

# **FROST CREEK ALLOTMENT GRAZING PERMIT RENEWAL AND ALLOTMENT MANAGEMENT PLAN (AMP)**

## **ENVIRONMENTAL ASSESSMENT**



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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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# Frost Creek Allotment Grazing Permit Renewal and AMP

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## Table of Contents

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	PURPOSE AND NEED .....	2
1.2	RELATIONSHIP TO LAWS, POLICIES AND LAND USE PLANS.....	3
1.2.2	BLM Land Use Plan Conformance.....	4
1.2.3	Consistency with Non-BLM Authorities .....	4
1.2.4	Guidelines to Manage Sage Grouse Populations and Their Habitat.....	6
<b>2</b>	<b>ALTERNATIVES.....</b>	<b>6</b>
2.1	Mandatory Terms and Conditions Applicable to All Alternatives .....	6
2.1.1	Proposed Management Objectives Applicable to Alternatives 2 and 3 .....	7
2.2	Alternative 1 - 1994 FMUD Grazing System (No Action) .....	7
2.3	Alternative 2 - Proposed Action.....	8
2.4	Alternative 3 - Temporary Non-Renewable Use (TNR) .....	10
2.5	Range Improvement Options Applicable to Alternatives 2 and 3.....	11
2.5.1	Water Pipeline Extension .....	11
2.5.2	Fuels Reduction and Habitat Enhancement Treatment (Native Pasture).....	11
2.5.2.1	Mechanical Treatments .....	12
2.5.2.2	Herbicide Use .....	12
2.5.2.3	Seeding Treatment.....	13
2.5.3	Mowing and Interseeding Crested Wheatgrass Pastures .....	14
2.5.3.1	Herbicide Application.....	15
2.5.3.2	Seeding Treatment.....	15
2.5.4	Livestock Grazing Closures and Monitoring .....	17
2.5.5	Proposed Special Design Features.....	17
2.6.	Objectives for Establishment of Seeded Species .....	22
2.7	Environmental Design and Resource Protection .....	23
2.8	Alternatives Eliminated from Further Analysis.....	24
<b>3.</b>	<b>AFFECTED ENVIRONMENT/EFFECTS OF ALTERNATIVES .....</b>	<b>24</b>
3.1	Scope of Analysis.....	24
3.1.1	Related Past, Present and Reasonably Foreseeable Future Actions (PPRFFA's).....	25
3.1.2	Geographic Scope .....	26
3.2	EFFECTS OF THE ALTERNATIVES .....	27
3.2.1	Livestock Grazing, Vegetation, and Invasive Non-Native Species.....	27
3.2.2	Air Quality .....	36
3.2.3	Water Resources .....	37
3.2.4	Soils .....	39
3.2.5	Wetlands and Riparian Areas.....	42
3.2.6	Wildlife Including Special Status Species and Migratory Birds.....	43
3.2.7	Visual Resources .....	50
3.2.8	Cultural Resources .....	51
3.2.9	Health and Safety .....	53
3.3	MITIGATION AND MONITORING .....	54
<b>4.</b>	<b>CONSULTATION AND COORDINATION.....</b>	<b>54</b>
4.1	PERSONS, GROUPS OR AGENCIES CONSULTED .....	54
4.2	Preparers .....	55
4.3	Distribution .....	55

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## 1. INTRODUCTION

The Bureau of Land Management (BLM), Elko District, Tuscarora Field Office is proposing to renew two grazing permits for the Frost Creek Allotment with changes to terms and conditions for the management of livestock grazing. The Frost Creek Allotment is approximately 40 miles south of Elko, Nevada and about five miles south of Jiggs, via access from State Route (SR) 228 along Elko County-maintained road No.719 that intersects the allotment (See map 1, Appendix A).

This Environmental Assessment (EA) has been prepared for compliance with the National Environmental Policy Act of 1969 (NEPA). It incorporates by reference analyses from BLM's June 2009 Northeastern Great Basin Standards and Guidelines Assessment which is available upon request to the Tuscarora Field Office and will be posted on our website with this EA at: [http://www.blm.gov/nv/st/en/fo/elko\\_field\\_office/blm\\_information/nepa.html](http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_information/nepa.html)

### **Background**

The Frost Creek Allotment has two grazing permit holders. The allotment encompasses 10,613 acres of public land, and 544 acres of private land. Approximately 79% of the allotment was type-converted from big sagebrush rangelands to crested wheatgrass seedings in the 1960's. Of the seven pastures that comprise the allotment, the Frost Canyon, Brown, Corral Canyon, North Zaga and South Zaga, and Riley are primarily crested wheatgrass seedings. Riley Pasture supports two intermittent drainages, Frost and Pearl creek. The Jiggs Flat pasture consists of native plant species.

Multiple grazing planning documents have been prepared for the Frost Creek Allotment in order to improve grazing management. These documents have all been distributed to the public and were available for review and comment. For a chronological history and a detailed description of these documents please see section 2.0 (Background) of the June 2009 Standards and Guidelines Assessment.

### ***1987 Elko Resource Management Plan and Rangeland Program Summary***

Management actions from the 1987 land use plan included initially licensing livestock use at the three to five year (1978-1983) average licensed use, and to increase the availability of livestock animal unit months (AUMs) four percent over active preference and 32 percent over the three to five year average licensed use level, if adequately supported by monitoring (1987 Elko Resource Management Plan, Record of Decision, page 20). Based on an existing plan for the Frost Creek Allotment, the 1987 Elko Resource Management Plan, Rangeland Program Summary, pages 20-21, identified allotment-specific stocking levels and objectives.

- The initial livestock stocking level for the Frost Creek Allotment was 1,976 AUMs.
- The long-term management objectives included providing forage to sustain 2,247 AUMs for livestock, 41 AUMs to support reasonable numbers of mule deer, to maintain or improve to at least good condition mule deer crucial habitat, and to manage rangeland to protect or enhance crucial sage grouse strutting or nesting habitat.
- Improve ecological status from early to mid on 35 acres.
- Consider increasing existing forage by artificial methods whenever appropriate and feasible.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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- Maintain or enhance the current livestock forage values on non-native range.
- In the short-term, maintain or enhance native vegetation with utilization levels not to exceed 50 percent on the key species.
- Maintain and improve meadow and riparian areas for mule deer and sage grouse. Utilization levels will not exceed 50 percent on meadow and riparian areas.

## 1.1 PURPOSE AND NEED

The proposed action is to fully process the renewal of the term grazing permits for two grazing permits (authorization #2701605 and #2703116) on the Frost Creek Allotment in accordance with all applicable laws, regulations, and policies. The grazing permits need to be renewed, with terms and conditions for grazing use that would meet, or make significant progress toward meeting, the Standards and Guidelines for Rangeland Health, Resource Management Plan, and other pertinent multiple use objectives for the allotment. Title 43 of the Code of Federal Regulations (CFR) Section 4130.2(a), effective March 24, 1995, states “Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans.” The current permittees meet all of the qualifications to graze livestock on public lands administered by the BLM.

The Nevada Northeastern Great Basin Resource Advisory Council (RAC), as chartered by the Department of Interior to promote healthy rangelands, has developed Standards and Guidelines for grazing administration. A thorough discussion of Standards and Guidelines is presented in the BLM Handbook H-4180-1(Rangeland Health Standards). The Northeastern Great Basin RAC Standards and Guides are available for public review on the Nevada BLM web site ([www.blm.gov/nv](http://www.blm.gov/nv)) or at the Elko District Office.

The standards for rangeland health to be met by the proposed action include the following:

Standard 1. Upland Sites: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform.

Standard 2. Riparian and Wetland Sites: Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

Standard 3. Habitat: Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet life cycle requirements of threatened and endangered species.

Standard 4. Cultural Resources: Land use plans will recognize cultural resources within the context of multiple-use.

Standard 5. Healthy Wild Horse and Burro Populations do not apply to this allotment. There are neither wild horse herd management areas nor wild horses within the Frost Creek Allotment.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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The June 2009 Standards and Guidelines Assessment concluded that all standards and guidelines are being met by the existing grazing permit terms and conditions, except standard 3 (Habitat) which was determined to be partially met with progress occurring within the allotment. The primary reason this standard was partially met was due to poor ecological condition of the native pasture.

Ecological status monitoring data collected in the native pasture in 2005 indicated that the area is in early seral ecological status. Sage grouse nesting and brood-rearing habitat quality is reduced due to the dominance in the understory of cheatgrass and Sandberg's bluegrass and the lack of forb diversity. While these species help to provide ground cover they dry out by mid to late May over most of the grazing allotments on the Elko District. In normal years foliage is often close to ground level by early summer due to breakage and normal break-down of very fine cured-out leaves.

Wildlife habitat conditions on native range upland and crested wheatgrass seeding areas are not likely to improve without specific management actions that increase the diversity of perennial native herbaceous cover and forage. Vegetation treatments are needed to reduce shrub foliar cover in the native range, reduce risk to catastrophic wildfires, reestablish shrub foliar cover in portions of the seeding areas, and restore plant community diversity and improve ecological condition. Proposed vegetation treatments are designed to enhance and protect sage grouse habitat as recommended in the 2000 Western Association of Fish and Wildlife Agencies (WAFWA) *Guidelines to manage sage grouse populations and their habitats* (Connelly et.al 2000) and a blue print for sage-grouse conservation and recovery (Braun 2006). Management actions that result in positive effects to sage grouse habitat would generally have similar effects to the habitat of other wildlife species that inhabit sagebrush habitat on a seasonal or yearlong basis on the allotment.

Current percent composition of cheatgrass and bluegrass as well as the high percent composition and canopy cover of mature stands of sagebrush in the native pasture has increased the potential for catastrophic wildfires.

Although the seedings are providing adequate sagebrush cover as indicated by monitoring and field observations, there is a lack of native forb and grass diversity.

The proposed vegetation treatments would help make progress towards meeting Standard 3 by improving plant community diversity as well as reduce the potential for re-occurring wildfires.

## **1.2 RELATIONSHIP TO LAWS, POLICIES AND LAND USE PLANS**

The Federal Land Policy and Management Act of 1976 (FLPMA) requires an action under consideration be in conformance with the applicable BLM land use plan, and be consistent with other federal, state, local and tribal policies to the maximum extent practical.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## 1.2.2 BLM Land Use Plan Conformance

The proposed alternatives (including proposed range improvements) conform to the decisions and objectives of the Elko Resource Management Plan (RMP), approved March 11, 1987. The livestock management objective from the RMP, page 20, is to “*Maintain or improve the condition of the public rangelands to enhance productivity for all rangeland values.*” They are further consistent with allotment-specific short and long term management objectives from the 1987 Elko Rangeland Program Summary (RPS) and subsequent plans for the Frost Creek Allotment, as stated above. This includes conformance with the Northeastern Nevada standards and guidelines for healthy rangelands. The 2009 and 2007 Standard and Guidelines Determinations indicate that the modifications to the 1994 FMUD grazing system would continue to meet rangeland health standards for upland and riparian sites (Standards #1 and 2), and that significant progress is being made towards meeting the wildlife habitat Standard #3. The conclusions of the determinations also reaffirmed that current livestock use is not the causal factor for partial non-attainment of the wildlife habitat Standard #3.

## 1.2.3 Consistency with Non-BLM Authorities

The proposed action is consistent with other Federal, State and local land use policies and plans to the maximum extent possible.

Table 1. Below identifies elements of the human environment that would and would not be affected and are regulated by a statutory or regulatory authority and are analyzed in chapter 3 of this EA, as well as those that BLM determined would not be affected.

**Table 1. Review of Statutory Authorities**

<b>Element/Resource</b>	<b>Present?</b>	<b>Affected?</b>	<b>Reason element present but not affected, or where in this EA the issue is analyzed.</b>
Health and Safety	Yes	Yes	See Health and Safety discussion in section 3.2.9 of this document.
Air Quality	Yes	Yes	See Air Quality discussion in section 3.2.2 of this document.
Areas of Critical Environmental Concern	No	No	
Cultural Resources	Yes	Yes	See cultural resources discussion in section 3.2.8 of this document.
Environmental Justice	No	No	No low income or minority population would be disproportionately affected by proposed renewal of the permit.
Farm Lands (prime or unique)	No	No	

## Frost Creek Allotment Grazing Permit Renewal and AMP

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Element/Resource	Present?	Affected?	Reason element present but not affected, or where in this EA the issue is analyzed.
Floodplains	Yes	No	The alternatives do not propose any changes to floodplain characteristics as described by Executive Order 11988
Livestock Grazing, Vegetation, and Invasive, Nonnative Species	Yes	Yes	See section 3.2.1 of this document for discussions concerning Livestock Grazing, Vegetation and Invasive, Nonnative Species, including noxious weeds.
Wildlife including Special Status Species and Migratory Birds	Yes	Yes	See discussions for Wildlife including Special Status Species and Migratory Birds in section 3.2.6 of this document.
Native American Religious Concerns	No	No	No concerns have been identified to date. Continued grazing is not expected to affect future use of any sites of traditional, cultural and religious importance to tribes.
Threatened or Endangered Species	No	No	
Wastes, Hazardous or Solid	No	No	
Water Quality (Surface/Ground)	Yes	Yes	See Water Resources and Soils discussion in section 3.2.3 and 3.2.4 of this document.
Wetlands/Riparian Areas	Yes	Yes	See Wetland and Riparian Areas discussion in section 3.2.5 of this document.
Wild and Scenic Rivers	No	No	
Wilderness	No	No	
Visual Resources	Yes	Yes	See Visual Resources discussion in section 3.2.7 of this document.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## 1.2.4 Guidelines to Manage Sage Grouse Populations and Their Habitat

In addition to the many other management objectives and/or standards that apply to sage grouse and/or sagebrush habitats, both the Wells and Elko RMP's require that alterations of sagebrush areas would be in accordance with the 1977 *Western States Sage-Grouse Guidelines*, as amended, and as future studies might dictate. In 2000 the Western Association of Fish and Wildlife Agencies (WAFWA) finalized an update of the 1977 guidelines. The BLM, U.S. Forest Service, and the U.S. Fish and Wildlife Service signed a memorandum of agreement to consider these guidelines in their respective planning efforts, utilizing local expertise and quantitative data. In accordance with the existing Land Use Plans and the 2000 Memorandum of Agreement, the BLM considers the WAFWA guidelines in all sage grouse and/or sagebrush habitat enhancement projects that occur on public lands and/or are federally funded.

## 2 ALTERNATIVES

The alternatives in this chapter, including the No Action Alternative, were developed as the result of recommendations for grazing management changes from the 2002 PMUD and the standards and guidelines assessments issued in 2007 and 2009. Specifically, the proposed alternatives and range improvements are needed to meet management objectives, multiple use objectives, and for improving resource conditions. Comments received from the public were used in developing the alternatives and proposed range improvements.

### 2.1 Mandatory Terms and Conditions Applicable to All Alternatives

- Grazing use will be in accordance with the Final Decision and AMP for the Frost Creek Allotment dated To Be Determined.
- An accurate actual use report will be submitted within 15 days of livestock being removed at the end of the grazing season.
- The permittee(s) are required to perform maintenance annually on range improvements in accordance with signed Cooperative Agreements/Section 4 Permits prior to livestock turn-out.
- Supplemental feeding is limited to salt, mineral and/or protein supplements in block, granular or liquid form. Such supplements must be placed at least ¼ mile from live waters (springs, streams, and troughs), wet or dry meadows, and aspen stands.
- All riparian exclosures, including spring development exclosures, are closed to livestock use unless specifically authorized in writing by the authorized officer.
- Pursuant to 43 CFR 10.4(G), the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(C) and (D), you must stop activities in the immediate vicinity of the discovery and protect it from your activities for 30 days or until notified to proceed by the authorized officer.

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# Frost Creek Allotment Grazing Permit Renewal and AMP

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- The terms and conditions of your permit may be modified if additional information indicates that revision is necessary to conform with 43 CFR 4180.

## **Mandatory Term and Condition Applicable to Alternative 3**

- Temporary Non Renewable Use (TNR) of up to 233 AUM's on an annual basis shall be authorized on the crested wheatgrass pastures after 6/1 consistent with 43 CFR 4110.3-1(a) and 43 CFR 4130.6-2, and the use would not preclude the attainment of any established objectives or standards for rangeland health.

## **2.1.1 Proposed Management Objectives Applicable to Alternatives 2 and 3**

The management objectives below would be included in the Final Decision for the Grazing Permit Renewal and AMP for the Frost Creek Allotment, to be subsequently issued following this EA:

1. The utilization objective on native key grass species for the Jiggs Flat Pasture would be a maximum of 50 percent utilization of current year's growth in any given year to be measured at the end of the scheduled use period or growing season whichever occurs later.
2. The utilization objective on the crested wheatgrass would be an average of 50 percent utilization calculated during the 6-year deferred rotation period not to exceed 60 percent utilization of current year's growth in any given year. Utilization would be measured at the end of the scheduled use period or growing season whichever occurs later. Non-use of a pasture would not be incorporated into the average for the 6-year deferred rotation period.
3. Should these objective levels be exceeded in any pasture of the allotment, future grazing applications will be adjusted as warranted based on the degree of use, period of use, and duration of use relative to past use and future plans for grazing use, and the affects of the utilization on rangeland health and other multiple use objectives.

## **2.2 Alternative 1 – 1994 FMUD Grazing System (No Action)**

Under this alternative, future livestock grazing authorizations would be issued the same as past authorizations and would be consistent with the terms and conditions of the current grazing permits and the 1994 FMUD Grazing System (see table 2. Below). Permitted use would remain at 1,976 AUMs.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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**Table 2. 1994 Grazing System for Frost Creek Allotment**

Pasture (herd)	Target AUMs	Year #1	Year #2	Year #3	Year #4	Year #5
Frost Canyon (cow/calf)	190	4/15-5/15	4/15-5/15	5/16-6/15	4/15-5/15	5/16-6/15
Frost Canyon (sales)	130	5/6-5/26	5/27-6/15	5/6-5/26	4/15-5/5	5/27-6/15
Brown (sales)	200	5/27-6/15	4/15-5/5	4/15-5/5	5/27-6/15	4/15-5/5
Corral Canyon (heifers)	286	4/15-10/1	4/15-10/1	4/15-10/1	4/15-10/1	4/15-10/1
North Zaga (drys)	270	4/15-5/21	6/27-8/1	5/22-6/26	6/27-8/1	5/22-6/26
South Zaga (drys)	300	5/22-6/26	4/15-5/21	6/27-8/1	4/15-5/21	6/27-8/1
Riley (cow/calf)	190	5/16-6/15	5/16-6/15	4/15-5/15	5/16-6/15	4/15-5/15
Riley (sales)	130	4/15-5/5	5/6-5/26	4/15-5/5	5/27-6/15	5/6-5/26
Jiggs (drys)	280	6/27-8/1	5/22-6/26	4/15-5/21	5/22-6/26	4/15-5/21

## 2.3 Alternative 2 - Proposed Action

This alternative proposes a permanent increase to active preference (*\*permitted use*) on the Frost Creek Allotment from 1,976 AUMs to 2,209 AUMs, for an increase of 12 percent. The season of use dates would occur between April 1 to December 15 annually. Under this alternative, modifications to the 1994 FMUD Grazing System (see Table 3 below) for the Frost Creek Allotment would be implemented. In addition to table 3 below other proposed modifications to the 1994 system were developed and can be reviewed in the June 2009 Standards and Guidelines Assessment document (see section 4.2 and subsection 9.1.3(A)((1&2))).

BLM is proposing to renew grazing permit authorization numbers 2701605 and 2703116 for a term of 10-years, with the modifications to the 1994 FMUD Grazing System. The permits would be further modified to included additional terms and conditions described in subsection 9.1.4(B) ((2)) of the June 2009 Standards and Guidelines Assessment. Appendix A of the June 2009 Standards and Guidelines Assessment displays Carrying Capacity Estimate's (CCE) at the 65 and 50% utilization objective levels on crested wheatgrass and 50% on native key grass species.

## Frost Creek Allotment Grazing Permit Renewal and AMP

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Under this proposal (*proposed action*), pasture stocking rates would be based on the CCE calculated at the utilization objective level of 50% on crested wheatgrass (AGCR) and 50% on native key grass species. The active permitted use would increase in the seeded pastures by 14 percent and decrease by 29 percent in the Jiggs Flat (native) Pasture.

**Table 3: Proposed Grazing System for the Frost Creek Allotment  
(Modifications to the 1994 FMUD Grazing System)**

PASTURE(S)	TARGET USE (AUMS)	TREATMENT DATES	STIPULATIONS
Frost Canyon, Brown, Corral Canyon, North Zaga and South Zaga	1,656 AUMs	Livestock use would occur from 4/1 to 12/15 annually	Following annual application by the permittee(s), use on these seeded (crested wheatgrass) pastures would occur as scheduled by the BLM consistent with the target use and treatment dates and would follow a deferred rotation format. No pasture would be grazed on the same dates more than two grazing seasons in a row.
Riley	353 AUMs	Livestock use will occur 4/1 to 6/1 or 10/1 to 12/15	Early or late use would not occur more than two out of four years
Jiggs Flat	200 AUMs	Livestock use will occur 4/1 to 5/1 or 7/15 to 12/15	Following annual application by the permittee(s), use on these pastures would occur as scheduled by the BLM consistent with the target use and treatment dates.

### **Flexibility**

The permittee(s) would be allowed 7 days of flexibility before the pasture start dates and after the pasture end dates (as described in the table 3 above) to adjust for annual fluctuations in livestock numbers, changing climate conditions, and to accommodate removing livestock from pastures, provided that this extended use does not exceed authorized number of AUMs, does not preclude the attainment of multiple use resource objectives, and would be approved by the BLM.

### **Rationale:**

Grazing use on the Jiggs Flat Pasture would follow a four-year deferred rotation format. Deferring use during the critical growing period (5/1-7/15) would aid in native grass and forb cover and diversity. The combination of implementing the utilization objectives and providing deferment for the native and seeded pastures is likely to result in improved cover values and nesting success for migratory birds and sage grouse during nesting periods. This alternative would also reduce the possibility of direct impacts by livestock including nest destruction or displacement during nesting and fawning periods. To provide for plant health and vigor for the crested wheatgrass seedings, the seeded pastures would be deferred during the critical growing period (5/1-7/15) once every 3 to 5 years. Providing more livestock deferment on the native

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## Frost Creek Allotment Grazing Permit Renewal and AMP

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and seeded pastures would allow for more native plants to produce seed. The proposed early or late use for the Riley Pasture is likely to maintain healthy riparian habitat. Additional rationale is discussed on page 5, section 4.2 of the June 2009 Standards and Guidelines Assessment document.

### **2.4 Alternative 3 - Temporary Non-Renewable Use (TNR)**

Under this alternative, permitted use on the Frost Creek Allotment would remain at 1,976 AUMs. TNR would be authorized up to 233 AUMs above the current permitted use (2209 AUMs) for years where additional forage is available. Under this proposal, livestock stocking rates could vary from 1,976 to 2,209 AUMs depending on the annual availability of forage on the crested wheatgrass pastures. TNR would be issued when monitoring indicates that additional forage is available. Season of use modifications to the 1994 Grazing System and the renewal of the term grazing permits as described in the proposed action alternative section (2.3) would be adopted for this alternative. This alternative includes the same decrease in active permitted use for the Jiggs Flat (native) Pasture as discussed under alternative 2.3 above.

This use would be authorized on an annual basis when conditions set forth in 43 CFR 4110.3-1(a) and 43 CFR 4130.6-2 are met. 43 CFR 4110.3 subparts (1) and (a) of the grazing regulations state: (1) “Additional forage may be apportioned to qualified applicants for livestock grazing use consistent with multiple use management objectives. Additional forage temporarily available for livestock grazing use may be apportioned on a non-renewable basis.” 43 CFR 4130.6-2 subpart (2) of the grazing regulations state that: “Nonrenewable grazing permits or leases may be issued on an annual basis to qualified applicants when forage is temporarily available, provided this use is consistent with multiple use objectives...” The above information would be added as a term and condition to the permits.

Additional use would only be granted after an interdisciplinary review of the application is conducted, field visits are completed to verify the availability of additional forage, and a determination has been made that the additional use would not impact the ability of the area to achieve or make significant progress toward achieving the Standards for Rangeland Health and other multiple use/resource objectives. Applications in future years for additional AUMs than what are described above would be considered outside the scope of this analysis and would be analyzed as new actions. This additional use of AUMs above active preference is considered to be temporary nonrenewable use, and will not result in a permanent change to permitted use.

#### **The following terms would be part of the approval of the annual TNR authorization:**

1. Utilization monitoring of crested wheatgrass on the Frost Creek Allotment would be conducted on an annual basis before the start of the proposed TNR use period to verify the availability of forage. Post-TNR utilization data would be collected immediately after the cattle are removed from each pasture to ensure the objective use level was not exceeded.

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## Frost Creek Allotment Grazing Permit Renewal and AMP

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2. If utilization of crested wheatgrass measured at the key areas after the TNR use period indicates that 60 percent utilization for the growing season was exceeded TNR would not be authorized the following grazing year in pastures where the 60 percent utilization was exceeded.
3. TNR would not be authorized during sage grouse nesting periods (4/1 through 6/1).

### **2.5 Range Improvement Options Applicable to Alternatives 2 and 3**

The range improvements proposed below could be incorporated into alternatives 2 and 3. Environmental effects of the proposed range improvements are analyzed in chapter three of this document. Vegetation treatments in the native and crested wheatgrass pastures would be completed as recommended in the 2000 WAFWA guidelines as actions to enhance or protect sage grouse habitat. This includes nesting, nesting-associated foraging, early (upland) brood-rearing and fall-winter habitat, and the potential for sage grouse to establish lek sites on suitable “open” habitat areas created by treatment actions within uniform shrub stands.

#### **2.5.1 Water Pipeline Extension**

The intent is to extend an existing pipeline from the North Zaga Seeding to the South Zaga Seeding. Under this alternative, an existing pipeline in the North Zaga Pasture (T 28 & 29 N., R 56 E., sections 5, 6, 31, and 32) would be extended south approximately .5 miles into the South Zaga Pasture (See Map 2, Appendix A). The pipeline would be buried underground along an existing two-track road and would connect with an existing pipeline and trough in the South Zaga Pasture. In order to provide water for livestock and to better utilize the north and west portions of the South Zaga Pasture, two new troughs are proposed on the pipeline extension at the following locations:

Location 1(*trough 1*): T 28N., R56E; Section 6, N/W ¼ N/W ¼

Location 2(*trough 2*): T 28N., R55E; Section 1, N/W ¼ S/E ¼

#### **2.5.2 Fuels Reduction and Habitat Enhancement Treatment (Native Pasture)**

The proposal includes vegetation treatments of up to 463 acres along existing roads in the Jiggs Flat (native) Pasture (see Map 4, Appendix A). A combination of mowing, herbicide application, disking, and seeding would be conducted. Proposed treatments would be designed to reduce hazardous fuels and protect intact stands of sagebrush. Additional benefits would be improved ecological condition and wildlife habitat values. Emphasis would be on improving and protecting sage grouse habitat which would also help to do the same for the habitat of many wildlife species that utilize sagebrush communities on a seasonal or yearlong basis. The 463 acres proposed for treatment in the native pasture is predominately an intact Wyoming big sagebrush community and has a very limited native forb and perennial grass component in the understory. The proposed treatment represents approximately 4 percent of the allotment and 20 percent of the pasture.

## Frost Creek Allotment Grazing Permit Renewal and AMP

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The treatment is consistent with recommended guidelines for sage grouse management outlined in the Western Association Fish and Wildlife Agencies (WAFWA) guidelines (Connelly 2000 et al). For specific details regarding the proposed treatments please see the Special Design Features section below (2.5.5).

Treatments could be completed over multiple years. This would depend on funding and the evaluation of the treatment success. Treatments would be evaluated at the end of the treatment period. If treatments are evaluated and are deemed unsuccessful, treatment strategies could be modified to meet long-term restoration and reestablishment objectives. In some cases, one treatment could have a low probability of success, but repeated treatments overtime are likely to achieve treatment objectives.

In the future, maintenance on vegetation treatments may occur when it has been determined that annual grass densities, re-growth and regeneration of shrub species are compromising the effectiveness of the fuels reduction treatments. Maintenance treatments may include mechanical, herbicide and seeding treatments.

In order to achieve establishment objectives for the seeded species in the treated area(s) it would be necessary to implement livestock closures. Livestock grazing closures and establishment objectives are discussed below in more detail in section 2.5.4.

### **2.5.2.1 Mechanical Treatments**

To meet treatment and resource improvement goals a combination of mowing and disking would be implemented. Mowing in a mosaic pattern in the intact continuous stands of sagebrush would open-up the understory for new growth development. Disking would turn over the soil, break up the continuous seed bed of cheatgrass, and prepare the soil for planting seed.

### **2.5.2.2 Herbicide Use**

The use of approved herbicides to reduce the density and composition of cheatgrass or other annual grass or weedy species would be utilized on a case by case basis as one of various measures proposed to improve sage grouse habitat. This considers guidelines outlined in the 2000 Western Association of Fish and Wildlife Agencies (WAFWA) guidelines for sage grouse habitat management. The use of Imazapic and Glyphosate herbicide treatments are proposed for use to suppress non-native annuals in order to introduce forbs and grasses into the treatment areas.

#### Imazapic & Imazapic + Glyphosate Treatment

Imazapic (trade names include but are not limited to) Panoramic 2SL, Plateau, and Imazapic E 2 SL) and Imazapic + Glyphosate (trade names include Journey) are chemicals proposed to treat cheatgrass (*Bromus tectorum*). Both chemical types would be incorporated into a tank mix of water, surfactants, crop oils or other adjuvants and applied at a rate in accordance with the label, State law, and BLM's Programmatic Environmental Impact Statement (PEIS) for Vegetation Treatments with Herbicides (BLM 2007).

# Frost Creek Allotment Grazing Permit Renewal and AMP

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Imazapic kills plants by inhibiting the production of branched chain amino acids, which are necessary for protein synthesis and cell growth. The Imazapic will be used as pre-emergent and so will be applied to the project area(s) in late winter or early spring.

There is the potential to use other herbicides that are approved for use on rangelands, as indicated in the Record of Decision for the *Final Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS* (BLM 2007). The EIS, including the Ecological Risk Assessment (Volume 2) for wildlife species is incorporated by reference in regard to risk quotients for terrestrial wildlife species. Treatments would be completed in a manner to mitigate the effects of herbicide usage on wildlife and wildlife habitat.

## 2.5.2.3 Seeding Treatment

The seeding operations would include seeding big sagebrush vegetation type-dominated ecological sites with native or native cultivar plants not native to the Northeastern Great Basin but are appropriate for the ecological sites. These species would help to restore many ecological site functions and meet specific treatment objectives. With the aid of soil maps and ecological site inventory maps, approximately 463 acres would be considered for seeding treatments. The proposed seeding method for this treatment would be drilling. However, depending on terrain, soil type, soil moisture, and seeded species one or more of the following methods may be used.

- **Broadcast and Drag** - broadcast application of seed (aerially or by truck or all-terrain vehicle (ATV) mounted applicators) followed by dragging a heavy chain across the seeded area to enhance ground-to-seed contact. Ground-to-seed contact can be a critical factor in successful seeding.
- **Broadcast/Aerial** - application of seed by distributing the seed through the air and the seed falling at random within the application area.
- **Harrow** - application of seed by broadcast method followed by enhancement of ground-to-seed contact by pulling a series of spikes (usually attached in rows to a metal frame) along the ground to pulverize and smooth the soil.
- **Hand** - application by scattering seed by hand using either no tools or hand-held broadcast spreaders.

Table 4. Below displays the proposed seed mixes for seeding operations. Substitution of seeded species and use of locally collected seed could occur depending on the availability of seed and funding.

### JIGGS FLAT (NATIVE) PASTURE - BASIN/WYOMING BIG SAGEBRUSH VEG TYPE-DOMINATED AREAS

**Table 4.**

Species/Variety	Rate PLS(lbs./ac)	Rate Bulk lbs/ac	Min % PLS per BLM standard	Total Bulk lbs. (rounded)	# PLS per Acre	# PLS /sq.ft (rounded)
<b>Drill Seeding Seed Mix</b>						
Siberian wheatgrass (Vavilov)	2.0	2.5	.8075		255,000	6
Snake River wheatgrass	2.030	2.6	.7650		260,000	6

## Frost Creek Allotment Grazing Permit Renewal and AMP

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Species/Variety	Rate PLS(lbs./ac)	Rate Bulk lbs/ac	Min % PLS per BLM standard	Total Bulk lbs. (rounded)	# PLS per Acre	# PLS /sq.ft (rounded)
(Secar)						
Big bluegrass (Sherman)	0.33	0.5	.6300		291,000	7
Thickspike wheatgrass (Bannock)	2.0	2.5	.7650		308,000	7
Blue flax (Appar)	1.0	1.3	.7600		293,000	8
Scarlet globemallow	0.25	0.4	.6750		125,000	3
Sainfoin (Eski)	3.0	3.7	.8075		90,000	2
Palmer Penstemon (Cedar or local source)	0.25	0.35	.7200		152,500	4
<b>Aerial/Ground Broadcast Seeding<sup>1</sup></b>						
Western Yarrow (Idaho cultivar)	0.15	0.18	.8100		415,500	10
Rice hulls (Seed Carrier) <sup>2</sup>		2.0				
<b>Rounded Total</b>	<b>11.0</b>	<b>14.0</b>			<b>2,100,000</b>	<b>53</b>
<p>1-Aerial/Ground broadcast seeded over drill seeding area after drill seeding operations.                  2-Rice hulls would be applied at an average rate of 2lbs/acre depending on contractor's seeding equipment and the ability to seed without the carrier. The seed that was planned for seeding with the carrier could possibly be included in the drills during drill seeding efforts.</p>						

### 2.5.3 Mowing and Interseeding Crested Wheatgrass Pastures

Implement approximately 1700 acres of vegetation treatments throughout the seeded pastures within the allotment. Proposed treatments would include a combination of mowing, herbicide use, and disking to reduce the amount of crested wheatgrass, and interseeding a desirable native or native exotic grass, forb, and shrub seed mix. Mowing would be conducted in the fall to avoid fawning and nesting periods for migratory birds and sage grouse. The intention of the treatment is to reduce the amount of crested wheatgrass and introduce a variety of native species to improve the ecological diversity of the plant community. Treatments would be focused on seeded pastures with poor forb diversity and where canopy cover of sagebrush is less than 8 percent. Crested wheatgrass seedings typically display poor diversity of forbs and other native grasses which are vital components for sustaining healthy wildlife habitat populations. The treatments could be conducted over multiple years. This would depend on availability of funding, receptivity of sites to proposed treatment actions, and the management of livestock to

# Frost Creek Allotment Grazing Permit Renewal and AMP

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successfully meet treatment objectives. Success of the treatments would be evaluated and repeated treatments would be considered similar as discussed in section 2.5.2 above.

Rest from livestock grazing would be necessary in order for seeded species in the treated area(s) to achieve establishment objectives. Livestock closures and establishment objectives are discussed in section 2.5.4 below.

Conclusions of treatment success and monitoring results discussed in a project report completed by the University of Nevada, Cooperative Extension for tests plots on state lands were considered and used in the development of the proposed vegetation treatments. To view this report, go to Appendix B.

## 2.5.3.1 Herbicide Application

Glyphosate is an herbicide proposed for use to reduce dominance of crested wheatgrass. With the use of this herbicide to reduce competition of crested wheatgrass along with mechanical treatments described in section 2.5.2.1 above, the introduction and establishment of desirable shrubs, forbs and grasses into the treatment areas is likely to be successful.

Glyphosate inhibits an enzyme involved in the synthesis of the amino acids tyrosine, tryptophan and phenylalanine. It is absorbed through foliage and translocated to growing points. Because of this mode of action, it is only effective on actively growing plants; it is not effective as a pre-emergence herbicide. If the evaluation of treatments in the seeded pastures indicates that cheatgrass is establishing on the site, a pre-emergent such as Imazapic could be incorporated as a tool to inhibit growth of cheatgrass.

### Glyphosate Treatment on Crested Wheatgrass Pasture Treatment Areas

Glyphosate, sold under a wide variety of trade names, would be used to treat crested wheatgrass (*Agropyron cristatum*) on a site-specific basis. This would allow for “treatment plots” consisting of seeded shrubs (four-wing saltbush or big sagebrush) and native perennial grasses and forbs to become established within crested wheatgrass stands. Glyphosate would be incorporated into a tank mix of water, surfactants, crop oils or other adjuvants and applied at a rate in accordance with the label, State law, and BLM’s Programmatic Environmental Impact Statement (PEIS) for Vegetation Treatments with Herbicides (BLM 2007).

## 2.5.3.2 Seeding Treatment

Seeding of the treatment areas would include a diverse seed mix of desirable native or native cultivar plants not native to the Northeastern Great Basin but are appropriate for the ecological sites. The seed mix would be designed to restore ecological plant community diversity. With soil and ecological site inventory maps as a reference, approximately 1700 acres would be considered for seeding treatments. The proposed seeding method for this treatment would be drilling. Other methods of seeding would be considered as discussed above in section 2.5.2.3.

Table 5. Below displays the proposed seed mixes for seeding operations. Substitution of seeded species and use of locally collected seed could occur depending on the availability of seed and funding.

## Frost Creek Allotment Grazing Permit Renewal and AMP

### CRESTED WHEATGRASS SEEDING PASTURES - BASIN/WYOMING BIG SAGEBRUSH VEG TYPE-DOMINATED AREAS

**Table 5.**

Species/Variety	Rate PLS (lbs/ac)	Rate Bulk lbs/ac	Min %PLS per BLM standard	Total Bulk lbs (rounded)	# PLS per Acre	# PLS /sq.ft(ro unded)
<b>Drill Seeding Seed Mix</b>						
Great Basin wildrye (Magnar)	2.0	2.6	.7650		260,000	6
Snake River wheatgrass (Secar)	2.0	2.6	.7650		260,000	9
Big bluegrass (Sherman)	0.33	0.5	.6300		291,000	7
Thickspike wheatgrass (Bannock)	2.0	2.5	.7650		308,000	7
Blue flax (Appar)	1.0	1.33	.7600		293,000	8
Scarlet globemallow	0.25		.6750		125,000	3
Sainfoin (Eski)	3.0	3.7	.8075		90,000	2.0
<b>Aerial/Ground Broadcast Seeding <sup>1</sup></b>						
Western Yarrow (Idaho cultivar)	0.15	0.18	.8100		415,500	10
Basin big sagebrush	0.10	0.625	0.16		250,000	6
Wyoming big sagebrush	0.15	1.0	0.16		375,000	9
Rice hulls (Seed Carrier) <sup>2</sup>		2.0				
<b>Rounded Total</b>	<b>11.0</b>	<b>13.1</b>			<b>2,725,000</b>	<b>68</b>
<p>1-Aerial/Ground broadcast seeded over drill seeding area after drill seeding operations.                  2-Rice hulls would be applied at an average rate of 2 lbs/acre depending on contractor's seeding equipment and the ability to seed without the carrier. The seed that was planned for seeding with the carrier could possibly be included in the drills during drill seeding efforts.</p>						

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# Frost Creek Allotment Grazing Permit Renewal and AMP

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## 2.5.4 Livestock Grazing Closures and Monitoring

Prior to implementing seeding treatments, livestock closure decisions would be issued closing the seeded area(s) to livestock grazing. The closure decision(s) would state such things as: what pastures would be closed, the extent to which the grazing preference would be temporarily suspended, duration of closure, establishment objectives and monitoring, and an analysis of the potential to meet objectives.

Livestock use would not be authorized in the seeded areas for a minimum of two growing seasons or until establishment objectives stated in the decision are achieved. Vegetation studies/monitoring protocols already established on the district would be used to evaluate the effectiveness of the treatments. Monitoring would be conducted by the BLM and the evaluation of data would determine if the objectives are achieved.

Factors to consider for post-treatment grazing management would be treatment success and achievement of establishment objectives. The BLM would coordinate treatments with the livestock grazing permittees throughout the process. In the interim period, during implementation of the treatments, the permittees and BLM would discuss grazing strategies that would achieve objectives and improve resource conditions. Once the target acres for treatments have been completed grazing management would follow the selected grazing management alternative.

## 2.5.5 Proposed Special Design Features

**The following special design features would be applied to all treatments to protect resources of concern:**

1. Existing stands of shrubs would not be disturbed outside of the treatment area.
2. Drill rows would be made with the contour of the land as much as possible.
3. Seed would be applied in designated areas at the rates and mixtures specified.
4. A project inspector would be designated to monitor all phases of the proposed project.
5. Vegetation treatments would not occur within 100 feet of any riparian areas or surface water.

### **Habitat Protection**

1. Treatment areas would be completed in mosaic designs with irregular edges.
2. “Islands” and/or strips would be left in mosaic designs with irregular edges within the treatment area. For treatment strips, an estimated 40 to 50-foot strip might be treated along existing roads prior to leaving untreated strips for fire suppression in the event of a wildfire. Otherwise, untreated vegetative “islands” would be left intact adjacent to access roads similar to what is shown in Figure 1. in this document.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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3. Treatment areas would be seeded primarily with native species that have the potential to stay succulent through all or part of the summer period to allow for vegetation that help to slow down or stop wildfires.
4. Mechanical treatments would be conducted outside the fawning and migratory bird nesting periods.
5. Surveys would be completed as an effort to mitigate the effects of treatments on pygmy rabbits and burrowing owls. Wildlife avoidance areas will be flagged off prior to project implementation. Equipment operators would be advised to avoid mechanical treatments or liquid herbicide application within an approximate 200-meter area around burrows that are observed while operating equipment during treatment operations and to inform the BLM of any observations of this species to allow for any further protective measures.

## **Herbicide Treatment**

1. All herbicide treatments would be applied as per the chemical label, State law, and BLM's Programmatic Environmental Impact Statement (PEIS) for Vegetation Treatments with Herbicides (USDI BLM 2007a).
2. Research (Baker 2009) on herbicide application on areas characterized by the big sagebrush vegetation types would be considered prior to on-site use.

## **Roads/Access**

1. New roads would not be built for access and old roads would not be mechanically maintained. Minor spot work may be completed in sections where it may be necessary for equipment access.
2. Any vehicle or equipment entering or exiting the treatment area would be clean of any noxious weed plant parts. Known areas of noxious weed infestations would be avoided.

## **Cultural Resources**

1. A Class III cultural inventory and flagging to avoid eligible cultural sites would be completed prior to start of any on-the-ground project work.
2. If cultural resources are discovered during construction, activities which might damage or destroy such resources shall cease and the Project Coordinator shall be notified immediately.
3. Pursuant 43 CFR 10.4 (g), the authorized officer must be notified, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d) all activities must stop in the immediate vicinity of the discovery and protected for 30 days or until notified to proceed by the authorized officer.

## **Safety**

During period of high fire danger, all equipment would be equipped with a functional spark arrestor. Operators would be required to, a minimum, have an axe and shovel on hand within the treatment area. No open fires would be allowed during fire restrictions.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **Public Coordination**

1. Livestock grazing permittees would be informed of anticipated treatment areas to be completed. Meetings would be coordinated by the BLM Rangeland Management Specialist to ensure there are no conflicts with livestock grazing on the allotment.
2. Any camp areas used by individuals working on the project or contractors will be cleaned of all trash and removed from public lands.
3. Livestock closure decision(s) would be issued to the livestock permittees and interested public for review and comment prior to implementation of treatments.

**The following design features are specific to the treatment:**

## **Water Pipeline**

Concerning construction of the pipeline, the following would be required:

1. Construction of the pipeline would meet BLM specifications. Stock-water troughs would be located to take advantage of topography and vegetation to screen sites from view. Stock water troughs would be placed so that the height of the top rim would not exceed 20 inches above ground level and maintained at this level or lower level. The overflow outlets would be located downhill from the trough at a minimum of 40 feet. The stock water troughs would fit in with the color scheme of the overall landscape and one of the BLM's Standard Environmental Colors to minimize the visual contrast in the landscape would be used.
2. An archaeologist would inventory the proposed pipeline extension route prior to any construction. The pipeline would be rerouted to avoid any historic properties (i.e., sites eligible for the National Register of Historic Places). An archaeologist would monitor the spring development and pipeline installation to check for subsurface cultural deposits not visible on the surface. Rerouting would be used to avoid any historic properties. Cultural and Archaeological resources are protected under the Archaeological Resources Protection Act (16 U.S.C. 470ii) and the Federal Land Management Policy Act (43 U.S.C. 1701). Also, though the possibility of disturbing Native American gravesites within the project area is extremely low, inadvertent discovery procedures must be noted. Under the Native American Graves Protection and Repatriation Act, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery and avoid additional damage to the location until the land manager can respond to the situation. The same applies for any discovery of artifacts or other cultural resources during pipeline installation, use, and maintenance.
3. A bird and small mammal access ramp/escape ladder (furnished and installed by the BLM or designed as part of the stock water trough itself) would be maintained in each stock water trough by the permittee.
4. A wildlife survey would be completed concurrently with the cultural inventory.
5. No roads would be constructed, but vehicular use along the pipeline route would occur with routine maintenance.
6. Surface disturbance associated with the project construction would not exceed a width of a 30-foot on the side of the two-track road the pipe is to be buried. Disturbance would be limited to 30-foot diameter circle around the water trough. All ground disturbance

## Frost Creek Allotment Grazing Permit Renewal and AMP

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- associated with pipeline construction resulting in bare ground would be seeded with a seed mixture approved by BLM to help prevent soil erosion and noxious weed/annual weed establishment.
7. Pipe would be buried at least 18 inches below the ground surface unless otherwise required for engineering or avoidance of historic properties.
  8. No blading, grading, or scalping of the pipeline route would be allowed. Brush removal, if necessary, would be done by hand or with “brush beater” type equipment which does not uproot brush or otherwise break the ground surface.
  9. All trash and excess debris would be removed from the public lands and disposed of at an approved solid waste disposal site within 10 days of construction completion.
  10. The permittee would ensure that troughs are left full to provide water for wildlife when livestock are removed from the area as required by NRS 533.367. Water would be required to remain in the troughs from March 15 through October 15 of each year regardless of the given year’s grazing system as some wildlife species may become dependent on the troughs as water sources. The water shall be drained if freezing weather necessitates earlier drainage to prevent damage to the pipeline and trough.
  11. The permittee would reinforce the soil surface in a 15 ft radius surrounding the trough with 6” of road base or gravel.

### **Specific vegetation treatment information**

#### Jiggs Flat Native Pasture

Treatments would include patterned vegetative mowing and herbicide application during the fall. Disking for cheatgrass reduction would be completed in the spring (this would bury undesirable viable seed and litter to help prevent seeding). The area would remain fallow until seeding the following fall or winter. Completion of shrub mowing and herbicide application would occur during the fall period followed by seeding (“interseeding”) within these treated areas would be an effort to increase forage and cover diversity for wildlife.

Maintenance treatments in the native pasture may occur when the effectiveness of the fuels reduction treatments are compromised, generally when the shrub component exceeds 10 percent cover or grass loadings exceed 500 pounds per acre.

#### Interseeding Crested Wheatgrass Pastures Treatment

The proposed treatments would include the completion of mowing in a mosaic stripping pattern and two-way disking, and herbicide use, or a combination thereof necessary for seedbed preparation. This would be followed by fall and winter seeding efforts either the same year as seedbed preparation or the following year depending on recommendations regarding herbicide application.

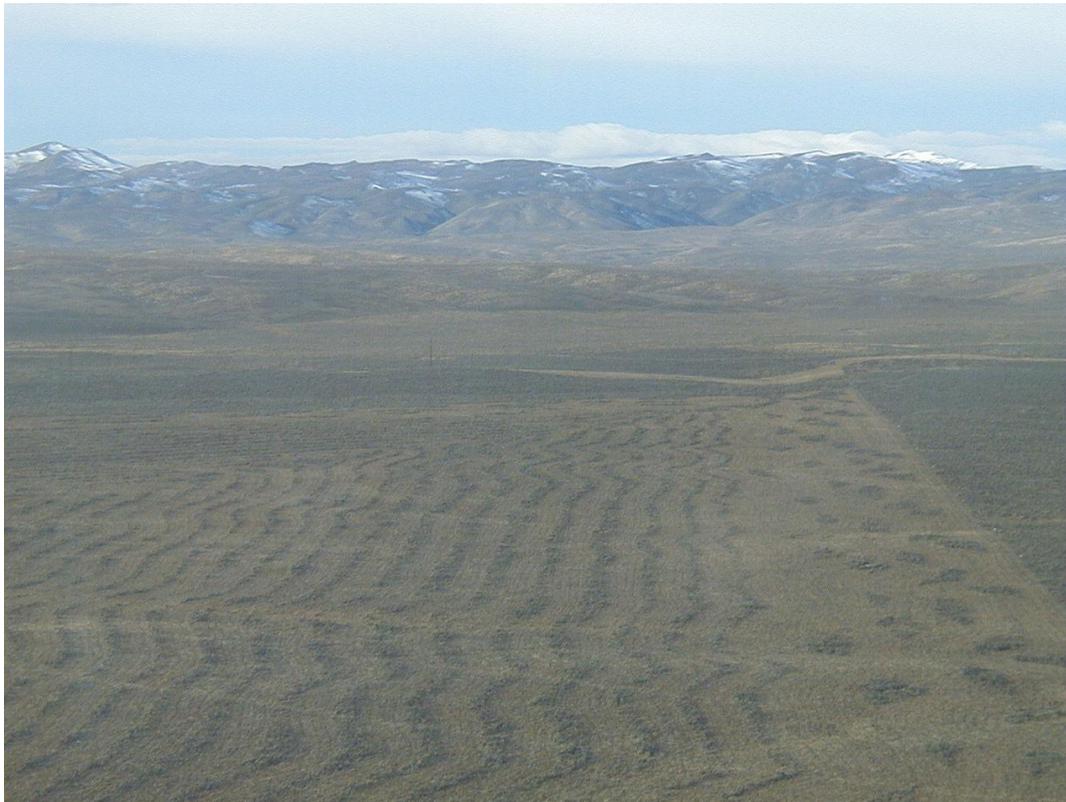
The mowing operations for initial seedbed preparation would be completed in mosaic designs with irregular edges with mowing widths from 300 to 500 feet. Mowing height would be four to six inches ground, conditions permitting. A combination of both island and strip methods would be considered to leave corridors and intact habitat for wildlife species; Figure 1. Below shows a large scale example of some possible “S”-shaped and

# Frost Creek Allotment Grazing Permit Renewal and AMP

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island-retention treatment designs. Mowing would be targeted for completion during the later summer and fall months (August thru at least November) or in the spring period prior to wildlife nesting periods. One major consideration would be to mow relatively clear areas around 40-50 feet in width adjacent to roads for fire suppression efforts in the event of a wildfire.

Figure 1.



## **Seeding Methodologies**

### **Drill Seeding for both Seeding Areas**

All grass and forb seeds would be seeded to a depth of 1/4 to 3/8-inch via seed drills between early October and late-January. Depending on the drill used, the drill row width spacing would vary from 8 to 12 inches.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## Aerial Seeding Operations over Drill Seeding Areas

Aerial seed mixtures could be applied over the drill-seeding areas. The species to be seeded may require seed dispersal either on top of the soil or just under the soil surface within the seedbed created by disking and drill seeding.

Aerial seeding would be completed in the late fall or early winter period as soon as possible after drill seeding depending on aircraft availability. Seeding locations would be computer-mapped (“AgNav”) to incorporate them into the BLM’s GIS database.

The proposed rehabilitation window would be dictated by seed delivery, contracting, drill and disk equipment availability, aircraft availability, and agency policy in regard to range/wildlife habitat rehabilitation. In the event that seed of any of the varieties listed are unavailable, the best alternative variety of the same or different species would be considered. Rice hulls would be considered as a seed carrier/dispersal medium during aerial seeding operations, as deemed necessary, to apply seed at the proposed seeding rates. This would be considered where aerial seeding rates could be compromised if apertures (openings on seeding equipment) are closed to a point to where seed could be affected.

## **2.6. Objectives for Establishment of Seeded Species**

The objectives for the establishment of seeded species would be consistent with the BLM’s Emergency Stabilization & Rehabilitation (ESR) Handbook (H-1742-1) and other objectives established at the district level. Proposed seeding treatments would be required to achieve:

*1. Established densities (on ten random 1m<sup>2</sup> plots): 1) Seeded grasses of 5 plants/m<sup>2</sup>, 2) Seeded forbs of 1 plant/m<sup>2</sup>, and 3) Seeded sagebrush of 1/2 plant/m<sup>2</sup> by the end of the second growing season.*

The following factors would be considered after completion of the seeding treatments:

Starting the first growing season after the treatment a monitoring program would be set up to evaluate the progress towards meeting the establishment objectives. At the end of second growing season, the seeded area(s) would be evaluated to see if establishment objectives were achieved or if there is a potential to meet objectives.

If objectives are not achieved, the BLM will assess the potential to achieve the objectives. Some of the information to be considered in this evaluation will be: the density and distribution of plants in the study area including seedlings/young plants, photographs and other field notes that help assess plant cover and vigor. After review of the above factors and the treatment is deemed unsuccessful, the pasture may be re-treated to meet objectives and livestock closures could be re-implemented.

## 2.7 Environmental Design and Resource Protection

Each treatment would include a number of features to ensure impacts are reduced to the extent possible and ensure the treatments are consistent with special design features. These are specific protective measures that would be identified for each treatment during the final design process. Due to the large scope of this EA and after considering geographic area, variety of soil types, variety of vegetative communities, number of special status species, number of types of treatments considered, variety of types and densities of cultural resources present, mixed land ownership pattern, high diversity of wildlife and variety of resource issues, it is not practical to create an exhaustive list of protection measures that could be incorporated into any given treatment. The following is a comprehensive list of design features to be incorporated into proposed projects:

1. **Non-Target Plant Buffers:** No aerial herbicide application would occur within 100 feet, and no on-ground broadcast herbicide application would occur within 25 feet, of areas containing agricultural lands, non-target trees or shrubs, or other non-target wildlife habitat susceptible to the site-specific herbicide, as determined by BLM interdisciplinary team specialists.
2. **Raptor Nest Buffers:** No liquid herbicide application or disking operations would occur within an approximate 200-meter distance of active raptor nest sites. No herbicide application would occur within 100 meters of any stick-built nest if the raptor species is susceptible to the herbicide to be used in that treatment. Note: The highest likelihood for protection would be for burrowing owls, a burrow-nesting raptor. Larger buffers would be considered depending on factors such as location of any active nests to distances from the edge of untreated areas. Otherwise, treated acreage could be expanded away from buffer areas on the same general treatment area to adjust for buffered acreage.
3. **Water Buffers:** All range improvement water sources, troughs, and/or dirt tanks in the vicinity of the treatment area would be buffered a minimum of 100 feet to ensure exclusion from chemical treatment. All springs, creeks, rivers, and riparian areas will be buffered as per the chemical label, State law, and BLM's Programmatic Environmental Impact Statement (PEIS) for Vegetation Treatments with Herbicides (BLM 2007).
4. **Wind Restrictions:** In order to avoid chemical "drift" during application of liquid herbicide spray, application would not occur when wind speed exceeds seven (7) miles per hour or wind velocities are inconsistent.
5. **Noxious Weed Prevention:** All terrestrial equipment (e.g. vehicles, hand tools, tractors, etc.) to be used in treatments would be cleaned before being brought to the project site, to avoid transferring noxious weed seeds.
6. **Treatment Shape:** Treatments would be designed to minimize impacts to visual resources by avoiding straight or block shapes.
7. **Cultural Resources:** All historic properties (i.e. archaeological sites listed or eligible for inclusion on the National Register of Historic Places) will be avoided during project implementation. Avoidance buffers of at least 30 meters will be observed during project implementation.
8. **Drill Seeding:** Drill seeding operations would be completed following the contour of the land as much as possible to reduce potential water erosion. Intact stands of sagebrush and native perennial vegetation would not be disturbed.

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# Frost Creek Allotment Grazing Permit Renewal and AMP

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9. Survey existing fences and implement design features that would mitigate wildlife concerns as time and funding allows.

## 2.8 Alternatives Eliminated from Further Analysis

### No Grazing Alternative

Under this alternative no grazing would be authorized in the Frost Creek Allotment. The term grazing permit would not be renewed. This EA tiers to the analysis in the 1986 EIS for the Elko RMP, which analyzed five livestock use alternatives. Although upland and riparian habitat would likely be enhanced under a scenario of no livestock use, the BLM is required to authorize only those actions that conform to the RMP as approved in the Elko Record of Decision (ROD). The Elko RMP establishes, among other things, that the Frost Creek Allotment is to provide for livestock grazing use, and that livestock grazing use is to be managed so that resource management objectives will be achieved. The 1985 Elko RMP and Rangeland Program Summary (RPS) established objectives for livestock grazing and provides for the establishment of a rangeland monitoring program to determine if management objectives are being met and to adjust grazing management systems and livestock numbers as required. Elimination of livestock grazing in lieu of making changes to the grazing systems and adjusting livestock numbers through monitoring is an action not in conformance with the RMP and RPS and is not considered by BLM to be a reasonable alternative for analysis in this EA. In addition, monitoring data shows that significant progress towards achieving the Standards and Guidelines for Rangeland health is being made with livestock present on the allotment. Therefore 43 CFR 4130.2(a) and 4130.2(e) (3) requires the issuance of grazing permits to qualified applicants that accept the proposed terms and conditions of the permit or lease.

## 3. AFFECTED ENVIRONMENT/EFFECTS OF ALTERNATIVES

### 3.1 Scope of Analysis

#### Setting

The proposed action alternatives (including proposed range improvements) are within the Frost Creek Allotment and the area of analysis is within the Huntington Valley Watershed. The area is comprised of crested wheatgrass seedings that were converted from big sagebrush in the 1960s. The Jiggs (native) Flat Pasture is comprised of basin big sagebrush/perennial grassland vegetation type with areas of juniper woodland stands and is classified as the native pasture. The area includes crucial summer mule deer habitat and is also used all year by pronghorn antelope. The eastern pastures (portion of Jiggs, Corral Canyon and Frost Canyon pastures) provide intermediate habitat for mule deer and summer antelope habitat. The native areas (not seeded to crested wheatgrass) on Frost Creek Allotment are characterized by heavy foliar canopy and dense composition of big sagebrush with limited growth of grasses and forbs. Riley Field supports two intermittent drainages, Frost and Pearl Creek. The upper reaches of Pearl Creek on Forest Service lands (approximately 4.5 miles from the allotment boundary) support Lahontan Cutthroat Trout (LCT). Due to unsuitable habitat conditions, intermittent flows, county road culverts, and State of Nevada-authorized diversion of water for irrigation, habitat for LCT is not present on the Frost Creek Allotment.

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## Frost Creek Allotment Grazing Permit Renewal and AMP

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### 3.1.1 Related Past, Present and Reasonably Foreseeable Future Actions (PPRFFA's)

The Council on Environmental Quality (CEQ) regulations defines cumulative impacts as: “The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or Non-Federal) or person undertakes such actions.” Past present and reasonably foreseeable future actions related to the analysis of cumulative impacts on resources or uses affected by the proposed action primarily include livestock grazing, agriculture practices, oil and gas exploration, dispersed recreation, wildfire, and wildfire suppression and rehabilitation.

Livestock Grazing – Grazing of domestic cattle, sheep and horses has occurred on public and private lands in the area since at least the 1860s. The allocation of forage for livestock on public lands on a multiple use basis has occurred as a result of range adjudication after the 1934 Taylor Grazing Act and approval of the 1987 Elko RMP Record of Decision. Grazing is presently dispersed and seasonal on BLM and U.S. Forest Service-administered lands. The area is part of approximately 100,000 acres that have been type-converted, in part, to crested wheatgrass seeding areas from the Lamoille Valley (to the north) to Huntington Valley in the 1950s to 1960s period. It is anticipated that levels of livestock grazing would remain consistent at or near present levels on public lands within the study area. Numbers on private lands could increase or decrease at the landowners discretion. Decisions for temporary livestock grazing closures have occurred in areas burned by wildfires.

Agriculture – Agricultural activities, primarily the cultivation of hay crops for livestock, occurs on private lands along on or near water courses, including Frost Creek. It is anticipated that agricultural activities would remain at present levels.

Oil and Gas Exploration - Some isolated exploration has occurred in the past, in lease number NVN-74431. In 2007, the Straight Flush Oil Well in the Frost Canyon Pasture (T. 28N, R. 56E. NW¼ NE¼ of section 17) was drilled. No discovery was made and reclamation is in progress. Total disturbance by the well and access roads was 13 acres.

Recreation – Past and present recreation uses primarily include dispersed recreation activities such as hunting, fishing, camping, nature-viewing and off-highway vehicle (OHV) travel. The majority of the Frost Creek Allotment is in NDOW Management Area 6, hunt unit 065; the western pastures are in Management Area 10, Hunt Unit 103. Management Area 10 has the largest number of mule deer (est. 24,500 out of 108,000 in Nevada in 2008) for management areas in Nevada. Recreation opportunities such as the number of deer hunting tags, potential for viewing and antler collection reflect this number of deer. There has been a dramatic increase in OHV use in the study area since the mid-1980s. Recreation use on public lands within the assessment area is increasing based on continued population growth within Nevada including the Elko/Spring Creek area. In addition, public access has dramatically increased in the southern portions of Ruby Mountains, specifically Huntington Valley. Public access in the Northern portions of the Ruby Mountains is not increasing primarily due to limited access and blocked

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## Frost Creek Allotment Grazing Permit Renewal and AMP

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parcels of private lands. A portion of the Hastings Cutoff, part of the California National Historic Trail, passes through Huntington Valley, and receives some visitation.

Wildfire and Rehabilitation -Historically, wildland fires have impacted the Huntington Valley Watershed. Wildfires have been aggressively suppressed on the Huntington Valley Watershed area by the BLM, U.S. Forest Service, State of Nevada-Division of Forestry and trained volunteers in, at least, the last 20-30 years. Included in the Appendices, Map 5 displays the Fire History of the watershed from 1985 to present. 1999, 2006, and 2007 were the most significant years where fires impacted the watershed. Fires have impacted approximately 190,000 acres within the watershed since 1985. Of the 190,000 acres impacted, 146,657 acres were on BLM administered lands. Other impacted lands making up the remaining acres were on Tribal, intermingled private, and Forest Service lands. Fire impacts have affected the resource conditions and wildlife. As a result of these fires, some areas have been converted from sagebrush perennial dominated plant communities to invasive non-native communities. In terms of losses to wildlife habitat due to fire, Greater Sage Grouse are among the most impacted species. The species is considered a sagebrush-obligate species and they require healthy and diverse age structures of sagebrush to provide habitat for successful nesting, brood-rearing winter and lek-associated use areas. Map 5 shows sage grouse leks impacted by fire within the watershed.

There has been approximately 18,054 acres seeded by the BLM on public lands as part of rehabilitation efforts on the Huntington Valley Watershed associated with wildfires between 1999 and 2006. This includes the seeding of big sagebrush in swaths (e.g. seed 80-foot strip and leave 80-foot strip to where 250 acres seeded in a 500-acre area) to where larger areas could have establishment and recruitment into unseeded areas. Seeding efforts have resulted in the establishment of big sagebrush, and perennial grasses and forbs on large areas within the watershed. Several thousand acres were seeded as an effort to establish fuel breaks; these efforts have resulted in the establishment of perennial vegetation which would help to slow down or stop a wildfire on many areas.

### 3.1.2 Geographic Scope

The Frost Creek Allotment is in a portion of Elko County known as the Huntington Valley. The area affected by the proposed action alternatives varies by resource, but is generally bounded by the Ruby Mountains to the east, Huntington Creek to the west, private lands along Brown Creek to the south, and the Mound Valley U.S. Forest Service lands to the north.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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**Table 5. Cumulative Effects Study Areas (CESA)**

Resource/Use	Name	Description
Water Quality	Frost and Pearl Creek Watershed	Portions of the Huntington Valley hydrologic unit east of Huntington Creek that are drained by Frost Creek and Pearl Creek. The drainage area represents about 7% of the 427,572 acres in the Hydrologic Unit.
Vegetation		
Noxious Weeds		
Visual Resources		
Wildlife Including Special Status Species and Migratory Birds		
Grazing Use Soils	Grazing CESA	Frost Creek Allotment pastures, including 10,613 acres of public and 544 acres of private land, plus the private land along Frost Creek that is also owned/controlled and grazed by the livestock grazing permittees.
Wildlife – Big Game	Deer CESA	Hunt Unit 065 (Yearlong mule deer range) Hunt Unit 103 (Crucial deer winter range)
Greater Sage Grouse	Sage Grouse CESA	South Fork Sage Grouse Population Management Unit [lekking (breeding display) summer, fall-winter, nesting and brood-rearing habitat].
Cultural Resources	Huntington Valley	

## 3.2 EFFECTS OF THE ALTERNATIVES

The following affected resources are brought forth for analysis

### 3.2.1 Livestock Grazing, Vegetation, and Invasive Non-Native Species

#### Affected Environment

##### Livestock Grazing

Livestock grazing is an important economic activity in Elko County. A 2003 study identified 142 economic sectors within the Elko County economy. Cattle ranching recorded \$53.8 million in output value, which ranked this industry 8<sup>th</sup> out of the 142 sectors; the sector employed 482 people, representing 2.53% of the total workforce, which ranked this sector 9<sup>th</sup> out of the 142 sectors; the industry realized \$43.5 million in export sales, representing 5.77% of Elko County's total exports, which ranked this sector 4<sup>th</sup> out of the 142 sectors. Total economic impact of the industry to Elko County amounted to \$96.6 million dollars, with a total direct and indirect payroll of 905 jobs representing \$14.4 million in income (Alevy, Jonathan, et. al., 2007; Riggs, William et. al, 2002; Fadali, Elizabeth, et. al., 2009; Fadali, Elizabeth, and Thomas R. Harris., 2006; Harris, Thomas R., et. al., 2007).

Elko County has a land base of just less than eleven million acres, of which 71.5% is in Federal ownership. Private farm and rangelands occupy another 26% of the county's land base, with the remaining 2.5% of the land base occupied by other uses. Hay is the principle crop raised on the private farmlands. The 1997 Census of Agriculture counted 402 farms and ranches in the county, with an aggregate cow herd ranking Elko County fourth in the nation in terms of animal numbers. Approximately 68% of all Elko County beef cow operations held federal grazing

## Frost Creek Allotment Grazing Permit Renewal and AMP

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permits. The average Elko county ranch derives 49% of its annual forage requirements from public lands. Each Animal Unit Month utilized on public lands in Elko County is estimated to have a total production value of \$38 and a total economic impact of \$68. In 2006 an estimated 152,000 cows grazed within the county.

The two livestock grazing operations on the Frost Creek Allotment (public lands) are permitted for 1,976 AUMs, which represents a total annual impact of \$134,368 to the Elko County economy (*\*based on the 2003 study mentioned above*).

The two livestock operators primarily run a cow/calf operation. The private ranch operations harvest hay on the meadows during the summer months and the hay is fed during the winter months on the meadows when the livestock are off Forest Service and BLM administered lands. Both operators have grazing permits on other Forest Service and BLM lands. This provides for more flexibility towards improving range conditions. Grazing takes place in the spring and fall on the federal administered lands.

The Frost Creek allotment is made up of seven fenced pastures encompassing 11,158 acres (includes private and public acres (**see Map 2 attached**)). The Frost Canyon, Brown, Corral Canyon, Riley Field, North and South Zaga are primarily crested wheatgrass seedings established in the 1960s.

The active grazing preference (*\*permitted use*) for the Frost Creek Allotment, as it was authorized by the 1994 Decision, is 1,976 AUMs. Of the 1,976 AUMs of active preference, 840 AUMs are associated with permit authorization number 2703116 and 1,136 AUMs are associated with permit authorization number 2701605. The permittees who have grazing privileges for the permit authorizations mentioned above run separate livestock operations and do not run in common on the allotment. The permittee that has grazing privileges for authorization number 2703116 exclusively uses the Riley, Frost Canyon, and Browne pastures and the other permittee who has grazing privileges for authorization number 2701605 exclusively uses the North Zaga, South Zaga, Jiggs, and Corral Canyon pastures. The number of livestock permitted, total active preference, and seasons of use for both permittees are displayed below in table 6.

**Table 6.**

Permit Auth. Numbers	Livestock Number/Type	Season of Use	PPL	Active Preference AUMs
2703116	412 Cattle	4/15 – 6/15	100	840
2701605	203 Cattle	4/15 – 10/1	100	1,136

### Range Improvements (Water Developments)

The Frost Creek Allotment is cross-fenced to create pastures to better facilitate deferment, changes in season of use, and to help achieve resource objectives. The allotment has a network of troughs and pipelines; the pipelines are gravity fed from stock tanks and the water sources originate from spring sources. The allotment map, **Map 2**, in the appendices section, shows existing range improvements on the allotment.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## Vegetation and Invasive Non-Native Species

The Frost Creek Allotment is primarily comprised of the following shrub species: Basin big sagebrush *Artemisia tridentata* Nutt. ssp. *tridentata* (*Asteraceae*), and rubber rabbitbrush (*Chrysothamnus nauseosus*). The following perennial/annual grasses are also present: Sandberg blue grass (*Poa secunda*), Thurber needlegrass (*Achnatherum thurberianum*), crested wheatgrass (*Agropyron cristatum*), and cheatgrass (*Bromus tectorum*). The major vegetative component that directly affects the allotment is crested wheatgrass.

Production data collected in 2005 at the Wildlife Key Area (DY-T-88-05) in the Jiggs Flat (native) Pasture indicated the area is in poor ecological condition (“Early Seral status”). This is due to a heavy over-story composition of shrubs, limited diversity of native grasses, and a dominant understory of annual forbs and grasses, specifically cheatgrass dominance. Cheatgrass is an invasive exotic annual grass that directly competes with native plants for space, soil nutrients and water and in turn potentially limits wildlife habitat cover and forage diversity.

On July 23, 2009, BLM specialists visited the Jiggs Flat Pasture to assess the condition of the plant communities. This field assessment reaffirmed the same findings and recommendations discussed in the June 2009 Standards and Guidelines Assessment. Figures 2a. and 2b. Below show the dominant understory of annual species with limited presence of desirable native perennials. The poor ecological condition was observed throughout the native pasture.

Figure 2a. Jiggs Flat Native Pasture Key Area No. 2 Photo 7-23-2009



## Frost Creek Allotment Grazing Permit Renewal and AMP

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Figure 2b. Jiggs Flat Native Pasture Key Area No. 2 Photo 7-23-2009



The July 23, 2009, field assessment also included a visit to the North and South Zaga, Corral Canyon, and Riley seeding pastures. With above normal precipitation and favorable growing conditions observed in 2009, the seeding areas were very productive. A stop was included at Key Area No. 7 in the South Zaga Pasture. Cover and density of crested wheatgrass was noted to be high. At the key area a stubble height transect was conducted. Average height of the crested wheatgrass plants in the area was 22 inches (see figure 3a. and 3b below). The permittee rested the South Zaga Pasture in 2008 and 2009.

Figure 3a. South Zaga Seeding Pasture Key Area No. 7 Photo 7-23-2009



# Frost Creek Allotment Grazing Permit Renewal and AMP

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Figure 3b. South Zaga Seeding Pasture Key Area No. 7 Photo 7-23-2009



For detailed information regarding monitoring, ecological condition, composition, and cover for the allotment, refer to subsection 7.1.5, Appendix A (Frost Creek Allotment Data Summaries), and E (Additional Wildlife Habitat Monitoring Summary) of the June 2009 Standards and Guidelines Assessment document.

Cheatgrass is present in “small isolated areas” throughout the seedings, but is very prevalent in the native pasture (see photos above). Cheatgrass is not listed as a noxious weed species in Nevada, but is an invasive non-native annual weed of concern. There are a few infestations of Nevada-designated noxious weed species within the Frost Creek Allotment. Scotch thistle (*Onopordum acanthium*) is found in a few sites along Frost Creek. Each of these infestations is less than 0.1 acre in size. One known infestation of perennial pepperweed (*Lepidium latifolium*) is found in the Frost Creek Allotment. This infestation of perennial pepperweed is less than 0.1 acre in size.

Efforts to control these noxious weeds are ongoing and are described in the Invasive-Nonnative Vegetation Treatment EA (BLM/EK/PL-2000/029).

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## Direct and Indirect Effects of Alternatives

### Alternative 1 – 1994 FMUD Grazing System (No Action)

Under the No Action Alternative, the grazing permits would be renewed with existing terms and conditions. Grazing would be authorized as it has in the past, consistent with the 1994 FMUD Grazing System. The 1994 FMUD grazing system use is primarily during the critical growing period (5/1-7/15). This alternative gives the permittees the least flexibility out of all the alternatives. The overall economic impact to Elko County would be unchanged from the scenario explained in the affected environment above.

Under the 1994 system, grazing would continue at the wrong times for the physiology and lifecycles of the upland plants. Degradation of uplands plants and grazing during critical growth period every year would continue. According to conclusions made in the June 2009 Standards and Guidelines Assessment, field observations, and monitoring, the 1994 grazing system has not improved upland vegetation conditions, standards and guidelines for rangeland health, or multiple use objectives.

Under the No Action alternative, the vigor of native plants could be reduced as a result of critical growing period use which could facilitate the spread noxious and/or invasive weeds.

### Alternative 2 – Proposed Action

This alternative proposes a grazing system that provides flexibility for the livestock operations to adapt to annual conditions while continuing to improve resource condition trends across the allotment. Permitted use would increase on the Frost Creek Allotment from the current level of 1,976 AUMs to 2,209 AUMs. In terms of economic impact to Elko County, the current stocking level on the Frost Creek Allotment represents \$134,368 and the proposed increase to permitted use (233 AUMs) would raise the impact \$15,844 annually for an overall impact to Elko County's economy of \$150,212 annually. The above values only cover public land and do not include private land.

The grazing permits would be renewed and modifications to the 1994 grazing system would be implemented. Grazing management is expected to further the improvement of the standards and guides, specifically standard #3(Habitat), other multiple use resource objectives, and maintain or improve the current ecological condition. Changing grazing management under this alternative is likely to improve the health and vigor of the upland and riparian plant communities. Eliminating critical growing period use and implementing deferment in the native pasture would allow native herbaceous species to produce seed, increased plant vigor, and provide for needed cover values for wildlife foraging and nesting needs. With the utilization levels proposed, infiltration rates and hydrologic functions would improve and higher amounts of litter and sediment are likely to be observed.

Under this alternative, the grazing system is likely to improve the current composition of native perennial grasses and forbs. In the long-term, this proposed alternative is likely to improve forage quality, quantity, and in turn could increase cattle production. Utilization data collected on the seedings indicate that under the current use levels light utilization has occurred on average. The increase of 12 percent to active permitted use (233 AUMs) is based on a carrying

## Frost Creek Allotment Grazing Permit Renewal and AMP

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capacity estimate at the 50 percent target use level. The average of 50 percent utilization not to exceed 60 percent utilization in any given year on crested wheatgrass and a maximum of 50 percent utilization on native key forage species annually along with implementing the proposed grazing system is likely to improve cover, diversity, and plant health of the native herbaceous species.

The proposed increases on the crested wheatgrass pastures and the utilization levels of up to 60 percent are needed to maintain healthy vigorous crested wheatgrass plant communities and are essential to meet physiological needs of crested wheatgrass (Horton and Weissert 1970). According to scientific literature, monitoring, and field observations by specialists on the Elko District BLM, appropriate utilization level for crested wheatgrass has commonly been identified as 65% for the Elko District. Crested wheatgrass is a non-native introduced species that withstands repeated spring grazing and higher use levels than most native grass species while still retaining high vigor and production (Holechek 1981).

The spread of some noxious weeds is still likely under this alternative, but not to the same degree it would be under the no action alternative. This is due to livestock not being present, specifically in the native pasture and along Frost Creek within the Riley Pasture, when noxious weeds are dispersing seed. Livestock can spread noxious weed seed through grazing and trampling. Cheatgrass has been identified and is prevalent in the native pasture. Cheatgrass within the native pasture is not likely to be reduced with the proposed grazing system. Established cheatgrass densities are not likely to be reduced on portions of the native pasture without management actions that include efforts to reestablish perennial herbaceous cover (Winward 1991).

### **Alternative 3 – Temporary Non Renewable Use (TNR)**

The effects of this alternative would be similar as discussed under alternative 2 above. In addition, under this alternative permitted use would remain the same with the flexibility to increase permitted use up to 233 AUMs on the seeded pastures on an annual, temporary basis, when additional forage is available and conditions are met as described in section 2.4 of this document. Livestock operators may not have the flexibility to increase or decrease their herd sizes on an annual basis to meet forage availability requirements. Under this alternative, the economic impact to Elko county could vary from \$134,368 to \$150,212 annually. This is only an analysis of public land not including private values. The economic impact to the county would depend on the availability of forage on an annual basis and if the livestock operators have the flexibility to increase herd sizes to meet the demands for additional forage.

The utilization objective for crested wheatgrass would be an average of 50 percent utilization not to exceed 60 percent utilization in any given year. Issuing TNR would not result in a permanent increase to active preference. Utilization levels received as the result of authorizing TNR are likely to be in the light use category (21-40 percent) with small areas in close proximity to water sources where livestock concentrate in the moderate use levels. TNR would only be authorized on the seeded pastures after 6/1 (post sage grouse nesting) and the result is likely to be slightly extended time periods in pastures that would be used after 6/1 with use allowed up to 50 percent. Authorizing TNR when conditions are appropriate is not likely to preclude the attainment of multiple use objectives or the standards and guidelines for rangeland health.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## Range Improvement Options Applicable to Alternatives 2 and 3

### Water Pipeline Extension

The pipeline extension would provide water for livestock in the South Zaga Pasture. The availability of additional water is likely to better distribute grazing throughout the pasture. Utilization levels, with consideration to the proposed troughs, are likely to be in the light use category resulting in fewer areas receiving no-use, slight use, or moderate use. This improved distribution in grazing use would equate to more consistent and adequate herbaceous cover for wildlife across the allotment. Underutilized and decadent plants would be better utilized. More evenly grazed landscapes often result in improved plant health and vigor, and decrease grazing related impacts to cultural resources. The spread of noxious weeds species around new trough locations is likely to be low because noxious weed infestation sites on the allotment are small (less than 0.1 acres in size) and there is not currently a noxious weed problem around the existing troughs.

### Fuels Reduction and Habitat Enhancement Treatment (Native Pasture)

The impacts to livestock grazing would occur both in the short and long term due to the vegetation treatments. Short term impacts would be a temporary closure of the seeded areas/pastures to livestock grazing until establishment objectives are achieved. Livestock closures could have a negative short-term impact on the livestock operators. Closures temporarily reduce livestock numbers and limit flexibility for the operator to defer use on other pastures. In the long term, after treatment areas are established, forage quality and quantity could exceed the needs of both livestock and wildlife. Improved forage quality would also increase weight gains and reduce livestock loss and need to supplement.

Mechanical treatments, herbicide use, and seeding treatments are likely to reduce the competition of cheatgrass and other invasive annual species and improve the ecological condition by re-introducing desirable native perennial species back into the Jiggs Flat Native Pasture. Chemical use would suppress or inhibit the growth of cheatgrass. By adhering to herbicide application requirements on the label and implementing resource protection measures, herbicides are not likely to have negative effects to the plant communities (native or seeded plants). Imazapic has the potential and can be very successful in controlling cheatgrass while having limited adverse effects on native plant communities, soil, or water (Baker, Gardner, and Lyon 2009).

Vegetation treatments are likely to have positive benefits to the plant communities and improve overall rangeland health conditions. The establishment of perennial herbaceous cover that stays succulent throughout all or part of the summer period would help to either slow down or stop potential wildfires.

### Mowing and Interseeding Crested Wheatgrass Pastures

Effects of this treatment are similar to the effects of the treatment in the native pasture. In addition, the treatments in the seeded pastures would improve plant community diversity.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **Cumulative Impacts**

### Livestock Grazing

Livestock grazing has occurred on the Frost Creek Allotment for over 130 years. Grazing has been permitted to various people and types of domestic livestock. Throughout this time period grazing has generally occurred season long. In recent years, management changes to livestock grazing have been implemented on the allotment to improve resource conditions. In the 1980's and 1990's, a Cooperative Resource Management Plan (CRMP), Allotment Evaluation, and other decision documents were completed addressing resource conditions on the allotment.

The continued loss of perennial forage due to disturbances caused by oil and gas exploration, wildfires, and other disturbances could lead to the loss of available forage for grazing livestock; however, this would be offset by the alternatives which propose action that would result in an increase in the amount of forage available to grazing livestock. Through future permit renewals for grazing, adjustments to the season of use, number of animals allowed, and utilization restrictions could be implemented to offset any continued loss of perennial forage caused by any impacts from reasonably foreseeable actions.

The direct and indirect impacts of the action alternatives (2 and 3), including proposed range improvements, are expected to be beneficial to livestock grazing and therefore there are no cumulative impacts of concern. Livestock grazing is not likely to improve if the No Action Alternative is selected.

### Vegetation

The action alternatives and proposed range improvements would likely lead to an improvement in the health, diversity, and vigor of the vegetation communities. Therefore there is no cumulative impact of concern for this resource. However, additional disturbances such as, wildfire, oil and gas exploration, increased recreation use, and historic grazing practices have had negative impacts on this resource. The No Action alternative along with the PPRFFA's is expected to lead to deteriorating vegetation conditions.

### Invasive Non-native species

As a result of wildfire, non native invasive species establishment, recreation, hunting, and oil and gas exploration activities, and all other ground disturbing activities, vegetation communities have been negatively altered. Noxious weeds seed may be brought into the allotment on automobile and ATV tire treads. In addition to livestock, birds and wildlife can transport weed seeds on hooves, coats and feces. Wildfires that could occur within the allotment may allow for further encroachment by invasive and noxious weeds.

After analyzing the impacts from PPRFFA's, the action alternatives, and the proposed range improvements, there are no substantive cumulative impacts of concern. However, the No Action alternative in conjunction with the negative impacts possible due to wildfire, disturbance from recreation vehicles, and such things as oil and gas exploration, it is likely that the spread of invasive and non-native species could continue increasing at exponential rates.

## 3.2.2 Air Quality

### Affected Environment

The project area is located in an unclassified air basin. Air quality is generally good and thus considered to be in attainment of National Ambient Air Quality Standards. There are localized occurrences of fugitive dust by high winds, vehicular traffic, construction, electrical power generation, and mining but these activities have not resulted in violation of air quality standards for any criteria pollutants. The nearest classified area is the Class I Jarbidge Wilderness Area.

### Direct and Indirect Effects of Alternatives

#### Alternatives 1, 2 and 3

Under these alternatives there would be no substantive change in impacts to air quality.

#### Range Improvement Options Applicable to Alternatives 2 and 3

Proposed ground disturbing activities would have some direct impact on air quality as soil materials blow and increase suspended particulate matter. These impacts would be more severe if treatments occurred on dry soils during windy conditions. Additional direct impacts would occur as a result of vehicle use associated with all proposed activities. Vehicle use would result in some blowing of soils along with emission of vehicle exhaust.

Application of pesticides could impact air quality in the short term, but impacts would be marginalized through proper adherence to the pesticide label. Project stipulations require that herbicide would not be applied during windy conditions. Adherence to this requirement along with all applicable label indications would minimize direct impacts to air quality.

Proposed ground disturbing activities may have some short and long term indirect impacts to air quality. Short term impacts would occur as soil is disturbed and becomes more susceptible to blowing and increasing suspended particulate matter. In the long term treatments would be expected to decrease the likelihood of soil blowing and improve overall air quality.

### Cumulative Impacts

Implementation of the alternatives along with the wide variety of similar existing land uses in the airshed intersected by the alternatives would not likely lead to any violation of air quality standards. Air quality monitoring in nearby airsheds has not indicated that there are any current issues and proposed activities are not expected to impact air quality to the extent that standards would not be met.

It is not known to what extent reasonably foreseeable future activities in the project area will impact air quality, but it is unlikely that the proposed action and alternative 3 or any of the range improvement options would result in standards not being met. The State of Nevada's regulation of activities which impact air quality would serve to decrease the likelihood of standard exceedence. In addition, the relatively small scale and short duration of proposed activities which

# Frost Creek Allotment Grazing Permit Renewal and AMP

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impact air quality would likely not be sufficient to affect air quality enough to exceed standards. There are no cumulative impacts of concern related to the No Action alternative.

## 3.2.3 Water Resources

### Affected Environment

Water resources in the Frost Creek Allotment include perennial, intermittent and ephemeral streams, a spring, and groundwater. Frost Creek and Pearl Creek are the major streams within the allotment and are tributary to Huntington Creek in the Huntington Valley Watershed. The headwater for Frost Creek originates from a spring on privately owned meadows which border the Riley Pasture. Pearl Creek originates on Forest Service land east of the allotment and flows through the Pearl Creek and Lindsay Creek Allotments and private lands before entering the Riley Pasture. Pearl Creek flows most of the year, but usually goes dry for a few months during the summer. Frost Creek is an intermittent/ephemeral stream within the Frost Creek allotment. BLM sampled water quality on Frost Creek twice in 2005 and did not record any abnormal values.

Water resources within the Frost Creek Allotment are subject to water quality standards outlined in Nevada Administrative Code Chapter 445A (NAC). These standards apply during normal flow conditions. Huntington Creek was included in Nevada's 2006 303(d) impaired waters list for exceedences of total dissolved solids and total phosphorus. It is unknown whether, or to what extent the Frost Creek allotment is a source of constituents that resulted in these violations. It is likely that violations are a result of a combination of natural and man-caused conditions within the Huntington Valley Watershed.

### Direct and Indirect Effects of Alternatives

Grazing can potentially impact water quality for water resources within the Frost Creek Allotment. In general, impacts to water quality occur when soils lose cohesiveness and are eroded by moving water through rainfall events and normal stream flow. These impacts to soils are described in the soils section of Environmental Effects in this document. Affected Soil solids become suspended in water increasing turbidity and several other water quality parameters. Sedimentation can also occur negatively impacting stream habitat. Grazing along stream banks and in other riparian areas can increase stream width to depth ratio and cause gullying which affects water quality and quantity by decreasing alluvial buffering, storage capacity, and base discharge.

Impacts to water quality are implied by Proper Functioning Condition Assessment and stream survey along with water quality data when they are available. A summary of these impacts can be found in the June 2009 Standards and Guidelines Assessment.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **Alternative 1 – 1994 FMUD Grazing System (No Action)**

Under this alternative, grazing impacts to water quality would continue at their current level. The resulting water quality conditions would not change and values would continue to be typical.

## **Alternative 2 – Proposed Action**

The proposed action would likely lead to slight improvement or no change to water quality. Incorporation of fall use into the grazing system for the Riley Field would allow for improvement and/or maintenance of both uplands and riparian areas. Increased watershed cover both on drainages and on uplands would improve water quality through a reduction in runoff and through trapping and filtering of sediments.

## **Alternative 3 – Temporary Non Renewable Use (TNR)**

It is expected that a slight improvement or no change to water quality would occur under this alternative. TNR would only apply to fall grazing which could occur 2 out of every 4 years. An additional precautionary measure of an interdisciplinary team review of the TNR application would ensure no negative impacts to water resources. TNR use would not be authorized when upland and riparian conditions are not suitable for additional use.

## **Range Improvement Options Applicable to Alternatives 2 and 3**

Some impacts to water quality could occur in the short term as a result of erosion of soils disturbed by vegetation treatments and pipeline construction. A discussion of these impacts to soils is presented below in section 3.2.4. Impacts to water quality could occur if a precipitation event results in overland flow across treated areas resulting in discharge into nearby streams of water quality standards. This would result in an increase of suspended solids, nutrients, and dissolved solids. It is likely that concentrations of these constituents which come from disturbed areas would be slightly higher than concentrations from undisturbed areas in such an event. These impacts would not likely result in exceedence in water quality standards. Downstream water would exhibit little or no change in quality under normal flow conditions.

Application of herbicide presents unique risks to ground and surface water quality, but these risks would be reduced or eliminated through adherence to standard operating procedures for application of these specific substances.

In the long term water quality could experience some improvement as a result of improved upland soil quality. A discussion of improvements to soil quality is presented in section 3.2.4

## **Cumulative Impacts**

Cumulative impacts to water quality can occur as a result of several natural conditions and human caused actions which affect watershed processes in the Huntington Valley Watershed. Natural conditions include flooding, fire and drought. Human caused actions include agriculture, grazing, recreation, and other disturbances. Water resources are generally negatively affected by these impacts because they can result in departure from the equilibrium condition. Water quality within the Huntington Valley watershed would not be expected to change under the proposed

## Frost Creek Allotment Grazing Permit Renewal and AMP

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action. While proposed range improvements could lead to some temporary impacts to local streams during heavy storm events, water quality would not be expected to change in local streams under normal flow conditions. The alternatives (including the proposed range improvements) as well as the no action alternative in conjunction with the PPRFFA's would not result in a substantive impact to water quality in the Huntington Valley Watershed.

### 3.2.4 Soils

#### Affected Environment

Soils within the Frost Creek allotment are Aridisols that vary in depth, texture, erosion potential, and other characteristics based upon several soil forming factors. Soils on fan piedmont remnants are medium to fine textured over a duripan. They are deep and have a slight wind and water erosion hazard when disturbed. Soils in the wooded areas are predominantly shallow over a duripan and often have gravelly silt loam to clay textures. Water erosion hazard is slight to moderate, and the wind erosion hazard is slight. Soils on steeper un-wooded slopes are shallow to moderately deep over a duripan, or deep without a duripan. Textures range from loam to clay, with or without gravel. Wind erosion hazard is slight for these soils when they are disturbed. Water erosion is slight on the lower slopes, but moderate above 8 percent slopes. BLM observers have recorded the presence of soil crusts within the Frost Creek allotment. These crusts exist in the understory of wooded areas in the South Zaga and Jiggs Pasture where there is less vegetative understory. Presence of these crusts which are composed of blue green algae and gelatinous lichens serve to stabilize soils and prevent erosion.

Field investigations have indicated that soil conditions within the Frost Creek allotment are generally good. Observers in 2002 reported no accelerated rill, gully, or wind erosion in the uplands, and a 2005 Rangeland Health Evaluation reported variations from natural conditions in the none to slight range. There is some head-cutting occurring along Frost Creek but there is no evidence that this is tied to any contemporary land use.

#### Direct and Indirect Effects of Alternatives

Grazing and related activities can potentially impact soil resources within the Frost Creek Allotment by altering its physical properties, and through removal of vegetation. Direct impacts include compaction, hoof shear, and other physical impacts which cause soils to lose cohesiveness increasing the likelihood of erosion by wind and water. Similar impacts occur indirectly as a result of vegetation removal. A decrease in vegetative cover as a result of grazing can increase exposure of soils to erosion from rainfall impact. A decrease in vegetative vigor due to grazing stress and increased susceptibility to weed establishment can increase the hazard of erosion.

Direct impacts also occur to biological soil crusts if present. The effects of these impacts are similar to those described above with the addition that affected biological soils would take longer to recover.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **Alternative 1 – 1994 FMUD Grazing System (No Action)**

Under the no action alternative impacts to soils would continue as described above. The condition of soils as described in the June 2009 Standards and Guides Assessment Appendix C would be expected to remain the same. The, no action alternative would not result in conditions of non conformance to the rangeland health standards (Pellant, 2005).

## **Alternatives 2 – Proposed Action**

The proposed action would likely result in some positive and some negative impacts to soils. Early use in the Riley Field could allow the Frost Creek riparian area to improve and help stabilize soils. Late use in Riley field would benefit soils, as streambank soils are less susceptible to trampling and compaction at this time of year when soils are drier. Increased AUMs in the upland could negatively impact biological soil crusts if livestock congregate in the wooded areas. Crusts are poorly adapted to compression disturbances, such as caused by livestock trampling. This would increase the soil's susceptibility to wind and water erosion.

## **Alternative 3 – Temporary Non Renewable Use (TNR)**

There are some potential negative impacts to soils as a result of increased grazing use. These impacts would not likely lead to any changes in soil quality. Monitoring conducted prior to TNR authorization would be used to identify potential issues and minimize these impacts. As compared to alternative 2 above, negative impacts to soils due to compaction is expected to be reduced as a result of drier soil conditions, with additional TNR use occurring after 6/1.

## **Range Improvement Options Applicable to Alternatives 2 and 3**

Impacts to soils would occur during the short term as a result of mechanical disturbance of the soil surface. Harrowing, disking, drill seeding and dragging are treatments that would disturb the soil surface and have direct impacts to soil quality. These activities would disturb soils anywhere from one to six inches in depth depending on the method used and existing soil conditions. Severity of impacts would depend on soil properties such as hazard of erosion by wind and water, T-Value, and antecedent conditions such as existing soil quality and moisture.

Proposed disking would result in impacts to soils up to six inches in depth and would have positive and possibly some negative impacts to soil quality. This treatment would result in addition of important organic nutrients to the root zone and facilitate vegetation establishment, but may possibly increase runoff and erosion (Blackburn, 1983).

Mechanical treatments would impact soil organic matter, infiltration rates, and aggregate stability in ways that may result in net positive or negative soil quality depending on post-treatment weather and seeding success. Treatments such as disking and drill seeding would add important organic nutrients to the root zone but may increase susceptibility to erosion by wind and water. This deep disturbance can improve soil porosity and aerate the root zone but may result in lower permeability resulting in less soil water availability and increased runoff and erosion. Decreased aggregate stability caused by this disturbance would exacerbate problems with erosion. Similar impacts would occur with proposed harrowing and dragging but would be less severe because disturbance would only occur up to one inch deep.

## Frost Creek Allotment Grazing Permit Renewal and AMP

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Treatments which remove vegetative cover would have both positive and negative impacts to soil quality. Proposed treatments which remove cover include mowing, disking, herbicide treatments and to a lesser degree, harrowing and drill seeding. The vegetation removal caused by these treatments can add a protective mulch layer to protect soil but can also reduce overall protection from rainfall impact and decrease soil stability if vegetation does not successfully re-establish (Blackburn 1983).

Impacts to soils would occur as a result of compression caused by vehicles driving over undisturbed soils. This would occur directly as a result of Harrowing, drill seeding dragging, mowing and any incidental vehicle use outside of established routes. Soil compaction results in decreased porosity and conductivity of water and air affecting soil productivity and soil quality characteristics.

Soils impacted by temporary mechanical disturbance and compression would eventually recover and regain their original productivity as long as the erosion factor T is not met as a result of treatment. Reestablishment of soil cohesion and aggregate stability would occur following disturbance; however, this cohesion may take many years to reach its full potential where biological soil crusts are present. There are no known occurrences of biological soil crusts where range improvements are proposed.

Soils near troughs would experience permanent impacts. Routine pipeline maintenance and repair along with concentrated livestock use near proposed troughs would likely result in soil compression and lack of productivity. Treatments would indirectly improve soil quality in the long term by establishing more extensive vegetative cover. Vigorous vegetative canopies and root systems would provide numerous benefits for soil quality by improving aggregate stability, compaction, infiltration, organic matter, soil biota and reducing erosion by wind and water.

### **Cumulative Impacts**

Cumulative impacts would occur to soils where there are multiple land uses within the Frost Creek Allotment. Past, Present, and reasonably foreseeable uses along with wildfire and other natural conditions have not and are not expected to result in poor soil quality. While there are some short term negative impacts associated with the proposed alternatives, they would not lead to a decrease in soil quality on the allotment scale or in the long term. The no action alternative in conjunction with PPRFFA's would not result in substantive cumulative impacts to soils. The proposed alternatives including the proposed range improvements would likely lead to some improvement of soil quality in the long term. There are no cumulative impacts of concern.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## 3.2.5 Wetlands and Riparian Areas

### Affected Environment

Riparian areas are limited to a portion of the Riley Field in the Frost Creek Allotment. Approximately 1.7 miles of Frost Creek and 1.8 miles of Pearl Creek occur in the Riley Field; both have intermittent flow. Riley field is the only pasture with riparian areas.

Field trips to Frost Creek report the presence of water in portions of the channel in June; Frost Creek is completely dry by August. Riparian habitat potential is clearly limited by a lack of perennial flow. Where riparian vegetation is present, dominant species include Nebraska sedge (*Carex nebrascensis*) and Baltic rush (*Juncus balticus*).

Plant species observed in Pearl Creek's channel include: Baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), Redtop (*Agrostis* spp.), cinquefoil (*Potentilla gracilis*), Kentucky bluegrass (*Poa pratensis*) and scattered clumps of willows (*Salix* spp.). During low flow, Pearl Creek varies with areas of standing water and areas of dry channel. Similar to Frost Creek, Pearl Creek's riparian habitat potential is limited by a lack of perennial flow. The upper reaches of Pearl Creek (outside the Frost Creek allotment) support Lahontan Cutthroat Trout (LCT). Habitat for LCT is not present within the Frost Creek Allotment due to the intermittent status of Frost Creek and Pearl Creek.

### Direct and Indirect Effects of Alternatives

#### Alternative 1 – 1994 FMUD Grazing System (No Action)

Under this alternative, the Riley Field would not be grazed during the hot season (hot season is 7/01 to 9/30). Although riparian areas with persistent soil moisture generally improve under continuous early season grazing, the potential exists for degradation of uplands because plants are grazed during critical growth periods every year.

#### Alternative 2 – Proposed Action

The proposal to alternate spring and fall use in the Riley Field with the restriction that early or late use would not occur more than two out of four years would allow for healthy riparian conditions in areas of persistent soil moisture. Early (spring) grazing (4/1 to 6/1) results in less use of riparian areas along drainage courses since uplands are still green and attractive to livestock. Early grazing also provides for re-growth of grazed vegetation once livestock are removed. The proposed application of a late (fall) prescription (10/1 to 12/15) potentially as often as every other year would ensure health of uplands and is expected to maintain limited riparian areas along Pearl and Frost Creek. Fall grazing has been shown to be compatible with herbaceous riparian communities since many perennial plants are completing their storage of carbohydrates and no longer need active leaf area (Leonard et al. 1997). As discussed for the affected environment, response potential for riparian vegetation on Frost Creek or Pearl Creek is limited as a result of intermittent flow. Proposed increases to livestock use (33 AUMs) during the proposed timeframes are not expected to noticeably impact riparian resources.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **Alternative 3 – Temporary Non Renewable Use (TNR)**

This alternative is expected to maintain the limited riparian areas. Permitted use on the Riley Pasture would remain the same. Under this alternative, grazing would occur both early and late two out of four years. The option of increasing use by 33 AUMs only applies to the late season treatment. The same benefits to riparian areas from early and late season grazing (described above in the proposed action) would apply to this alternative. An interdisciplinary team would make a determination on whether to issue TNR use based on resource impacts. This interdisciplinary approach would provide an additional measure to ensure that TNR would not adversely impact riparian areas.

## **Range Improvement Options Applicable to Alternatives 2 and 3**

Riley field is the only pasture with riparian areas.

Water Pipeline Extension- This proposed range improvements would not occur within Riley Field. This proposed action would not have any impacts on riparian areas within the Frost Creek Allotment.

Fuels Reduction and Habitat Enhancement Treatment (Native Pasture) - This proposed range improvements would not occur within Riley Field. This proposed action would not have any impacts on riparian areas within the Frost Creek Allotment.

Mowing and Interseeding Crested Wheatgrass Pastures- Adhering to the special design features (section 2.5.5) and environmental design and resource protection (section 2.7) features during project implementation would prevent any negative impacts to riparian areas within the Frost Creek Allotment.

## **Cumulative Impacts**

The Cumulative Effects Study Areas (CESA) is the Huntington watershed. Major PPRFFA's are historic grazing and wildfires. There are no cumulative impacts of concern for the proposed alternatives, no action alternative, and range improvements.

## **3.2.6 Wildlife Including Special Status Species and Migratory Birds**

### **Affected Environment**

This allotment provides habitat for a diversity of wildlife species, including: mule deer, antelope, and numerous species of upland game birds, small mammals, passerine birds, waterfowl, raptors, amphibians, reptiles, and invertebrates. The June 2009 Standards and Guidelines Assessment concluded that current livestock grazing within the Frost Creek Allotment was in conformance with all Standards and Guidelines; including Standard 3 (Habitat). The Habitat Standard however was only partially met in large part due to the poor ecological condition of the native pasture.

## Frost Creek Allotment Grazing Permit Renewal and AMP

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### Special Status Species

Special status species include species that are listed or proposed for listing as threatened or endangered (T&E) under the Endangered Species Act (ESA), species that are candidates for listing under the ESA, species that are listed by the State of Nevada, and/or species that are on Nevada BLM's list of Sensitive Species as of July 29, 2003.

The greater sage grouse is a candidate species as of March 5, 2010 (see paragraph and footnote below). The area provides habitat for sixteen avian and mammalian Nevada BLM Sensitive Species on a seasonal or yearlong basis including loggerhead shrike, burrowing owls, bald eagles, golden eagles, Swainson's hawks, ferruginous hawks, vesper sparrows, short-eared owls, prairie falcons, black-rosy finches, pinyon jay, juniper titmouse, pygmy rabbits and three bat species. Additional information on these species can be found in Appendix H of the June 2009 Standards and Guidelines Assessment.

On March 5, 2010, the U.S. Fish and Wildlife Service announced Proposed Rules\* in the Federal Register for the notice of 12-month findings for petitions to list the greater sage grouse as a threatened or endangered species. The Fact Sheet for this finding iterated the following, *"After thoroughly analyzing the best scientific and commercial information available, the Fish and Wildlife Service has concluded that the greater sage-grouse warrants protection under the Endangered Species Act. However, the Service has determined that proposing the species for protection is precluded by the need to take action on other species facing more immediate and severe extinction threats. As a result, the sage-grouse will be added to the list of species that are candidates for Endangered Species Act protection. The Service will review the status of the sage-grouse annually, as we do all candidate species, to determine whether it warrants more immediate attention."* The Proposed Rules were formally announced in the Federal Register on March 23, 2010 under the following reference: **13910 Federal Register** / Vol. 75, No. 55 / Tuesday, March 23, 2010 / Proposed Rules.

[\* The following is stated for this finding in the Federal Register notice, *"This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules."*]

### Bald Eagle

On July 9, 2007, it was announced that the bald eagle has been removed ("de-listed") from the list of threatened and endangered species<sup>1</sup>. BLM is coordinating with the Nevada Department of Wildlife (NDOW) to ensure compliance with state regulations regarding the bald eagle. As of August 30, 2007, BLM policy is to consider the bald eagle as a BLM Sensitive Species. Bald eagles may use the area due to the proximity to winter foraging areas. Suitable habitat on uplands, irrigated lands and riparian areas is widely dispersed over tens of thousands of acres throughout the Elko District.

<sup>1</sup>After de-listing, bald eagles will continue to be protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act. Both of these laws prohibit killing, selling or otherwise harming eagles, their nests, or their eggs. In June 2007, the Service clarified its regulations implementing the BGEPA and published the National Bald Eagle Management Guidelines.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## *Other Migratory Birds*

In addition to those protections offered to certain migratory birds that are considered Nevada BLM Sensitive Species, all migratory birds are offered certain protections under the Migratory Bird Treaty Act and Presidential Executive Order. On January 11, 2001, President Clinton signed the Migratory Bird Executive Order. This Executive Order outlines the responsibilities of Federal agencies to protect migratory birds and directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act. A list of the migratory birds affected by the President's executive order is contained in 50 CFR 10.13. And further referenced in Appendix G of the June 2009 Standards and Guidelines Assessment.

## **Direct and Indirect Effects of Alternatives**

Regarding analysis of the effects shown below for Alternatives 1-3 and Range Improvement Options Applicable to Alternatives 2 and 3, sage grouse are considered to be an “umbrella species” for species that inhabit sagebrush vegetation types on the allotment on a seasonal or yearlong basis. Positive or negative effects to sage grouse habitat would generally have similar effects to the habitat of other wildlife species including the prey species of predatory birds and mammals. “Featured species” including mule deer and pygmy rabbits and EA elements including Special Status Species bats and Migratory Birds are discussed in more detail.

## **Alternative 1 -1994 Grazing System (No Action Alternative)**

The 1994 grazing system provides for a season of use from 4/15 – 10/1 on an annual basis. The system was designed to enhance riparian areas within the Frost Creek Allotment (Pearl Creek and Frost Creek) and maximize use on the crested wheatgrass seeding areas. All pastures (native and seeded) except the Corral Canyon Pasture would have a use period of approximately one month during the critical growing period.

Based on the lack of rest provided during the critical growing period in the uplands proposed under this alternative, it is expected that vegetative diversity would not improve (especially in the native pasture) and that plant vigor would be reduced due to re-occurring critical growing season use. Upland habitat conditions would likely decline as exhibited by a decrease in the composition and cover of perennial native forbs and grasses. The Riley Field would be grazed early every year which would result in no hot season use. Riparian habitat is expected to remain in the current condition or improve under this alternative and would provide suitable habitat for all wildlife species.

Shrub foliar cover values (16 percent in 2005) would continue to provide over-story cover for sage grouse habitat on the Jiggs Flat (Native) Pasture. However, the present composition and height of perennial grasses and forbs in the native pasture would not provide adequate understory cover including lateral nesting cover and early brood-rearing cover for sage grouse.

Shrub cover would also continue to be provided on the crested wheatgrass seeding pastures at variable foliar cover percentages estimated at 15 percent or less in 2009. This would provide cover needed for sage grouse seasonal use areas including nesting, summer/brood-rearing, and winter habitat. Light use on crested wheatgrass that occurred between 1987 and 2008 would help to provide herbaceous cover, including lateral nesting cover for sage grouse as well as residual cover for the following year. However, forb composition and diversity would likely

## Frost Creek Allotment Grazing Permit Renewal and AMP

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continue to be limited, as estimated in 2009. Riparian studies on Pearl Creek within the Riley Pasture indicate that a functional riparian zone exists under the early season grazing prescription. This would help to provide satisfactory summer/late brood-rearing habitat for sage grouse.

Big sagebrush would continue to provide shrub cover for mule deer. Herbaceous plant cover and forage diversity would continue to be limited for mule deer intermediate (spring and fall) range as indicated by the relative composition of perennial grasses and forbs. Ecological status of the ecological site would continue to reflect poor plant forage and cover diversity.

The season of use identified under the 1994 grazing system (4/15 – 10/1) potentially concentrates livestock during critical nesting periods for migratory birds, both ground and shrub-nesting species on an annual basis. This could cause nest displacement or destruction in some instances by direct impacts from livestock. Livestock grazing during nesting periods on an annual basis could include reduced nest success for migratory birds as a result of reduced nest cover.

The shrub cover and current observed light utilization levels would help to provide forage and cover for pygmy rabbits. However, the limited availability of perennial grasses and forbs, that stay succulent on the native pasture after the mid-May period, affects the potential availability of uncured herbaceous forage for pygmy rabbits.

Sagebrush habitats in conjunction with riparian and developed water sources would continue to provide habitat for insects and, in turn, could provide foraging habitat and water sources for bats within the allotment. Juniper woodlands would continue to provide potential roosting habitat for long-legged myotis (bat).

### **Alternative 2 – Proposed Action**

The grazing system for the native pasture proposes early or late use with no use during the critical growing period by cattle on native key perennial grasses. Deferment (after 7/15) would occur two out of four years. A decrease in AUMs is proposed due to the limited diversity of perennial herbaceous vegetation and poor ecological condition. The seeded pastures would be deferred during the critical growing period once every three to five years.

Under this alternative, the Riley Pasture (riparian) would be grazed early or late (4/1 to 6/1 or 10/1 to 12/15). There is no hot season use proposed. Riparian habitat is expected to remain in the current condition or improve under this alternative and would help provide suitable habitat for all wildlife species including late brooding habitat for sage grouse and prey species for raptors, including bald and golden eagles. Livestock would not be present during the sage grouse late brooding-rearing period.

Rest during the critical growing period is expected to maintain or improve native perennial grass and forb composition within the Jiggs Flat Native Pasture.

The utilization objective for the native pasture is not to exceed a maximum of 50 percent on native key grass species on an annual basis. Utilization observed at the current stocking levels has resulted in light utilization levels on average (21-40 percent) on key perennial herbaceous species and is expected to continue with little change based on the proposed reduction in AUMs.

## Frost Creek Allotment Grazing Permit Renewal and AMP

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Light utilization is expected to leave 60 to 80 percent of the seed stalks intact which would provide needed cover values for wildlife foraging and nesting needs.

The utilization objective on crested wheatgrass would be an average of 50 percent utilization not to exceed 60 percent utilization in any given year. Monitoring data shows that on average, light use (36%) has occurred on the crested wheatgrass pastures with the current stocking levels. The 14 percent increase proposed for the seedings is expected to result in light to moderate utilization levels (21-60 percent). Light to moderate utilization is expected to leave 15 to 80 percent of the seed stalks intact and result in an average of 3.5 to 10 inches of vertical herbaceous cover remaining to provide cover for wildlife foraging and nesting needs.

Deferring livestock grazing during the critical growing period (5/1-7/15) on the native pasture and providing critical growing period deferment for the seeded pastures (one pasture would be deferred until 7/15, after seed ripe every year) results in areas on the allotment that would not have livestock present during key nesting and fawning periods. In those pastures there would be no possibility of direct disturbance to nesting birds from cattle. In addition all of the current year's vegetative growth as well as the previous year's residual cover would be available to provide lateral nesting cover and is expected to enhance nesting success for sage grouse and migratory birds.

### **Alternative 3 – Temporary Non-Renewable Use (TNR)**

This alternative would have similar effects to wildlife as described for Alternative 2 above. Under this alternative, utilization levels would not exceed the utilization objectives stated in Alternative 2. Lateral herbaceous nesting cover provided by crested wheatgrass would likely average over seven inches in height during the sage grouse nesting season, as recommended in the WAFWA guidelines, prior to any proposed issuance of TNR. Limiting TNR to post-nesting periods (after 6/1) for sage grouse is expected to continue to result in light use (21-40%), or less use, which is currently being observed under current stocking levels in those pastures that are grazed during sage grouse nesting periods (4/1 – 6/1). Monitoring data indicates that the average height of ungrazed crested wheatgrass plants is 22 inches on the allotment. This light use at 21 to 40% would result in an average of approximately 6.5 to 10 inches of herbaceous lateral cover that would be available to provide continuous current year's cover for sage grouse after June 1, which is after the vast majority of nesting has taken place. It would also help provide early (upland) brood-rearing cover.

The majority of the late brooding habitat is expected to occur along Frost and Pearl creeks in the Riley Pasture. Under this alternative, TNR could occur every other year post brood rearing for sage grouse.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **Range Improvement Options Applicable to Alternatives 2 and 3**

The proposed treatment actions analyzed below under *Range Improvement Options Applicable to Alternatives 2 and 3* would help to enhance and protect habitat for wildlife species that inhabit sagebrush habitat on a seasonal or yearlong basis.

### Water Pipeline Extension (including water troughs)

The water pipeline extension and troughs would provide additional water sources for sage grouse, mule deer, migratory birds, special status species bats, and other wildlife species that seek free sources of water. Limited habitat impacts are expected as a result of construction of the proposed pipeline and troughs. The incorporation of wildlife escape ramps in the proposed troughs is expected to minimize mortality to wildlife from drowning. The pipeline would be buried along an existing road and the troughs would be placed in close proximity of the roads (within 50 feet).

### Vegetation treatments in the native and the seeding pastures

The mechanical treatment would reduce shrub foliar cover in the native pasture followed by seeding with primarily native perennial herbaceous species to increase forage diversity and herbaceous cover for wildlife species. Shrub cover would remain in strips, islands or mosaics within the untreated areas. Shrubs on the outer edge of these untreated areas could respond to reduced competition for space, soil nutrients and water which could further result in increased leader growth and flowering. This would allow for a wider variety and potential selection of sagebrush cover and forage for wildlife species that utilize sagebrush. An increase in sagebrush flower and leader growth has been observed on the edge of past treatment projects on the Elko District.

Some species of migratory birds, including those designated as Special Status Species (e.g. burrowing owl), could be attracted to areas with reduced shrub cover. For some migratory bird species, brush removal could result in those species relocating to adjacent habitats which would increase population in those areas. However, most habitat areas are likely at their respective carrying capacities for given species so animals could be temporarily lost from given populations. Depending on variables such as species, behavior, density, and habitat, adjacent populations might experience increased mortality, decreased reproductive rates, or other adverse responses. Species most likely to be affected are shrub-dependent passerine (perching) birds. Mechanical treatments would be planned for the fall which would result in no direct impacts to nesting migratory birds. Successful seeding efforts with a variety of perennial grasses and forbs could provide enhanced insect habitat and areas with available seeds or flowers which in turn would provide enhanced foraging areas for many migratory bird species and bats.

Disking operations would be proposed to reduce cheatgrass seed in the native pasture by disking it to a depth of 6-8 inches under the ground in the spring period prior to the "purple stage" (viable seed) of seed development and initiation of nesting by migratory birds and sage grouse. Disking would also be completed in the seeding to reduce crested wheatgrass dominance and create a suitable seedbed for native forbs and grasses. Disking would also create microclimates and would trap moisture, thereby increasing the success of seeding efforts. Pygmy rabbits (See

## Frost Creek Allotment Grazing Permit Renewal and AMP

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2.5.5 Proposed Special Design Features – Habitat Protection) and other ground-dwelling animals would be mobile and likely avoid the area while disking operations are in progress.

Herbicide treatment as a follow-up to mechanical treatments would help to protect or maintain wildlife habitat including sage grouse habitat. The use of the herbicide Imazapic to create and maintain linear fuel breaks would help to protect thousands of acres of intact sage grouse habitat as well as protect those wildlife habitat areas that have successfully been rehabilitated in the South Fork Sage Grouse PMU area after recent wildfires. It is anticipated that the use of herbicides and mechanical methods would have short term direct impacts on sage grouse habitat (bare ground after initial treatment). Direct spray of Imazapic is not likely to pose a risk to sage grouse or other wildlife species. Herbicide use would benefit habitat by controlling invasive plant species and promoting the establishment and growth of native plant or seeded species that increase forage and cover diversity for wildlife seasonal use needs.

Seeding of perennial grass and forb species within the native pasture would be necessary to reduce cheatgrass and increase perennial herbaceous vegetation. Emphasis would be considered for seeding native plant species and species that are relatively succulent during all or part of the summer period to allow for linear vegetated fuel breaks with limited over-story vegetation. The establishment of seeded species would increase herbaceous forage and cover diversity for wildlife seasonal use needs. Shrub species such as big sagebrush and rabbitbrush would likely naturally establish on the treated areas on the native pasture in the long term (by 2020). Long term maintenance of the treatment areas in the native pasture would be considered to reduce shrub cover on a site specific basis.

Reduced shrub foliar cover on the native pasture, coupled with successful seeding efforts would help to slow down or stop potential catastrophic wildfires within crucial wildlife habitat areas and would help for fire suppression efforts.

The establishment of seeded species would increase herbaceous forage and cover diversity for wildlife seasonal use needs on the long-established crested wheatgrass seeding pastures. Successful big sagebrush seeding efforts on these crested wheatgrass pastures would help to provide shrub cover which would in turn provide over-story cover for sage grouse and other wildlife that inhabit sagebrush habitat.

### **Cumulative Impacts**

Historic livestock grazing practices have resulted in negative impacts to habitat relative to changes in plant composition on native range areas. Efforts to increase forage production by type-conversions from native sagebrush grasslands to crested wheatgrass seeding areas have had negative impacts to shrub and for cover. However, many of the same seeding areas presently have a sagebrush component that has reestablished since previous treatment with shrub foliar cover values that help to provide suitable sage grouse nesting cover. These seeding areas could provide a positive impact for nesting cover where more suitable (potential lateral cover provided by crested wheatgrass) for special status species compared to native range areas with limited perennial herbaceous cover. The presence of dispersed cattle throughout the CESA on any grazing allotments at a specific time could result in “minor” degrees of wildlife displacement. In addition, wildfires have historically had a negative impact on wildlife habitat within the CESA.

## Frost Creek Allotment Grazing Permit Renewal and AMP

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The impacts of the alternatives 2 and 3 as well as the proposed range improvements would likely be beneficial to wildlife, special status species, and migratory birds. As a result there are no cumulative impacts of concern.

Mechanical treatments (e.g. mowing) and seeding in conjunction with a policy to aggressively fight wildfire in high value areas of the CESA would cumulatively result in fewer impacts to wildlife habitat values within the CESA. There are no cumulative impacts of concern related to the proposed herbicide treatment and the proposed construction of pipeline/troughs.

Because the No Action alternative would continue degradation of habitat, in conjunction with the potential of wildfires, the damage from historic grazing, along with disturbances from increasing recreation use and such things as oil and gas exploration, there is a real concern about the negative cumulative impacts to wildlife.

### 3.2.7 Visual Resources

#### Affected Environment

The Frost Creek Allotment falls within Interim Visual Resource Management (VRM) Classes III and IV. For Class III areas, the objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Within Class III VRM areas, management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Within Class IV areas, the objective is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Within Class IV VRM areas, management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The characteristic landscape consists of a panoramic view with rolling hills in the forefront the mountains in the background. The vegetation is smooth in character with seasonal color variations of yellow, tan and brown of mostly grasses. Manmade features in the area include two track roads, fences and spring developments.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **Direct and Indirect Effects of Alternatives**

### **Alternatives 1-3**

Implementation of alternatives 1-3 (current grazing and proposed changes in grazing use) are likely to have minimal surface disturbing impacts and would not have an effect on visual resources. Alternatives 1-3 would meet VRM Class III and IV objectives.

### **Range Improvement Options Applicable to Alternatives 2 and 3**

Implementation of disking, herbicide use, seeding, and mowing in a mosaic pattern would have minimal visual impacts on the landscape. The treatments would only be visible within a short distance. Installation of the pipeline would be in an area already disturbed and would not detract from the view of the casual observer. However, the watering troughs, depending on color, could have a minor visual impact. Use of the special design feature discussed in section 2.5.5 of this document would minimize visual impacts and would be in compliance with objectives for VRM Class III & IV.

### **Cumulative Impacts**

There would be no cumulative impacts of concern.

## **3.2.8 Cultural Resources**

### **Affected Environment**

Less than 1% of the allotment has been inventoried or surveyed for cultural resources. Most of the 15 inventories were completed during seismic exploration in the 1970-80s and are known to be unreliable: Many sites were missed or went unrecorded, especially historic ones. Information from inventories in adjacent areas indicate that site densities are relatively low (1.8 sites/sq.mile) and historic properties (i.e., sites eligible for the National Register of Historic Places) are rare. The three documented sites within the allotment are located on ridges within or near the juniper woodlands, but none of them would qualify as historic properties. During a two-day reconnaissance in May 2009, a BLM archaeologist walked over the most likely locations for archaeological sites and examined some of the existing range improvements. No additional cultural resources were located. A revisit to one of the known sites confirmed that it remains little changed since it was documented about 30 years ago. One of the previously located sites was not found again, and the third appears to have been destroyed during road maintenance. The historic stage/wagon road following the County Road that bisects the allotment from north to south has been graded and graveled so that it no longer has any integrity and does not contribute to the overall eligibility of this road (site 26EK2388/2389).

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **Direct and Indirect Effects of Alternatives**

### **Alternative 1 – 1994 FMUD Grazing System (No Action)**

There would be no new effect to cultural resources under the 1994 Grazing System alternative.

### **Alternative 2 – Proposed Action**

Increasing AUMs in the six crested wheat grass seedings is unlikely to have a substantial effect on cultural resources given the low density of archaeological sites, especially within the seedings and away from juniper woodlands. Rangeland plows usually penetrate the upper six to ten inches of the soil impacting and mixing cultural resources. However, some spatial integrity can still be retained within the plow-zone, and more intact archaeological deposits and features may remain at greater depths. Grazing has minimal effects to cultural resources so long as the intensity remains relatively low and evenly dispersed. A decrease in AUMs on the Jiggs Flat Native Pasture is likely to result in less trampling to cultural resources. Conditions of cultural resources in the Riley pasture where no change in grazing is to occur will probably remain the same or continue to slowly deteriorate.

### **Alternative 3 – Temporary Non Renewable Use (TNR)**

Effects are similar to proposed action.

## **Range Improvement Options Applicable to Alternatives 2 and 3**

As part of the cultural resource inventories prior to the implementation of the proposed pipeline extension, mechanical treatments, seedings, and herbicide use shall include the excavation of shovel tests or probes designed to evaluate the integrity of archaeological sites that are within the earlier (1960s) seedings. Herbicide might affect the ability to obtain accurate radiocarbon dates. If the sites still have integrity they will need to be documented and avoided during the implementation and maintenance of the proposed range improvements. Development of the pipeline and improvement of grazing conditions within the pastures is likely to decrease the impacts of grazing upon cultural resources by better distributing grazing impacts.

## **Cumulative Impacts**

Few of the existing grazing improvements were inventoried for cultural resources prior to their installation. Many of them were visited during the archaeological reconnaissance and due to the absence of cultural resources, no impacts were observed. As new range improvements or modifications to existing ones are proposed, the BLM would ensure compliance with Section 106 of the National Historic Preservation Act. Historic properties would be avoided or mitigated by an approved treatment plan prior to implementation of projects, resulting in a final determination of “no adverse effect” to cultural resources for all alternatives including the proposed range improvement as well as the No Action alternative. BLM would also conduct periodic monitoring within the allotment to evaluate on-going and cumulative impacts to cultural resources arising from grazing, recreation, other visitation, and unauthorized artifact collection. Based on the monitoring results, some alterations in grazing and improvement projects and other actions to preserve and protect cultural resources may be needed.

## 3.2.9 Health and Safety

### Affected Environment

Human health and safety was evaluated in the 2007 Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (BLM 2007). The EIS identified two possible receptors to exposure to herbicides: occupational receptors, and public receptors. Occupational receptors would be limited to those who workers who mix, load, and apply herbicides. Public receptors would be limited to members of the public most likely to come in contact with the herbicides, i.e. ranchers, hunters, etc.

### Direct and Indirect Effects of Alternatives

#### Alternatives 1-3

For alternatives 1-3, no herbicide use is proposed; therefore, there would be no risk or exposure of herbicides to workers or the general public.

#### Range Improvement Options Applicable to Alternatives 2 and 3

Direct impacts as the result of herbicide application may include rashes and/or chemical burns. The chance of exposure would be minimized by workers wearing proper personal protective equipment (PPE). Material Data Safety Sheets (MSDS) would be kept at the job site, and any spills would be cleaned up following appropriate guidelines.

There are always some human health risks when using herbicides. Risks range from disease, injury, and cancer. Chance of exposure will be limited to the personnel applying the herbicides with some small chance of exposure to the general public. The chance of exposure would be minimized by workers wearing proper PPE, establishing appropriate buffer zones, posting treated areas with signs in common public access areas, and notifying the public of the potential exposure.

### Cumulative Impacts

There are no related past, present or foreseeable future impacts to health and safety to disclose that are relevant to any of the alternatives.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## **3.3 MITIGATION AND MONITORING**

Rangeland monitoring data would continue to be collected for the Frost Creek Allotment to determine if the livestock management practices as authorized by this permit renewal are conforming to the Standards and Guidelines for Rangeland Health and other vegetative and multiple use objectives for the allotment. Monitoring and data collection would continue in the form of establishing key areas, measuring utilization levels, ecological condition, vegetative cover, frequency trend, observed apparent trend, actual use reports, climate studies, professional observation, photos, and compliance checks. Monitoring would also continue according to broad watershed assessment of the Huntington Valley. There are no proposed mitigation measures.

## **4. CONSULTATION AND COORDINATION**

### **4.1 PERSONS, GROUPS OR AGENCIES CONSULTED**

In 2002, the BLM mailed the following documents to the livestock permittee and members of the interested public requesting input in developing livestock management strategies on the Frost Creek Allotment:

Draft Standards and Guidelines Assessment and a Proposed Multiple Use Decision (PMUD) revising the District Manager's 1994 Final Multiple Use Decision. After issuance of these documents the BLM received a letter of protest to the 2002 PMUD from the Committee for Idaho's High Desert and Western Watersheds Project. No other comment letters were received after the issuance of the two documents in 2002.

In 2007 and 2009, the BLM mailed updated Standards and Guidelines Assessments to the permittees and interested public. These assessments included new information collected since 2002 and developed possible grazing management alternatives for the allotment.

Various comments were received after the BLM issued the 2007 and 2009 Standards and Guidelines Assessments. A comment letter was received from the Elko Board of County Commissioners in July of 2007 and again in July of 2009. The Nevada State Clearing House submitted a comment letter in July of 2009. Also in July of 2009, the BLM received a comment letter from Western Watersheds Project. The comments were reviewed by the BLM through an interdisciplinary process and were incorporated in the appropriate sections.

A personal communication occurred, via telephone, with Nevada Department of Wildlife's Fish Biologist Alan Jenne on January 5, 2009. Mr. Jenne was consulted regarding the presence on Lahontan Cutthroat Trout in the Frost Creek Allotment. He informed the BLM that LCT are not present within the allotment and that the habitat is not suitable to support LCT populations.

Email correspondence with Charlie D. Clements, Rangeland Scientist, USDA-ARS and Ed Vasquez, PH.D., Research Rangeland Management Specialist, USDA, ARS, regarding herbicide use to control cheatgrass, was reviewed and incorporated into this EA.

# Frost Creek Allotment Grazing Permit Renewal and AMP

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A project report completed by Kent McAdoo, Associate Professor/Natural Resources Specialist, CWB, CPRM, and University of Nevada Cooperative Extension discussing treatment strategies for crested wheatgrass seeding was reviewed and incorporated into this EA. The report is included in Appendix B.

## 4.2 Preparers

Justin Rodgers – Project Lead, Livestock Grazing and Vegetation  
Kirk Laird - NEPA Coordination  
Bill Fawcett - Cultural Resources  
Mark Dean - Soil, Air, and Water  
Carol Evans/Russ Miller – Wetlands and Riparian Areas  
Ken Wilkinson - Wildlife, Migratory Birds, BLM Special Status Species  
Zach Pratt - Visual Resources  
Mark Coca/Tyson Gripp – Invasive, Nonnative Species

## 4.3 Distribution

Prior to issuance of any decision to implement the action alternatives, this EA will be available for comment on the BLM public web site at:

[http://www.blm.gov/nv/st/en/fo/elko\\_field\\_office/blm\\_information/nepa.html](http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_information/nepa.html)

# Frost Creek Allotment Grazing Permit Renewal and AMP

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## Literature Cited

- Alevy, Jonathan, et. al. Analysis of Impacts of Public Land Grazing on the Elko County Economy: Part III: Economic Impacts of Federal Grazing in Elko County. University of Nevada, Reno, Technical Report UCED 2006/07-03. 2007.
- Baker, L. William; Garner, Jim; Lyon, Peggy, 2009. Effect of Imazapic on Cheatgrass and Native Plants in Wyoming Big Sagebrush Restoration for Gunnison Sage-grouse. *Natural Areas Journal* 29(3): 204-209.
- Braun, C.E., 2006. A blueprint for sage-grouse conservation and recovery. Grouse, Inc.
- Bureau of Land Management, 1984. BLM Manual Handbook 8406, Visual Resource Monitoring. US Department of the Interior, Bureau of Land Management, April 5, 1984.
- Bureau of Land Management, 1987. Elko Resource Area Draft Resource Management Plan and Environmental Impact Statement. US Department of the Interior, Bureau of Land Management, Elko District Office.
- Bureau of Land Management, 1987. Elko Resource Management Plan Record of Decision. US Department of the Interior, Bureau of Land Management, Elko District Office.
- Bureau of Land Management, 2008. National Environmental Policy Act Handbook H-1790-1. US Department of the Interior, Bureau of Land Management, January, 2008.
- Bureau of Land Management, 2007. Burned Area Emergency Stabilization and Rehabilitation Handbook H-1742-1. US Department of the Interior, Bureau of Land Management, February, 2007
- Blackburn, W.W. 1983. Influence of brush control on hydrologic characteristics of range watersheds. In proceedings of brush management symposium, ed. K.C. McDaniel. 73-78. Denver, CO: Society for Range Management.
- BLM. 2000. Invasive-Nonnative Vegetation Treatments on Bureau of Land Management Lands. (BLM/EK/PL-2000/029). Elko, Nevada.
- BLM. 2007. Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement. Washington DC. [www.blm.gov](http://www.blm.gov)
- Connelly J.W. et al. 2000. *Guidelines to manage sage grouse populations and their habitats*. *Wildlife Society Bulletin* 2000, 28(4): 967-985.
- Fadali, Elizabeth, et. al. Analysis of Impacts of Public Land Grazing on the Elko County Economy: Part VI: Executive Summary. University of Nevada-Reno Technical Report UCED 2006/07-09. 2009.

## Frost Creek Allotment Grazing Permit Renewal and AMP

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- Fadali, Elizabeth, and Thomas R. Harris. Estimated Economic Impacts of the Cattle Ranching and Farming Sector on the Elko County Economy. University of Nevada-Reno Technical Report UCED 2005/06-26. 2006.
- Harris, Thomas R., et. al. Analysis of Impacts of Public Land Grazing on the Elko County Economy: Part V: An Economic Description of the Agricultural Sector and Range Livestock Sector in Elko County. University of Nevada Reno Technical Report UCED-2006/07-05. 2007.
- Holechek, Jerry L. 1981. Crested Wheatgrass. Source: Rangelands, Vol. 3, N0. 4 (Aug., 1981), pp. 151-153.
- Horton, L. E., and Weissert, Richard H. Relationship of Utilization Intensity to Plant Vigor in a Crested Wheatgrass Seeding. Source: Journal of Range Management, Vol. 23, No. 4 (Jul., 1970), pp. 298-300.
- Leonard, Steve, and others. 1997. Riparian area management. Grazing management for riparian-wetland areas. Tech. Ref. 1737-14. Bureau of Land Management, National Applied Resources Center, Denver, CO.
- Pellant, M., P. Shaver, D.A. Pyke, and J.E. Herrick. 2005. Interpreting indicators of rangeland health, version 4. Technical Reference 1734-6. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. BLM/WO/ST-00/001+1734/REV05. 122 pp.
- Riggs, William, and martin Owens. Economic Development- 2002 Elko County Agriculture Statistics. University of Nevada-Reno Cooperative Extension Fact Sheet 03-61.
- Winward, A.H. 1991. A renewed commitment to management of sagebrush grasslands. Management in the sagebrush steppe. Oregon St. Univ., Agric. Exp. Stn. Special Report 880