. Actual use and utilization were used to determine the stocking rate.</p>
9.c.	<p>A. and L. Mendes stated –</p> <p>“Third, demonstrably more reliable monitoring of actual-use and utilization levels over time within the Paiute Canyon Allotment demonstrates that between 2000 and 2013 the livestock carrying capacity for the Paiute Canyon Allotment has averaged at least 4,599 AUMs</p>	<p>See Appendix E of the final EA for the stocking rate calculations.</p>
10.	<p>A. and L. Mendes stated that the BLM did not clearly define the terms or they are not consistently used between the Evaluation and draft EA: “early in the growing season,” “critical growing season” or “growing season.”</p>	<p>See Appendix E of the final EA for the BLM explanation on the use of the term “growing season.”</p>
11.	<p>A. and L. Mendes stated that the BLM erred when it concluded in the draft EA that the ecological conditions “have not improved.” The BLM failed to state what the ecological condition the allotment is in.</p>	<p>This statement is not found in the draft EA.</p>

11.a.	<p>A. and L. Mendes stated –</p> <p>“Page 73 of the Evaluation addresses the Allotment Objectives specific for the Pauite Canyon Allotment, starting with the conclusion that ecological conditions “have not improved,” implying that Allotment Objectives regarding ecological condition have not been met. Such conclusion is erroneous because said objectives first seek to achieve “fair or better ecological condition” and the draft EA and its supporting documents fail to disclose or document what the ecological condition is for any area within the Pauite Canyon Allotment. Thus, it is not known if the aspect of the Allotment Objective to achieve “fair or better ecological condition” is being met across the allotment as a whole, or within specific portions of the allotment.”</p>	<p>Appendix A_Allotment Objectives lists the “Objectives in Lahontan Rangeland Program Summary Update, December 1989” which was incorporated into the CRMP. The objective states:  “Improve ecological condition in 20 years by one class from early seral to mid seral on 1,654 acres, from mid seral to late seral on 7,434 acres, from late seral to PNC [Potential Natural Community] on 476 acres.”</p> <p>The Lahontan Rangeland Program Summary Update Objectives were quantified in the 1989 AMP Objectives, and also listed in Appendix A_Allotment Objectives, as:  “Maintain fair or better ecological condition in all key areas.”</p> <p>The BLM’s key area long term monitoring data as shown in the pasture by pasture analysis in the Allotment Evaluation (pages 24, 34, 44, 50, 57, 62) shows the trend for most key areas of the Allotment is “static,” and there has not been an improvement as called for in the CRMP. The BLM’s production data as shown in the pasture by pasture analysis in the Allotment Evaluation (pages 23, 33, 44, 49, 57, 62) show a small percentage of deep rooted perennial bunch grasses compared to what is expected for the site.</p>
11.b.	<p>The draft EA and its supporting documents use unreliable frequency and production data to draw conclusions regarding such trend. The 1996 Interagency Technical Reference entitled <i>Sampling Vegetation Attributes</i> (1996 TR) describes the frequency method as being “useful to detect changes in a plant community over time” but cautions that there are serious limitations associated within the method (see 1996 TR, pages 23-25). Some of the most serious limitations of the frequency method are summarized below.</p>	<p>The BLM acknowledges that every methodology has its strengths and weaknesses. A. and L. Mendes quote only the limitations from the “Advantages and Limitations” (page 24) of the Frequency method in the 1996 TR.</p>

11.b.i.	<p>A. and L. Mendes stated –</p> <p>“First, while the method has been used to determine changes in condition, “only limited work has been done in most communities” making the “interpretation difficult” (see 1996 TR, page 23).</p>	<p>The complete text for which this quote was extracted is: “Frequency has been used to determine rangeland condition but only limited work has been done in most communities. This makes interpretation difficult. The literature has discussed the relationship between density and frequency but this relationship is only consistent with randomly distributed plants (Greig-Smith 1983).”</p> <p>The BLM uses frequency to detect changes in the plan community over time. That trend, along with production compared to expected, utilization, actual use and Rangeland Health Assessments, is the preponderance of evidence the BLM uses to determine if there has been a change in the ecological condition of the Allotment.</p>
11.b.ii.	<p>A. and L. Mendes stated –</p> <p>“Second, the method “is highly influenced by the size and shape of the quadrats” and “the frequency of the species must generally be at least 20% and no greater than 80%” in order to detect change over time (see 1996 TR, page 24). The deep rooted grass species observed along the frequency transects within the Pauite Canyon Allotment predominately fell below the 20% frequency level within the quadrat sizes that were used, making changes in frequency reported for these species suspect.</p>	<p>The complete text for which this quote was extracted is: “Frequency is highly influenced by the size and shape of the quadrats used. Quadrats or nest quadrats are the most common measurement used; however, point sampling and step point methods have also been used to estimate frequency. The size and shape of a quadrat needed to adequately determine frequency depends on the distribution, number, and size of the plant species.”</p> <p>Selection of quadrat frame size for multiple species and limited staff is addressed by Smith and Ruyle as follows:  “Frequency values between 10% and 90% are useful but data outside this range should be used only to indicate species presence. Ideally, each plant species should be sampled with a quadrat size best suited for it. Obviously this is impractical. As a compromise, a quadrat size is selected which will adequately sample as many species as possible” (Smith E.L. and G.B. Ruyle. 1991. <i>Some Methods for Monitoring Rangelands and Other Natural Area Vegetation</i>. Considerations when monitoring rangeland vegetation. In G.B. Ruyle. (ed). University of Arizona, College of Agriculture, Extension Report 9043, page 8.)</p> <p>When the long term monitoring Frequency Transects were established in the early 1990’s by the BLM, multiple species needed to be monitored in a cost effective manner. The 30” or 40” frame sizes used indicate trends in frequency for the more abundant species while tracking the presence of the less abundant species.</p>

11.b.iii.A	<p>A. and L. Mendes stated –</p> <p>“Third, while “change can be detected with frequency, the extent to which the vegetation community has changed cannot...”</p>	<p>Frequency was not used to determine the extent of change, it was used to establish whether a change in vegetation has occurred and if so, in what direction.</p>
11.b.iii.B	<p>...Interpreting “changes in frequency is difficult” because the method “cannot tell which of three parameters has changed: canopy cover, density, or pattern of distribution” (see 1996 TR, page 24). Thus while frequency data may show that the vegetal community has changed in some way, frequency data alone cannot show the degree of the change and cannot show which parameter has changed within the plant community. Therefore, frequency data cannot directly show whether a change in ecological condition has occurred at a site over time.</p>	<p>The complete text from which this quote was extracted is “Interpretation of changes in frequency is difficult because of the inability to determine the vegetation attribute that changed. Frequency cannot tell which of three parameters has changed: canopy cover, density, or pattern of distribution.” The BLM has not attempted to determine whether canopy cover, density, or pattern of distribution have changed. The BLM has used Frequency to establish whether a change in vegetation had occurred and if so, in what direction. That trend, along with production compared to expected, utilization, actual use and Rangeland Health Assessments, is the preponderance of evidence the BLM uses to determine if there has been a change in the ecological condition of the Allotment.</p>
11.b.iii.C	<p>...Finally, “because frequency data are so dependent on quadrat size and sensitive to non-random dispersion patterns that prevail on rangelands, managers are fooling themselves if they calculate percentage composition from frequency data and try to compare ... the same site over time in terms of total species composition” (see 1996 TR, pages 24-25). Overall, the frequency method is unreliable for assessing the degree of change in species composition which is necessary to determine trend in ecological condition at a site over time.</p>	<p>Frequency was not used to calculate percentage composition from frequency data and try to compare the same site over time in terms of total species composition. It was used to establish whether a change in vegetation had occurred and if so, in what direction.</p>

11.c.iii.D	<p>A. and L. Mendes stated –</p> <p>The draft EA and its supporting documents also rely upon the 2013 production monitoring within the Paiute Canyon Allotment to conclude that the lack of abundance of key perennial grass species observed during the production studies bolsters the conclusion that trend in ecological status is downward or has not improved. However, the production data is unreliable for the reasons set forth above in the section under the "Livestock Carrying Capacity" heading. Additionally, since the 2013 production monitoring was a one point in time inventory, it provides no information regarding trend in production over time because no matter what production level was measured for any species in 2013, it is unknown if the production for said species was greater or lesser at any time in the past. Thus, the 2013 production data is incapable of providing any information regarding trend from a prior time with respect to production or, by extension, ecological condition.</p>	<p>Production data was used to estimate the amount of forage currently available from deep rooted perennial bunchgrasses. It was also compared against what would be expected for the site based on the NRCS ecological site description. Production data was not used by the BLM to demonstrate trend.</p>
12.	<p>A. and L. Mendes commented that the primary factors preventing or inhibiting the recovery of deep rooted perennial bunchgrasses are a lack of seed source and competition by other plant species, including annual grasses and forbs, shrubs, and juniper trees rather than grazing.</p>	<p>The Frequency monitoring data demonstrated that a seed source remains available at every long term monitoring location for multiple species of deep rooted perennial bunchgrasses as well as at 12 of the production monitoring sites. The reductions in stocking rate attributable to growing season rest are designed to allow plants in these locations to flower, seed to ripen and disseminate. Since livestock use is a disturbance factor in the plant reproductive cycle, these reductions create the conditions for restoration to be effective as funds become available. The draft EA includes a description of polygons designated for juniper cutting designed to reduce fuel loads and reduce competition for site resources between juniper and deep rooted perennial bunchgrasses.</p>
13.	<p>A. and L. Mendes commented that the BLM erred when used the wrong assessment protocol and/or checklist for most of the riparian systems.</p>	<p>The BLM has revised Section 3.4.3 of the final EA.</p>

14.	A. and L. Mendes commented that the RLHA ratings were not based on a “preponderance of the evidence” approach for the ratings listed below.	<p>The “preponderance of the evidence” approach is defined in Technical Reference 1734-6 Interpreting Indicators of Rangeland Health, Version 4, 2005 on pages 41 and 42 as follows:</p> <p>“A “preponderance of evidence” approach is used to select the appropriate departure category for each attribute. This decision is based, in part, on where the majority of the indicators for each attribute fall under the five categories. For example, if four of the soil/site stability indicators are in the “moderate” and six are in the “slight to moderate” departure from the ecological site description/ERA categories, the soil/site stability attribute departure would be rated as “slight to moderate” assuming that the evaluator(s) interpretation of other information and local ecological knowledge supported this rating. However, if one of the four indicators in the “moderate” category is particularly important for the site (e.g. bare ground), a rating of “moderate” can be supported.”</p> <p>Below are the reasons why each of the ratings listed departed from what would be obtained by averaging the component indicators.</p>
14.a.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Soil/Stability Attribute for RLHA #13 determination as “Slight to Moderate.” In their opinion the rating should have been “None to Slight.”	Within this Attribute, Indicator 8. Soil Surface Resistance to Erosion, was rated “Moderate to Extreme.” Soil stability is 2.5, but the Reference Sheet for the site showed a normal value as 4-6 indicating that the site is very unstable.
14.b.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Soil/Stability Attribute for RLHA #16 determination as “Moderate to Extreme.” In their opinion the rating should have been “Slight to Moderate.”	Within this Attribute, Indicator 8. Soil Surface Resistance to Erosion, was rated “Extreme to Total.” Soil Stability is 1, but the Reference Sheet for the site showed a normal value as 3-6 indicating that the site is very unstable.
14.c.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Hydrologic Function Attribute for RLHA #13 determination as “Moderate.” In their opinion the rating should have been “Slight to Moderate.”	<p>In addition to the erosion risk described in 13.a. above which is a component of Hydrologic Function, the ability of water to infiltrate on this site was hindered as indicated by the moderate departure in Indicator 10, Plant community.</p> <p>Composition and distribution relative to infiltration and runoff and Indicator 11, Litter Amount. Cheatgrass and rabbitbrush are dominating the site and there is very little low sage or perennial bunchgrasses remaining which, according to the Reference Sheet, should dominate the site. There is also a higher amount of litter than expected according to the reference sheet, probably due to the abundance of cheatgrass.</p>

14.d.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Hydrologic Function Attribute for RLHA #16 determination as “Moderate.” In their opinion the rating should have been “Slight to Moderate.”	Within this Attribute, Indicator 8. Soil Surface Resistance to Erosion was rated “Extreme to Total.” Soil Stability is 1, but the Reference Sheet for the site showed a normal value as 3-6.
14.e.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Biotic Integrity Attribute for RLHA #2 determination as “Moderate.” In their opinion the rating should have been “Slight to Moderate.”	Indicators 12. Functional/structural groups and 16. Invasive plants were both “Moderate to Extreme” departures from the Reference Sheet compromising the site’s ability to support ecological processes within the normal range of variability expected for the site, to resist a loss in the capacity to support these processes, and to recover this capacity when losses do occur.
14.f.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Biotic Integrity Attribute for RLHA #3 determination as “Slight to Moderate.” In their opinion the rating should have been “None to Slight.”	Indicator 12. Functional/structural groups was in “Slight to Moderate” departure from the Reference Sheet compromising the site’s ability to support ecological processes within the normal range of variability expected for the site, to resist a loss in the capacity to support these processes, and to recover this capacity when losses do occur. Indicator 13. Plant Mortality/ Decadence was higher than expected for the site when compared to the reference sheet indicating a decreased ability for the existing vegetation to support ecological processes at the site.
14.g	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Biotic Integrity Attribute for RLHA #4 determination as “Slight to Moderate.” In their opinion the rating should have been “None to Slight.”	Indicators 12. Functional/structural groups, 16. Invasive plants and 17.Reproductive Capability of Perennial Plants were all “Slight to Moderate” departures from the Reference Sheet compromising the site’s ability to support ecological processes within the normal range of variability expected for the site, to resist a loss in the capacity to support these processes, and to recover this capacity when losses do occur.
14.h.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Biotic Integrity Attribute for RLHA #7 determination as “Slight to Moderate.” In their opinion the rating should have been “None to Slight.”	Indicators 8. Soil Surface Resistance to Erosion 12. Functional/structural groups and 14. Litter Amount were all “Slight to Moderate” departures from the Reference Sheet compromising the site’s ability to support ecological processes within the normal range of variability expected for the site, to resist a loss in the capacity to support these processes, and to recover this capacity when losses do occur.
14.i.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Biotic Integrity Attribute for RLHA #13 determination as “Moderate to Extreme.” In their opinion the rating should have been “Slight to Moderate.”	Within this Attribute, Indicator 8. Soil Surface Resistance to Erosion, was rated as a “Moderate to Extreme” departure from the Reference Sheet. Soil stability is 2.5, but the Reference Sheet for the site showed a normal value as 4-6. 12. In addition Indicator 12. Functional/structural groups and 14. Litter Amount both showed “Moderate to Extreme” departures from the Reference Sheet. Cheatgrass and rabbitbrush are dominating the site and there is very little low sage or perennial bunchgrasses remaining which, according to the Reference Sheet, should dominate the site. There is also a higher amount of litter than expected according to the reference sheet, probably due to the abundance of cheatgrass.

14.j.	A. and L. Mendes commented that the BLM erred in the Evaluation/Appendix G for the Biotic Integrity Attribute for RLHA #24 determination as “Moderate to Extreme.” In their opinion the rating should have been “Slight to Moderate.”	Three Indicators 8. Soil Surface Resistance to Erosion, 12. Functional/structural groups and 14. Litter Amount departed Moderately from the Reference Sheet for the site and one, 16. Invasive plants departure was “Moderate to Extreme.” Cheatgrass is now dominant when it isn't even expected for the site according to the Reference Sheet. The reproductive capability of perennial plants is slightly to moderately departed from the Reference Sheet, the amount of litter is high, and soil stability is low.
15.	A. and L. Mendes commented that the BLM failed to fully evaluate the Permittee Proposed Alternative described in Section 2.4. In the Permittee Proposed Alternative, there would be voluntary non-use during April and May for two years, and reduction in the number of cattle to 300.	<p>The Permittee Proposed Alternative to reduce the number of cattle to 300, is identical to the Proposed Action. The Permittee Proposed Alternative included the elimination of grazing in April and May for two years. In the Proposed Action the BLM analyzed a 10-month grazing season and applied it to the full duration of the permit, not just the first two years as the permittee requested.</p> <p>The BLM analyzed the range improvements suggested by the permittee and included them in the Proposed Action.</p>
16.	A. and L. Mendes commented that the BLM failed to analyze a range of reasonable alternatives including the continuation of the livestock grazing management authorized under the current term grazing permit, while implementing the additional range improvements and management actions including the weeds and fuels treatments, and Webber’s ivesia fencing.	See response to comment #15. The BLM would note that the “additional management actions” were proposed by the BLM and not the permittee. A. and L. Mendes did not specifically comment on these actions other than generally characterizing that they should have been included in the Permittee Proposed Alternative, which should have been fully evaluated.
17.	A. and L. Mendes commented that the BLM failed to provide the maps listed in on page vi of the draft EA.	<p>All maps were made available for public review at the same time the draft EA was available. The BLM would note that in order to limit the file size of the draft EA, all maps were loaded onto a separate web page which was displayed on the home page navigation bar.</p> <p>The navigation bar included: “Home, Documents, Contact Information, How to get Involved, Meetings, <b>Maps</b>, Data, Links and FAQs.” The commenters did not contact the BLM during the 30-day public review period that they were unable to locate the maps.</p>
18.	The U.S. Fish and Wildlife Service requested the BLM consider revisions to the Webber’s ivesia enclosure fencing due to their concerns that one route would be cut-off and recreationists would likely cut through the fencing.	The BLM has revised the perimeter of the Webber’s ivesia fencing and revised Figure 9 reflecting this change.

## Appendix E – Supplemental Information Based on Comments to the Draft EA

### Initial Drought Stocking Rate

Stocking Rate Assumptions:

- utilization target will initially be 35% during the drought (and may be increased to 40% as allowed in the AMP once the drought is over);
- one of the four high elevation pastures (Incandescent Rocks, Tule, Fall, Dogskin) will be rested each year; and
- there will be 9 months of use rather than 12 months in order support deep rooted perennial bunchgrass recruitment.

Stocking Rate Calculations =

- Avg. Actual Use/Avg. Observed % Utilization X 35% Desired Utilization;
- Minus AUMs no longer available due to rest of one of four high elevation pastures per year; and
- Minus AUMs no longer available due to three months of growing season rest each year. (Calculated numbers are rounded up for the EA and Grazing Decision)

Pasture Name	Average Actual Use (AUMs)	Average Observed % Utilization	Calculated Carrying Capacity for 35% Drought Utilization (AUMs)
SHOVEL SPRINGS	613	0.44	487
WARM SPRINGS/ HUNGRY VALLEY	1,072	0.37	1,014
INCANDESCENT ROCKS	328	0.35	328
TULE	513	0.40	449
FALL	303	0.32	331
DOGSKIN	218	0.46	166
Total Potential Forage at 35% Utilization during Drought			2,774
Reduction for High Elevation Pasture Rest			-204
Reduction for three Months Growing Season Rest			-692
# AUMs Remaining			1,879
# Cattle for 9 Months			209

- Rounding the AUMs and number of cattle results in 1,900 AUMs and 210 head of cattle as displayed in the EA and Grazing Decision.

**Proposed Permitted Stocking Rate**

Stocking Rate Assumptions:

- a) deep rooted perennial bunchgrass recruitment improves so utilization target will be 50%;
- b) one of the four high elevation pastures (Incandescent Rocks, Tule, Fall, Dogskin) will be rested each year; and
- c) deep rooted perennial bunchgrass recruitment improves so there will be 10 months of use rather than 9.

Stocking Rate Calculations =

- Avg. Actual Use/Avg. Observed % Utilization X 50% Desired Utilization;
- Minus AUMs no longer available due to rest of one of four high elevation pastures per year; and
- Minus AUMs no longer available due to two months of growing season rest each year. (Calculated numbers are rounded up for the EA and Grazing Decision)

<b>Pasture Name</b>	<b>Average Actual Use (AUMs)</b>	<b>Average Observed % Utilization</b>	<b>Calculated Carrying Capacity for 50% Utilization (AUMs)</b>
SHOVEL SPRINGS	613	0.44	696
WARM SPRINGS/ HUNGRY VALLEY	1,072	0.37	1448
INCANDESCENT ROCKS	328	0.35	469
TULE	513	0.40	641
FALL	303	0.32	473
DOGSKIN	218	0.46	237
Total Potential Forage at 48% Utilization			3963
Reduction for High Elevation Pasture Rest			-291
Reduction for two Months Growing Season Rest			-662
# AUMs Remaining			3010
# Cattle for 10 Months			301

- Rounding the AUMs and number of cattle results in 3,000 AUMs and 300 head of cattle as displayed in the EA and Grazing Decision

## **Growing Season Definition**

Two different seasons are loosely applied to the annual cycle of vegetative plants, the “growing season” and the “dormant season.” Perennial bunchgrasses grow both below and above ground throughout the year. Typically the growing season for purposes of grazing refers to the aboveground growing season that starts when the first vegetative shoots are seen aboveground and lasts until all the above ground vegetation is no longer photosynthesizing and is dry.

The aboveground growing season in the Sierra Front Field Office of the Carson City District, north of Reno for deep-rooted perennial bunch grasses typically begins in March when vegetative growth starts and ends in August when aboveground vegetation is no longer photosynthesizing and is dry (BLM 1978). During some years when there is atypical fall rain, there may be a regrowth period around October. The aboveground growing season varies depending on the temperature and the timing of precipitation.

During the six months aboveground growing season from the beginning of March to the end of August, the months of April, May and June are the time when vegetative growth is completed and most reproductive growth occurs. March to August is defined as the “growing season” and September to February is defined as the “dormant season”.

## **Reference**

Bureau of Land Management (BLM). 1978. *Nevada Rangeland Phenology*. Prepared by NRC Inc., Reno/Sparks, Nevada.