

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

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**Preliminary Environmental Assessment**

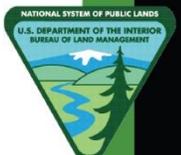
**DOI-BLM-NV-L030-2015-0018-EA**

July 19, 2016

Permit Renewal for Lyle and Ruth Whiteside (#2703298) on the Lower Riggs Allotment (#01087), and Richard and Meredith Rankin (#2704063) on the Lower Riggs and Boulder Spring (#21009) Allotments

*Lincoln County, Nevada*

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## **1.0 Introduction**

This document identifies issues, analyzes alternatives, and discloses the potential environmental impacts associated with the proposed term grazing permit renewals for Lyle and Ruth Whiteside (#2703298) on the Lower Riggs Allotment (#01087), and Richard and Meredith Rankin (#2704063) on the Lower Riggs and Boulder Spring (#21009) Allotments.

All posted acreage figures were determined using the Bureau of Land Management's Geographic Information System.

### **1.1 Background**

The Lower Riggs and Boulder Spring Allotments are located approximately 40 miles south of Caliente, Nevada, in the east-central portion of Lincoln County (Appendix I, Map #1). Cattle are the type of livestock grazed on the allotments.

Current management practices are a reflection of Best Management Practices (BMPs) as coordinated between the permittee and the appropriate Bureau of Land Management (BLM) Range Management Specialist.

### **1.2 Introduction of the Proposed Action.**

The BLM, Caliente Field Office, proposes to renew both of the term grazing permits on the Lower Riggs and Boulder Spring Allotments.

Standards and Guidelines for Grazing Administration were developed by the Mojave-Southern Great Basin Resource Advisory Council (RAC) and approved by the Secretary of the Interior on February 12, 1997. Changes to grazing management are recommended which would establish Best Management Practices (BMPs) within the allotment. Such BMPs would assist in maintaining these Standards, particularly in the unburned portions of the allotment.

The BLM collected and analyzed monitoring data, and conducted professional field observations, as part of the permit renewal process. This information was used to evaluate livestock grazing management and rangeland health within both allotments. Subsequently, an evaluation of rangeland health along with recommendations associated with grazing management practices, in the form of a Standards Determination Document (SDD), was completed on September 25, 2015 (Appendix II). A summary of the RAC Standards assessment is found in Table 1.2.

**Table 1.2 Summary of Assessment of the Mojave-Southern Great Basin Area Standards for the Lower Riggs and Boulder Spring Allotments.**

Standard	Status	
	Burned Portions of Allotments	Unburned Portions of Allotment
<b>1. Soils</b>	Not Achieved	Achieved
<b>2. Riparian and Wetland Sites Standard</b>	Uplands – Not Achieved	Upland – Achieved Uplands Associated with Riparian Zones – Achieved Riparian Zones (Lotic) – Achieved
<b>3. Habitat and Biota Standard</b>	Not Achieved	Achieved

### **1.3 Need for the Proposed Action.**

The need for the Proposed Action is to authorize grazing use on public lands in a manner which satisfies the Federal Land Policy and Management Act (FLPMA) (1976) and the Wilderness Act of 1964 while being consistent with multiple use, sustained yield and the Nevada’s Mojave-Southern Great Basin Area Standards for Rangeland Health; to manage livestock in accordance with all applicable laws, regulations, and policies; to manage livestock in conformance with the Ely District Record of Decision and Approved Resource Management Plan (Ely RMP) (August 2008); to renew the term grazing permits for Lyle and Ruth Whiteside on the Lower Riggs Allotment, and Richard and Meredith Rankin on the Lower Riggs and Boulder Spring Allotments; and to incorporate BMPs, specific (mandatory) terms and conditions, and other terms and conditions into the permits that are directed toward maintaining all applicable Standards and Guidelines in the unburned portions of the allotments.

An additional need for the Proposed Action is to change the Season of Use on the Lower Riggs Allotment in an effort to make use of forage which has an extremely limited palatability window. This will help in providing better cattle distribution, while reducing the potential for negative grazing impacts on the soil and plant resource.

#### **1.3.1 Objectives for the Proposed Action.**

To renew the term grazing permit for Lyle and Ruth Whiteside Richard and Meredith Rankin; while authorizing grazing in accordance with applicable laws, regulations, and land use plans (LUPs) on 17,275 acres of public land.

- To improve/maintain vegetative health and growth conditions on the allotment while either making progress toward or maintaining achievement of the Standards and Guidelines for rangeland health as approved and published by Mojave-Southern Great Basin RAC.

## 1.4 Relationship to Planning

The Proposed Action is in conformance with the Ely District Record of Decision and Approved Resource Management Plan (Ely RMP) (August 2008), which states as a goal (p. 85): “Manage livestock grazing on public lands to provide for a level of livestock grazing consistent with multiple use, sustained yield, and watershed function and health.” It further states as an objective (p. 86): “To allow livestock grazing to occur in a manner and at levels consistent with multiple use, sustained yield, and the standards for rangeland health.”

Management Action LG-1 states, “Make approximately 11,246,900 acres and 545,267 animal unit months available for livestock grazing on a long-term basis.”

Management Action LG-3 states, “Allow allotments or portions of allotments within desert tortoise habitat, but outside of Areas of Critical Environmental Concern (ACECs) to remain at current stocking levels unless a subsequent evaluation indicates a need to change the stocking level.”

Management Action LG-5 states: “Maintain the current grazing preference, season-of-use, and kind of livestock until the allotments that have not been evaluated for meeting or making progress toward meeting the standards or are in conformance with the policies are evaluated. Depending on the results of the standards assessment, maintain or modify grazing preference, seasons-of-use, kind of livestock and grazing management practices to achieve the standards for rangeland health. Changes, such as improved livestock management, new range improvement projects, and changes in the amount and kinds of forage permanently available for livestock use, can lead to changes in preference, authorized season-of-use, or kind of livestock. Ensure changes continue to meet the Ely RMP goals and objectives, including the standards for rangeland health.”

Management Action LG-8 states, “Implement management actions for desert tortoise habitat contained in the 2008 Biological Opinion.”

## 1.5 Relationship to Other Plans

The Proposed Action was analyzed within the scope of the *Revised Recovery Plan for the Mojave Population of the Desert Tortoise (Gopherus agassizii)* and found to be in compliance (U.S. Fish and Wildlife Service 2011).

The Proposed Action is also consistent with the *Lincoln County Public Lands Policy Plan* (2010) which states (p. 38):

**“Policy 4-4:** Grazing should utilize sound adaptive management practices consistent with the BLM Mojave-Southern Great Basin Resource Advisory Council’s Standards and Guidelines for Grazing Administration. Lincoln County supports the periodic updating of the Nevada Rangeland Monitoring Handbook to help establish proper levels of grazing. Lincoln County supports accountability between BLM and Lincoln County Commission to assure these management practices are carried out in a timely and professional manner.

**Policy 4-5:** Allotment management strategies should be developed that provide incentives to optimize stewardship by the permittee. Flexibility should be given to the permittee to reach condition standards for the range. Monitoring should utilize all science-based relevant studies, as described in the current Nevada Rangeland Monitoring Handbook. Changes to these standards should involve pre-planning collaborative consultation with the permittee and Lincoln County Commission.”

## **1.6 Relationship to Acts, Executive Orders and Agreements**

The Proposed Action was analyzed within the scope of other relevant Acts, Executive Orders and associated regulations, Agreements and Guidance listed below and found to be in compliance:

- State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada State Historic Preservation Office for Implementing the National Historic Preservation Act (Revised January 2012)
- National Historic Preservation Act (1966) (Public Law 89-665; 16 U.S.C. 470 as amended through 2000)
- Archaeological Resources Protection Act (ARPA) (1979)
- Endangered Species Act of 1973 as amended [16 U.S.C. § 1531-1544]
- Migratory Bird Treaty Act of 1918 as amended [16 U.S.C. § 703-712]
- Bald and Golden Eagle Protection Act of 1940 as amended [16 U.S.C. § 668-668c]
- Executive Order 13186—Responsibilities of Federal Agencies to Protect Migratory Birds (January 17, 2001)
- Memorandum of Understanding between the U.S. Department of the Interior Bureau of Land Management and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds (April 12, 2010)
- The National Environmental Policy Act (1969) (42 U.S.C. §§ 4321-4347, January 1, 1970, as amended 1975 and 1994)
- The Federal Land Policy and Management Act (1976) (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996)
- Wilderness Act (1964) (Public Law 88-577 (16 U.S. C. 1131-1136))

## **1.7 Tiering**

This document is tiered to the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (Ely PRMP/FEIS, Volumes I and II) (November 2007).

## **1.8 Relevant Issues and Internal Scoping/Public Scoping.**

On November 24, 2015, a letter was sent to local Native American tribes, for a 30 day comment period, requesting comments and concerns regarding the permit renewal process for Lyle and Ruth Whiteside, and Richard and Meredith Rankin. No comments were received.

On November 3, 2015, a BLM internal meeting was held in coordination between the Caliente Field Office and the Ely BLM District Office. On March 22, 2016, a secondary meeting was held within the Caliente Field Office. The term permit renewal proposals for Lyle and Ruth Whiteside, and Richard and Meredith Rankin were presented and scoped by resource specialists to identify any relevant issues. Comments were provided by the staff specialists.

## **2.0 Alternatives Including the Proposed Action**

### **2.1 Proposed Action**

The BLM, Caliente Field Office, proposes to renew the term grazing permit for Lyle and Ruth Whiteside on the Lower Riggs Allotment, and Richard and Meredith Rankin on the Lower Riggs and Boulder Spring Allotment. The SDD evaluated both allotments for the period March 1, 2005 through February 28, 2015 (10 years).

Lyle and Ruth Whiteside have been the grazing permittee, on their respective allotments, during evaluation period. However, while the 7J Ranch held the permit for the Lower Riggs and Boulder Spring Allotments during this time period, their grazing permit was transferred to Richard and Meredith Rankin on February 9, 2015. The Rankins did not use their grazing privileges, following the issuance of their permit, during the remainder of the evaluation period (19 days).

Table 1 in Appendix B of the SDD (Appendix II of this EA) displays Annual Livestock Grazing Use for Lyle and Ruth Whiteside and 7J Ranch on the Lower Riggs Allotment during the evaluation period (3/1/2005 – 2/28/2015). The table illustrates the AUMs billed each year by each permittee; AUMs billed each year, by each permittee, as a percent of their total Active Use; the total AUMs billed each year on the allotment for both permittees; and, the total AUMs billed each year on the allotment as a percent of the total Active Use of both permittees. The table also displays the total Active Use and Season of Use as shown on the grazing permits of each permittee.

As the Table 1 illustrates, the billed annual use on the Lower Riggs Allotment for both permittees, during the ten year period, has consistently been below the combined Total Active AUMs. The total AUMs billed each year on allotment, as a percent of the total Active Use of

both permittees, ranged from 6% in 2014 to 48% in 2011 with a 10-year average of 19.2%. However, by permittee, the total AUMs billed each year as a percent of their Total Active Use ranged from 0% to 64%.

Table 2 in Appendix B of the SDD (Appendix II of this EA) displays the annual livestock grazing use - as AUMs billed each year, and AUMs billed each year as a percent of total Active Use - for 7J Ranch on the Boulder Spring Allotment during the evaluation period. The AUMs billed each year as a percent of the total Active Use ranged from 0% to 96% with a 10-year average of 59%.

A Summary of the Assessment of the Mojave-Southern Great Basin Area Standards for the Lower Riggs and Boulder Spring Allotments is displayed in Table 1.2. Monitoring data review and assessment findings indicate that all three Standards are being achieved for the unburned portions of the allotment; the data also indicates that management practices are in conformance with all applicable Guidelines for these areas.

However, for the burned portions of the allotment, Standards 1 and 3 and the upland portion of Standard 2 are not being achieved; however, this was not due to grazing. Failing to meet the standards can be attributed to the 2005 Delamar and Meadow Valley wildfires which impacted 15,585 acres (80%) of the Lower Riggs Allotment and 11,768 acres (66%) of the Boulder Spring Allotment.

The Proposed Action is to maintain the current Active Use of Lyle and Ruth Whiteside on the Lower Riggs Allotment; and Richard and Meredith Rankin on the Lower Riggs and Boulder Spring Allotments, as stated in their current term grazing permits. However, grazing authorizations being based on annual forage availability, and the terms and conditions included in the new term permits.

The Proposed Action would also include changing the Season of Use on the Lower Riggs Allotment from 5/1 – 3/24 to yearlong (3/1 – 2/28).

Furthermore, under the discretion of the BLM, each permittee would be required to use multiple watering locations during any given grazing season; and such watering locations would be used in a manner which would yield maximum livestock distribution within allotments. In addition, herding would be used, as needed, to achieve this objective.

The Proposed Action would include terms and conditions in the permits that would introduce BMPs directed towards reducing impacts to the plant and soil resource; satisfy the Wilderness Act of 1964 and BLM (Wilderness) Handbook 6340; minimize incidental take of desert tortoises; and, aid in maintaining all applicable Standards and Guidelines for Grazing Administration in the unburned portions of the allotments.

### **2.1.1 Current Permits**

The term grazing permit for Lyle and Ruth Whiteside, on the Lower Riggs Allotment, was issued on 3/10/2015 for the period 3/22/5015 – 2/28/2023. The term grazing permit for Richard and

Meredith Rankin, on the Lower Riggs and Boulder Spring Allotments, was issued on 2/19/15, for the period 3/1/2015 – 2/28/2017, due to a grazing transfer. Both permits were issued under the authority of the Appropriations Act (Sec. 411, PL 113-76).

Tables 2.1.1.1 and 2.1.1.2 display the mandatory terms and conditions for both permits, Lyle and Ruth Whiteside and Richard and Meredith Rankin, respectively.

**Table 2.1.1.1.** Current term grazing permit for Lyle and Ruth Whiteside (#2703298) on the Lower Riggs Allotment (#01087).

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** % Public Land	AUMs		
Name	Number		* Number	Kind	Begin	End		Active Use	Hist. Susp. Use	Permitted Use
Lower Riggs	1087	#2703298	102	cattle	5/1	2/28	100%	1,099	0	1,099
					3/1	3/24				

\* This number is approximate

\*\* This is for billing purposes only.

**Table 2.1.1.2.** Current term grazing permit for Richard and Meredith Rankin on the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments.

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** % Public Land	AUMs		
Name	Number		* Number	Kind	Begin	End		Active Use	Hist. Susp. Use	Permitted Use
Boulder Spring	21009	#2704063	70	cattle	10/1	3/31	100%	416	0	416
Lower Riggs	01087		29	cattle	5/1	2/28	100%	309	0	309
		3/1	3/24							

\* These numbers are approximate

\*\* This is for billing purposes only.

## 2.1.2 Proposed Term Permits

The mandatory terms and conditions in both grazing permits would be changed to the following:

Lyle and Ruth Whiteside

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** % Public Land	AUMs		
Name	Number		* Number	Kind	Begin	End		Active Use	Hist. Susp. Use	Permitted Use
Lower Riggs	1087	#2703298	91	cattle	3/1	2/28	100%	1,099	0	1,099

\* This number is approximate

\*\* This is for billing purposes only.

Richard and Meredith Rankin

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** % Public Land	AUMs		
Name	Number		* Number	Kind	Begin	End		Active Use	Hist. Susp. Use	Permitted Use
Boulder Spring	21009	#2704063	70	cattle	10/1	3/31	100%	416	0	416
Lower Riggs	01087		25	cattle	3/1	2/28	100%	309	0	309

\* These numbers are approximate

\*\* This is for billing purposes only.

The renewal of the term grazing permits would be for a period of up to 10 years. The new term permits would also include standard terms and conditions which further assist in maintaining the Standards and Guidelines for Grazing Administration (in the unburned portions of the allotment) in addition to other pertinent land use objectives for livestock use (Appendix III).

The following Terms and Conditions (BMPs) would also be added to the Term Grazing Permits to assist in maintaining the Standards:

1. Allowable Use Levels on current year's growth of perennial upland vegetation (grasses, forbs and shrubs) will not exceed 40%.
2. Under the discretion of the BLM, watering locations will be used in a manner which will yield maximum livestock distribution in the allotment. Herding will be used, as needed, to achieve this objective.
3. Waterhauling will be limited to existing roads. No roads will be bladed or improved in any way, with mechanical equipment, without the expressed consent of the authorized officer.

To address the Meadow Valley Wilderness Area, created through the Lincoln County Conservation Recreation and Development Act P.L. 108-424, to comply with the Wilderness Act of 1964 (P.L. 88-577) (see Congressional Grazing Guidelines in Appendix C of the Standards Determination Document in Appendix II of this EA):

1. Except in the case of emergency – the definition of which is defined in BLM Handbook 6340 (Management of Designated Wilderness Areas) – the permittee(s) must obtain written authorization from the District Manager prior to using any motorized vehicles, mechanical transport or motorized equipment in the Meadow Valley Wilderness Area. The use of motor vehicles, mechanical transport, or motorized equipment is not allowed for herding animals or routine inspection of the condition of developments or the condition of the range.

Finally, the following terms and conditions, from the *Programmatic Biological Opinion... for the Bureau of Land Management's Ely District Resource Management Plan* (File No. 84320-2008-F-0078) (pp. 132-134), would be included in the term grazing permit to minimize incidental take of desert tortoises that may result from the implementation of programs in general (Bureau of Land Management 2008):

1. Prior to initiation of an activity within desert tortoise habitat, a desert tortoise awareness program shall be presented to all personnel who will be onsite, including but not limited to contractors, contractors' employees, supervisors, inspectors, and subcontractors. This program will contain information concerning the biology and distribution of the desert tortoise and other sensitive species, their legal status and occurrence in the project area; the definition of "take" and associated penalties; speed limits; the terms and conditions of this biological opinion including speed limits; the means by which employees can help facilitate this process; responsibilities of workers, monitors, biologists, etc.; and reporting procedures to be implemented in case of desert tortoise encounters or noncompliance with this biological opinion.
2. Tortoises discovered to be in imminent danger during projects or activities covered under this biological opinion, may be moved out of harm's way.
3. Desert tortoises shall be treated in a manner to ensure they do not overheat, exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises will be kept shaded at all times until it is safe to release them. No desert tortoise will be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95°F. Ambient air temperature will be measured in the shade, protected from wind, at a height of two inches above the ground surface. No desert tortoise will be captured if the ambient air temperature is anticipated to exceed 95°F before handling and relocation can be completed. If the ambient air temperature exceeds 95°F during handling or processing, desert tortoises will be kept shaded in an environment that does not exceed 95°F and the animals will not be released until ambient air temperature declines to below 95°F.
4. Desert tortoises shall be handled by qualified individuals. For most projects, an authorized desert tortoise biologist will be onsite during project activities within desert tortoise habitat. Biologists, monitors, or anyone responsible for conducting monitoring or desert tortoise field activities associated with the project will complete the Qualifications Form (Appendix D) and submit it to the Service for review and approval as appropriate. The Service should be allowed 30 days for review and response.
5. A litter-control program shall be implemented to minimize predation on tortoises by ravens drawn to the project site. This program will include the use of covered, raven-proof trash receptacles, removal of trash from project areas to the trash receptacles following the close of each work day, and the proper disposal of trash in a designated solid waste disposal facility. Appropriate precautions must be taken to prevent litter from blowing out along the road when trash is removed from the site. The litter-control program will apply to all

actions. A litter-control program will be implemented by the responsible federal agency or their contractor, to minimize predation on tortoises by ravens and other predators drawn to the project site.

The following terms and conditions, also from the *Programmatic Biological Opinion* (pp. 138-140), would be included in the term grazing permit to minimize incidental take of desert tortoises that may result from permitting livestock grazing (Bureau of Land Management 2008):

6. Livestock use may occur from March 1 to October 31, outside of desert tortoise critical habitat, as long as forage utilization management levels are monitored and do not exceed 40 percent on key perennial grasses, shrubs and perennial forbs; and between November 1 and February 28/29, provided forage utilization management levels are monitored and do not exceed 50 percent on key perennial grasses and 45 percent on key shrubs and perennial forbs. If the utilization management levels are reached, livestock will be moved to another location within the allotment or taken entirely off the allotment. No livestock grazing will occur in desert tortoise critical habitat March 1 through October 31.
7. Livestock grazing in desert tortoise habitat shall be managed in accordance with the most current version of the Desert Tortoise Recovery Plan, including allotments or portions of allotments that become vacant and occur within desert tortoise critical habitat outside of ACECs. Grazing may continue in currently active allotments until such time they become vacant. BLM will work with the permittees of active allotments to implement changes in grazing management to improve desert tortoise habitat which may include use of water, salt and mineral licks, or herding to move livestock; changes in Season of Use and/or stocking rates; installation of exclusionary fences; reconfiguring pasture or allotment boundaries; and retiring pastures or allotments.
8. BLM and Service will cooperatively develop livestock grazing utilization levels or other thresholds, as appropriate for each of the listed species. These levels or thresholds shall be incorporated into each of the allotment term permit for those allotments that overlap with habitat for the listed species.
9. The permittee shall be required to take immediate action to remove any livestock that move into areas unavailable for grazing. If straying of livestock becomes problematic, BLM, in consultation with the Service, will take measures to ensure straying is prevented.
10. All vehicle use in listed species habitat associated with livestock grazing, with the exception of range improvements, shall be restricted to existing roads and trails. Permittees and associated workers will comply with posted speed limits on access roads. No new access roads will be created.
11. Use of hay or grains as a feeding supplement shall be prohibited within grazing allotments. Where mineral and salt blocks are deemed necessary for livestock grazing management they will be placed in previously disturbed areas at least 0.5 mile from riparian areas wherever possible to minimize impacts to flycatchers and listed fishes and their habitat. In some cases, blocks may be placed in areas that have a net benefit to tortoise by distributing

livestock more evenly throughout the allotment, and minimizing concentrations of livestock that result in habitat damage. Waterhaul sites will also be placed at least 0.5 mile from riparian areas.

12. Site visits shall be made to active allotments by BLM rangeland specialists and other qualified personnel, including Service biologists, to ensure compliance with the terms and conditions of the grazing permit. Any item in non-compliance will be rectified by BLM and permittee, and reported to the Service.
13. Livestock levels shall be adjusted to reflect significant, unusual conditions that result in a dramatic change in range conditions (e.g., drought and fire) and negatively impact the ability of the allotment to support both listed species and cattle.

### **2.1.3 Wilderness**

Within wilderness, authorization for the use of motorized equipment or mechanized transport for range development maintenance or repair would be granted – consistent with the National Environmental Policy Act (NEPA) analysis – through a BLM letter of authorization. Such authorization letters would be consistent with terms and conditions listed in the Final Grazing Decision, and would include specified design features or mitigation measures along with any specified follow-up actions.

Authorization letters would designate exact travel routes to be followed if any motorized equipment or mechanical transport is authorized as well as habitat rehabilitation requirements. They would also include the specific management guidelines outlined in Appendix IV, as appropriate.

### **2.1.4 Invasive, Non-Native Species and Noxious Weed**

A Weed Risk Assessment was completed for this project (Appendix V). According to the 2013 weed surveys, no noxious weeds are known to occur within or immediately adjacent to the allotment boundaries. Tall Whitetop (*Cardaria draba*) has been identified approximately three miles east of the Lower Riggs Allotment (Appendix A, Map #2 of SDD in Appendix II of EA). In addition, while not officially documented, the following non-native invasive weeds occur either within or vicinal to the allotment: cheatgrass (*Bromus tectorum*), red brome (*Bromus rubens*) and Russian thistle (*Salsola kali*).

The mitigation measures listed in the Weed Risk Assessment will be followed, when grazing occurs on the allotment, to minimize the potential spread of weeds.

### **2.1.5 Monitoring**

The Ely District Approved Resource Management Plan (August 2008) identifies monitoring to include (p. 88): “Monitoring to assess rangeland health standards will include records of actual livestock use, measurements of forage utilization, ecological site inventory data, cover data, soil mapping, and allotment evaluations or rangeland health assessments. Conditions and trends of

resources affected by livestock grazing will be monitored to support periodic analysis/evaluation, site-specific adjustments of livestock management actions, and term permit renewals.”

Under guidance of the Endangered Species Act and through Section 7 consultation with the U.S. Fish and Wildlife Service, a species-specific monitoring plan will be developed to monitor desert tortoise habitat.

## **2.2 Description of Alternatives Analyzed in Detail**

### **2.2.1 No Action Alternative**

The No Action Alternative, for livestock grazing, permit renewals is defined as “continuing to graze under current terms and conditions” in IM-2000-022, Change 1 (re-authorized by IM-2010-063).

Therefore, the No Action Alternative would reflect the status quo. The term permit would be issued without changes to grazing management, or modifications to the existing terms and conditions of the permit.

The renewal of the term grazing permit would be for a period of up to 10 years.

### **2.2.2 No Grazing Alternative**

Under this alternative a new term grazing permit would not be issued, once the current term permit expired, resulting in no authorized livestock grazing on the allotment.

This alternative was also considered and analyzed in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (Ely PRMP/FEIS) (November, 2007) which is addressed below.

## **2.3 Alternatives Considered but Eliminated from Further Analysis**

The Ely PRMP/FEIS (Volume II) analyzed the Environmental Impacts of livestock grazing under the Proposed RMP section, along with four alternatives (p.4.16-1 to 4.16-15.), which included a no-grazing alternative (Alternative D). It also analyzed environmental impacts on vegetative resources from livestock grazing under the Proposed RMP section, and the four alternatives (4.5-1 to 4.5-28), which included the no-grazing alternative. No further analysis is necessary in this document for Alternatives A, B and C. However, the no-grazing alternative is additionally analyzed in this EA. The following is a list of the four Alternatives contained within the PRMP/FEIS (Volume II):

- Alternative A, The Continuation of Current Existing (No Action alternative)
- Alternative B, the maintenance and restoration of healthy ecological systems
- Alternative C, commodity production
- Alternative D, conservation alternative (no-grazing alternative)

### **3.0 Description of the Affected Environment and Associated Environmental Consequences**

#### **3.1 Allotment Information**

The Lower Riggs and Boulder Spring Allotments are located approximately 40 miles south of Caliente, Nevada, in the east-central portion of Lincoln County (Appendix A, Map #1 of SDD in Appendix II). Elevations in the allotments range from approximately 3,500 feet in Kane Springs Wash to approximately 5,500 feet in their eastern portions. The 19,523 acre Lower Riggs Allotment is situated in the following watersheds: Kane Springs Wash (#217), Meadow Valley Wash South (#214 B), and Meadow Valley Wash North (#214 A). The 17,752 acre Boulder Spring Allotment is located in the Kane Springs Wash and Meadow Valley Wash South Watersheds.

There are two known springs, in proximity to each other, on the Lower Riggs Allotment: Lower Riggs Spring and Upper Riggs Spring. Both springs feed an 11 mile pipeline capable of providing water to six watering locations (troughs) along its length while also creating a lotic riparian zone.

Boulder Spring is the only known spring on the Boulder Spring Allotment. This spring is capable of delivering water, through a 14 mile pipeline, to six watering locations (troughs) along its length (Appendix A, Map #2 of SDD in Appendix II), and is also associated with a lotic riparian zone.

None of the allotments are associated with a Wild Horse Herd Management Area (HMA).

The Lower Riggs and Boulder Spring Allotments contain 1,562 acres and 3,511 acres of the Meadow Valley Wilderness, respectively (Appendix A, Map #2 of SDD in Appendix II).

Both allotments contain general tortoise habitat for the federally threatened Agassiz's desert tortoise (*Gopherus agassizii*). One hundred and twenty-five acres of this habitat are located in the extreme southern portion of the Lower Riggs Allotment, and 9,674 acres are located in the Boulder Spring Allotment (Appendix A, Map #2 of SDD in Appendix II). Desert tortoise critical habitat and desert tortoise Areas of Critical Environmental Concern (ACEC) do not exist in the allotments. Table 4 displays allotment acreage, the amount of desert tortoise habitat and wilderness in each allotment, and the amount of desert tortoise habitat and wilderness as a percent of the allotment.

Both allotments also contain mule deer (*Odocoileus hemionus*) habitat, including crucial summer habitat, along with occupied and unoccupied desert bighorn sheep (*Ovis canadensis nelsoni*) habitat, (Appendix A, Map #4 of SDD in Appendix II). The allotments also contain a small amount of elk (*Cervus elaphus*) habitat.

Three large wildfires started by lightning – the Meadow Valley, Delamar, and Vigo fires – have occurred in both allotments during the past 10 years (Appendix A, Map #5 of SDD in Appendix II). The Meadow and Delamar fires were two component fires of what eventually became known as the Southern Nevada Complex fires.

The Delamar and Meadow Valley fires occurred in 2005 and caused significant changes to the vegetative resource. The combination of both fires burned 15,585 acres or 80% of total acreage of the Lower Riggs Allotment; and 11,768 acres or 66% of the total acreage of the Boulder Spring Allotment.

Portions of both fires were aerielly seeded in January 2006. In the Lower Riggs Allotment, 3,323 acres of the Delamar fire and 4,288 acres of the Meadow Valley fire were seeded, for a total of 7,611 acres. In the Boulder Spring Allotment, 699 acres of the Delamar Fire were seeded (Appendix A, Map #5 of SDD in Appendix II). A majority of all seeded acreage is located in rugged, relatively steep and inaccessible terrain which lacks water for livestock grazing.

In 2011, the Vigo fire burned 2,564 acres and 2,896 acres in the Lower Riggs and Boulder Spring Allotments, respectively, all of which occurred within the boundaries of the 2005 Meadow Valley fire.

### 3.2 Resources/Concerns Considered for Analysis - Proposed Action

The following table displays items that have been evaluated for the potential for significant impacts to occur, either directly, indirectly, or cumulatively, due to implementation of the Proposed Action.

Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general and to the Ely BLM in particular.

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Air Quality	No	<p>Air quality in Lincoln County is classified by the State of Nevada as being “unclassifiable” since no monitoring has been conducted to determine the classification and National Ambient Air Quality Standards; violations would not otherwise be expected in the county.</p> <p>The Proposed Action would not have a measurable affect the air quality of Lincoln County. Any dust created would be expected to be ephemeral.</p>
Cultural Resources	No	<p>Impacts from livestock grazing on Cultural Resources are analyzed on page 4.9-5 of the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007).</p> <p>In accordance with the State Protocol Agreement, Cultural Resources Inventory Needs Assessment FY15-069 was completed on June 26, 2015. The cultural review concluded that, “No adverse effects are currently taking place and none are expected to occur as a result of the permit renewal.” The State Protocol Agreement Appendix D. 1. d. states: “ If BLM determines that adverse effects are not occurring and will not occur as a result of the permit renewal, then SHPO consultation is not required prior to permit authorization, as described in Section II of this Protocol.”</p>

<b>Resource/Concern Considered</b>	<b>Issue(s) Analyzed</b>	<b>Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis</b>
Paleontological Resources	No	No currently identified paleontological resources of concern in the project area.
Native American Religious Concerns and other concerns	No	On November 24, 2015, a letter was sent to local Native American tribes, for a 30 day comment period, requesting comments and concerns regarding the permit renewal process for Lyle and Ruth Whiteside, and Richard and Meredith Rankin. No comments were received.  Direct impacts and cumulative impacts would not occur, because there were no identified concerns through coordination.
Noxious and Invasive Weed Management	No	Livestock grazing has the potential to spread noxious and invasive weeds. A Weed Risk Assessment was completed for this project (Appendix IV).  The design features of the Proposed Action, in addition to the vigilant practices described in the Noxious Weed Risk Assessment, will help prevent livestock grazing from spreading noxious and non-native, invasive weeds.  No additional analysis is needed.
Vegetative Resources	Yes	Impacts from livestock grazing on Vegetation Resources were analyzed on page 4.5-9 in the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007). Beneficial impacts to vegetative resources are consistent with the need and objectives for the Proposed Action.  This resource has been further analyzed in the EA.
Rangeland Standards and Health	Yes	Impacts from livestock grazing on Rangeland Standards and Health are analyzed on pages 4.16-3 through 4.16-4 of the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007). Beneficial impacts to rangeland standards and health are consistent with the need and objectives for the Proposed Action.  An evaluation of rangeland health, along with recommendations associated with grazing management practices, in the form of a Standards Determination Document is in Appendix II.  Analysis of the Proposed Action and alternatives is provided in the Affected Environment and Environmental Consequences sections of this EA.
Grazing Uses	Yes	Livestock grazing is analyzed in this EA.
Forest Health <sup>1</sup>	No	Pinyon-juniper woodlands are found within the allotment. Such areas are characterized by steep, rugged terrain which is unattractive to livestock. The impact of grazing in the woodlands is cumulatively negligible.
Wastes, Hazardous or Solid	No	No hazardous or solid wastes exist on the permit renewal area, nor would any be introduced by the Proposed Action or alternatives.
Wilderness	Yes	The Lower Riggs and Boulder Spring Allotments contain 1,562 acres and 3,511 acres of the Meadow Valley Range Wilderness, respectively (Appendix A, Map #2 of SDD in Appendix II).

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
		Impacts to wilderness is analyzed in this EA.
Lands with Wilderness Characteristics	No	<p>In the 2012 wilderness characteristics inventory, two units associated with the Lower Riggs and Boulder Spring Allotments, were found to possess wilderness characteristics. A very small portion of one unit (0136-2a-2012) occurs only in the Lower Riggs Allotment. The other unit (0145a-2012) occurs in the northwest portions of both allotments. The remainder of the allotments was found to be lacking wilderness characteristics.</p> <p>There are no anticipated impacts to Size, Naturalness, Opportunities for Solitude or Primitive forms of Recreation from the Proposed Action, No Action, and No Grazing alternatives.</p>
Wetlands/Riparian Zones	No	Approximately .11 miles and .8 miles of lotic riparian habitat exist in the Lower Riggs and Boulder Spring Allotments, respectively. Both riparian zones were evaluated by a BLM interdisciplinary team. The team determined that both zones were in proper functioning condition (PFC) (Appendix A, Map #3 of SDD in Appendix II).
Water Quality, Drinking/Ground	No	<p>The Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007) disclosed effects to Water Resources from livestock grazing on page 4.3-5.</p> <p>The Proposed Action would not affect water quality (surface or groundwater sources) or drinking water in the project area. No surface water in the project area is used as human drinking water sources and no impaired water bodies of the State on Nevada are present in the project area.</p>
Water Resources (Water Rights)	No	The Proposed Action would not affect existing or pending water rights vicinal to the project analysis area.
Floodplains	No	The project analysis area is not included on FEMA flood maps. The resource does not exist in the proposed project area on BLM managed lands.
Migratory Birds	Yes	<p>Migratory birds documented on the Lower Riggs and Boulder Spring Allotments or in similar habitats within approximately 10 miles of the allotments are listed in Appendix VI.</p> <p>Migratory birds are analyzed in detail.</p>
U.S. Fish and Wildlife Service (USFWS) Listed or proposed for listing Threatened or Endangered Species or critical habitat.*	Yes	<p>The Lower Riggs and Boulder Spring Allotments contain habitat for the federally threatened desert tortoise (<i>Gopherus agassizii</i>) (Appendix A, Map #2 of SDD in Appendix II). Consultation under Section 7 of the Endangered Species Act is concurrently being conducted with the U.S. Fish and Wildlife Service.</p> <p>Desert tortoise is analyzed in detail.</p>

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Special Status Plant Species, other than those listed or proposed by the USFWS as Threatened or Endangered	No	There are no known special status plant species on the Lower Riggs and Boulder Spring Allotments.
Special Status Animal Species, other than those listed or proposed by the UFWS as Threatened or Endangered	Yes	<p>The Lower Riggs and Boulder Spring Allotments are outside the range of the greater sage-grouse (<i>Centrocercus urophasianus</i>), and sage-grouse do not occur.</p> <p>Special status species that are documented on the Lower Riggs and Boulder Spring Allotments or in similar habitats within approximately 10 miles of the allotments are listed in Appendix VI.</p> <p>The allotments contain habitat for the following BLM sensitive and special status species:</p> <p>big brown bat (<i>Eptesicus fuscus</i>), California myotis (<i>Myotis californicus</i>), desert bighorn sheep (<i>Ovis canadensis nelsoni</i>), fringed myotis (<i>Myotis thysanodes</i>), little brown myotis (<i>Myotis lucifugus</i>), Mexican free-tailed bat (<i>Tadarida brasiliensis</i>), pallid bat (<i>Antrozous pallidus</i>), western pipistrelle (<i>Parastrellus hesperus</i>),</p> <p>Brewer's sparrow (<i>Spizella breweri</i>), ferruginous hawk (<i>Buteo regalis</i>), golden eagle (<i>Aquila chrysaetos</i>), loggerhead shrike (<i>Lanius ludovicianus</i>), sage thrasher (<i>Oreoscoptes montanus</i>), Swainson's hawk (<i>Buteo swainsoni</i>), western burrowing owl (<i>Athene cunicularia hypugaea</i>),</p> <p>banded gila monster (<i>Heloderma suspectum cinctum</i>), and Arizona toad (<i>Anaxyrus microscaphus</i>).</p> <p>These species are analyzed in detail.</p>
Fish and Wildlife	No	<p>Wildlife documented on the Lower Riggs and Boulder Spring Allotments or in similar habitats within approximately 10 miles of the allotments are listed in Appendix VI. There are no known fish on the allotments or connectivity to Meadow Valley Wash.</p> <p>Impacts from livestock grazing on Fish and Wildlife are analyzed on pages 4.6-10 through 4.6-11 in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007).</p> <p>Grazing would reduce the amount of available forage (grass and forbs); however, compliance with Ely Resource Management Plan standards for utilization percentages ensures that forage is present in the allotment after cattle are removed.</p> <p>Both allotments contain general elk habitat (<i>Cervus elaphus</i>), and general and crucial summer habitat for mule deer (<i>Odocoileus hemionus</i>), as well as habitat for small mammals, reptiles, and amphibians. No population level impacts are anticipated to these species.</p>

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
		It is anticipated that the Proposed Action would have minor effects on this resource.
Wild Horses	No	The allotments are not located within a Wild Horse Herd Management Area (HMA).
Soil Resources	No	<p>The Ely Proposed resource Management Plan/Final Environmental Impact Statement (November 2007) disclosed effects to Soil Resources resulting from livestock grazing actions on page 4.4-4.</p> <p>Soils in the project analysis area are not prone to compaction or erosion problems; infiltration rates and soil permeability are high and soil textures are coarse throughout the area</p> <p>It is expected that the Proposed Action would not measurably affect soil resources.</p>
Mineral Resources	No	There would be no modifications to mineral resources through the Proposed Action or alternatives; therefore, no direct or cumulative impacts would occur to minerals.
VRM	No	The Proposed Action is consistent with the VRM classification objectives for VRM classes 1 through 4 within the allotments; therefore, no direct or cumulative impacts to visual resources would occur. With regards to livestock, the terrain of Class I is rugged, inaccessible, and lacks water; therefore, little to no livestock grazing in Class I is expected.
Recreation Uses	No	Design features identified in the Proposed Action would result in negligible impacts to recreational activities
Land Uses	No	<p>There would be no modifications to land use authorizations through the Proposed Action, therefore no impacts would occur.</p> <p>No direct or cumulative impacts would occur to access and land use.</p>
Watershed Management		
Environmental Justice	No	No environmental justice issues are present at or near the project area. No minority or low income populations would be unduly affected by the Proposed Action or alternatives.
Areas of Critical Environmental Concern (ACEC)	No	There are no Areas of Critical Environmental Concern (ACECs) on the Lower Riggs and Boulder Spring Allotments.
Farmlands (Prime or Unique)	No	No prime farmland exists within the Lower Riggs Allotment. Without irrigation there is no classified Prime Farmland within the Boulder Spring Allotment.
Socioeconomics	Yes	Impacts from livestock grazing on Economic and Social conditions are analyzed on pages 4.23-1 – 4.23-11 and 4.24-1 – 4.24-4, respectively, of the

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
		Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007).  Impacts to socioeconomics is analyzed in this EA.
Public Safety	No	The project would not cause issues with law enforcement, traffic hazards, excessive noise that could affect the public, etc.

<sup>1</sup> Healthy Forests Restoration Act projects only

\* Consultation required, unless a “not present” or “no effect” finding is made.

An analysis of grazing impacts on the following resources – noted in the above table as being negligibly affected – may be found in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007) on the noted pages: Cultural Resources (page 4.9-5); Water Quality, Drinking/Ground (page 4.3-5); and Soil Resources (page 4.4-4). Consequently, these resources do not require a further detailed analysis.

### 3.3 Resources/Concerns Analyzed

The following resources were assigned a “Yes” under the “Issue(s) Analyzed” column in the above table and have been identified by the BLM interdisciplinary team as resources within the affected environment that merit a detailed analysis: Vegetative Resources; Rangeland Standards and Health; Grazing Uses; Wilderness; Migratory Birds; USFWS Listed or proposed for listing Threatened or Endangered Species or critical habitat; and Special Status Animal Species other than those listed or proposed by the USFWS as Threatened or Endangered; and Socioeconomics. An analysis of grazing impacts on these resources may also be found in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007), on the following noted pages: Vegetative Resources (page 4.5-9); Rangeland Standards and Health (pages 4.16-3 through 4.16-4); Wilderness (pages 4.22-21 through 4.22-26); Migratory Birds – Special Status Species (pages 4.7-1 through 4.7-82), and Fish and Wildlife (pages 4.6-1 through 4.6-32); Special Status Species, including Threatened and Endangered Species (pages 4.7-28 through 4.7-33); and Socioeconomics (pages 4.23-1 – 4.23-11 and 4.24-1 – 4.24-4).

#### 3.3.1 Vegetative Resources; Rangeland Standards and Health; Grazing Uses

##### 3.3.1.1 Affected Environment

Sections 1.1, 2.1, and 3.1 describe and/or reference basic information about the Lower Riggs and Boulder Spring Allotment.

As described under section 1.2 and 2.1, an evaluation of livestock grazing management and rangeland health within the allotment (achievement of the standards and conformance to the guidelines) in the form of a Standards Determination Document was completed in conjunction with the permit renewal process (Appendix II).

All three Standards are being achieved for the unburned portions of the allotment; the data also indicates that management practices are in conformance with all applicable Guidelines for these areas.

However, for the burned portions of the allotment, Standards 1 and 3 and the upland portion of Standard 2 are not being achieved; however, this was not due to grazing. Failing to meet the standards can be attributed to the 2005 Delamar and Meadow Valley wildfires which impacted 15,585 acres (80%) of the Lower Riggs Allotment and 11,768 acres (66%) of the Boulder Spring Allotment.

### 3.3.1.2 Environmental Consequences

#### **Proposed Action**

##### Changing the Season of Use

One of the results of past wildfires is the establishment of purple 3-awn, sometimes in copious amounts, in some portions of the burned areas in both allotments. Purple threeawn is a short-lived native perennial warm season bunchgrass. In the Southwest, where forage is limited, purple threeawn is considered good spring forage while the plants remain green and leaves are young (USDA Plant Guide). After the leaves begin to dry, it becomes relatively ignored by livestock and they will switch forage preferences.

Red brome (*Bromus rubens*) is an invasive annual grass which occurs in portions of both allotments. It is a species which begins growth in late winter/early spring prior to the green-up of perennial vegetation. Salo (2004) noted: "This grass appears able to germinate following a precipitation event of one centimeter, whereas native Mohave Desert annuals appear to require twice that amount (Beatley, 1966). This suggests that red brome may be able to germinate before native annuals in years when early precipitation events are relatively small. If so, this exotic grass would be able to pre-empt resources early in the growing season, when they may be most critical (Ross and Harper, 1972)."

Red brome is an early emergent. Seedlings produced in fall will overwinter, grow slowly in spring, and as soil temperature warms there is a high potential for rapid growth and early maturation (USDA, 2012). With sufficient precipitation, even into April, this grass could potentially reproduce in copious amounts; thereby, yielding vegetation capable of contributing to highly destructive wildfires in the future.

Cheatgrass (*Bromus tectorum*) is another invasive annual grass that occurs in both allotments. It is a winter annual that germinates in the fall, if climatic conditions are favorable, or in the following spring insuring annual recruitment (Mack and Pyke 1983). The prolific seed production of cheatgrass contributes to the competitive advantage of this grass over native vegetation (Hulbert 1955). Cheatgrass can out-compete natives for water and nutrients in the early spring since cheatgrass is actively growing when many natives are initiating growth.

The period that cheatgrass is palatable and nutritious for herbivore consumption is considerably shorter than for most native herbaceous plants (Klemmedson and Smith 1964). Cattle may continue to utilize cheatgrass after it is dry if adequate water is present or the cheatgrass is softened by rain (Hull and Pehanac 1947). The short growth period of cheatgrass relative to native plants also increases the likelihood of wildfire starts and spread (Pellant 1990). Cheatgrass has increased the extent and frequency of rangeland wildfires in the Great Basin and Upper Columbia River Basin with significant impacts to natural and fiscal resources (Billings 1994, Pellant 1990).

Therefore, changing the Season of Use from 5/1 – 3/24 to 3/1 – 2/28 allows livestock to take advantage of red brome, cheatgrass, and purple 3-awn during the most palatable period for these plant species should green-up occur in late March and through the month of April. Grazing livestock on the allotments, while 3-awn and red brome are palatable, would promote improved livestock distribution, because the forage base would have been increased. This would reduce grazing impacts to vegetative and soil resources on the allotments while also helping to reduce fine fuels.

#### Using Multiple Watering Locations to Achieve Maximum Livestock Distribution

The use of multiple watering locations, in a manner which would yield maximum livestock distribution within allotments, provides a means to help control livestock. Under the discretion of the BLM, the strategic use of multiple watering locations during any given grazing season, along with herding when needed, should maintain livestock distribution in a manner which would promote a uniform utilization level within the allotment. When coupled with the introduction of allowable use levels, it would aid in preventing overall negative impacts to the soil and plant resource accordingly.

As an overall result, it would promote the potential for plants: to develop above ground biomass and produce a viable seed crop; to protect soils and provide desirable perennial cover for wildlife; to contribute to litter cover; and to continue to develop root masses which would lend itself to improved carbohydrate storage for vigor and reproduction.

In summary, this should result in the promotion of overall forage production, ground cover, plant vigor and overall range condition. In addition, the potential for unacceptable utilization levels would be reduced while providing benefits to wildlife regarding forage and cover.

The Nevada Department of Wildlife (NDOW) developed and completed a statewide Comprehensive Wildlife Conservation Plan in September 2012. The plan was approved by the USFWS on March 1, 2013 (Wildlife Action Plan Team 2013). It serves as a comprehensive, landscape level plan, identifying the species of greatest conservation need and the key habitats on which they depend, with the intent to prevent wildlife species from becoming threatened or endangered.

According to the Nevada Wildlife Action Plan, range improvements resulting in better distribution of livestock can reduce impacts. The plan notes the following on page 59: “Livestock facilities such as springs developments, water pipelines, and fencing have distributed

livestock use over areas that were sporadically or lightly used prior to agricultural development. Distribution of livestock over a greater area, can also reduce impacts associated with concentrated livestock – trampling, soil compaction, eroding trails, etc.”

The Nevada Wildlife Action Plan goes on to discuss habitat benefits of water developments further on pages 59-60: "The presence of livestock water developments can also improve the quality of surrounding habitat, allowing wildlife species to expand into previously unoccupied areas. Pronghorn antelope generally require permanent water sources at intervals of less than five miles within their home range. Ranchers have become increasingly interested in, with the help of various federal programs, developing water systems that are wildlife friendly (e.g., wildlife escape ladders, using structures of different size, shape or position to enhance wildlife use). Strategically placed water developments that are managed to eliminate excessive diversion and that incorporate wildlife friendly features can be used to enhance rangeland for both livestock and wildlife. Food, cover, and space are habitat needs for both wildlife and livestock. Grazing management can be focused to managing livestock in a manner that supports these basic habitat elements while maintaining native plant community integrity – the plant communities to which native wildlife have adapted.”

A concentrated influence on vegetation, vicinal to water troughs, is expected due to typical ungulate behavior associated with point water sources. Typically, there is an area immediately surrounding the troughs where soil and vegetation is the most affected as a result of cattle trampling and grazing while drinking. Varying degrees of grazing use/trampling subsequently occurs, in a radial pattern, with such affects decreasing as distance from the watering source increases. However, with the establishment of three new watering locations, logic dictates that the overall degree of such impacts should further decline, because of additional water sources servicing a given number of livestock, thereby, creating increased livestock distribution.

The installation and maintenance of bird ladders would allow a means of escape for wildlife (Point 6, Appendix III).

The Proposed Action would also add other terms and conditions (BMPs) to the permit that would further aid in maintaining the Mojave-Southern Great Basin Standards within the unburned portion of the allotment.

Consequently, it is anticipated and reasonable to expect that all three Standards would continue to be achieved within the unburned portions of the allotments; and, in the burned portions of the allotments, the reduction of fine fuels – using grazing as a tool – would help to reduce fire intensity and severity of any future fires.

### **No Action Alternative**

All of the mandatory terms and conditions of the current permits, as displayed under section 2.1.1, would remain unchanged. This includes the Season of Use on the Lower Riggs Allotment which currently does not allow grazing from 3/24 – 4/30. All of the anticipated benefits explained above under this section (3.3.1.2) would be either dramatically reduced or eliminated.

Under the no action alternative, the standard terms and conditions referenced under 2.1.2 under the Proposed Action and in Appendix III of this EA - which further assist in maintaining the Standards and Guidelines for Grazing Administration (in the unburned portions of the allotments) in addition to other pertinent land use objectives for livestock use - would not be implemented.

The BMPs listed under 2.1.2, intended to assist in maintaining the Standards, would not be implemented. Consequently, the setting of allowable use limits; the strategic use of watering locations, along with the requirement of herding as needed, both directed at yielding maximum livestock distribution; and, the restriction of waterhauling to existing roads would not become integrated into the permit.

Consequently, the benefits to plant physiology and added soil protection, and wildlife cover – as described under the Environmental Consequences of the Proposed Action – would be dramatically reduced; and, the plant quality and volume of existing forage species could decrease, thereby, impacting the desired forage base in a negative manner. This would have overall negative impacts on vegetative resources and the health of the land.

In addition, all the terms and conditions from the PBO as listed under 2.1.2 – intended to minimize incidental take of the desert tortoise – would not be included in the new permit. This would ignore PBO directives (and the efforts associated with threatened and endangered species consultation with the U.S. Fish and Wildlife Service) designed to mitigate impacts to the desert tortoise; and, could subsequently have negative impacts on the currently listed species.

If green-up of 3-awn and red brome occurs during late March and through the month of April, livestock could not be used as a tool in reducing fine fuels during the time when these plants are most palatable and vulnerable to grazing. In addition, livestock distribution would not be promoted, due to the temporary increase in the forage base which lends itself to reducing grazing impacts to vegetative and soil resources.

In summary, all of the benefits listed under the Environmental Consequences for the Proposed Action would not occur.

### **No Grazing Alternative**

It should be noted that the following is most applicable to the unburned portions of the allotment:

For a short period of time following implementation, no grazing may accomplish the same desired result as allowing periodic rest during the spring critical growing period for plants by allowing perennial forage plants rest during the vital phenological stages of their annual growing cycle. However, studies indicate that this benefit would begin to decrease as plants accumulate previous years' herbage. Thus, the benefit may become relatively short-lived without outside influences, and may lead to wolfy plants. Among bunchgrasses, wolfy plants are clumps that have accumulations of both current and previous years' herbage (Ganskopp and Bohnert 2004).

In fact, it is realized in the scientific community that, over time and without outside influences such as fire, grasses may become woody from lack of grazing use. Ganskopp et al. (1992, 1993) cites where research at the Eastern Oregon Agricultural Research Center demonstrated that cattle are aware of even one cured stem in clumps of green grass, and that they are about 40 percent less likely to forage on a woody plant than on one that does not have cured stems. They also state that many have reported preferential use by both wild and domestic animals of individual plants or patches of grass where old growth material has been removed by grazing or fire.

If this occurs, substantial forage can become wasted, because current year's growth is intermixed with older, cured materials that are nutritionally deficient and present a physical barrier to cattle grazing (Ganskopp and Bohnert 2004). Such plants would also lose vigor and become less palatable, thereby contributing to less productive rangelands for either wildlife or domestic livestock that depend on such a forage base.

Anderson (1993) elaborated on the consequences of choosing a No Grazing option. He states: "After a period of time, ungrazed herbaceous fibrous-rooted plant species become decadent or stagnant. Annual above-ground growth is markedly reduced in volume and height. Root systems likely respond the same. The result is reduction in essential features of vegetational cover, including the replacement of soil organic matter and surface residues, and optimum capture of precipitation." He also lists two other consequences: "(1) loss of quality herbaceous forage for wild herbivores, causing them to move to areas where regrowth following livestock grazing provides succulent forage (Anderson 1989), and (2) increased hazard from wildfires that can be devastating from a rangeland watershed standpoint."

Courtois et al. (2004) found that 65 years of protection from grazing on 16 exclosures, at different locations across Nevada, resulted in relatively few differences between vegetation inside the exclosures and that exposed to moderate grazing outside the exclosures. Where differences occurred, total vegetation cover was greater inside the exclosures while density was greater outside the exclosures. Protection from grazing failed to prevent expansion of cheatgrass into the exclosures (Ely PRMP/FEIS pg. 4.5–27). The article further stated, "Herbivory exclusion has not conclusively increased species richness, but at the simple majority of sites, richness was greater under grazing. It is also important to note that this study was conducted during a period of low precipitation...if differences are detectable, they should be more pronounced during times of stress." The article concluded that, "For this assessment, few changes in vegetation characteristics between the inside and outside of exclosures have occurred in 65 years, indicating that recovery rates have been similar under moderate grazing and exclusion. The live plant census reported few dead shrub and grass plants, but the vegetation inside exclosures often exhibited decadent growth characteristics."

The following is most applicable to the burned portions of the allotment:

It would be worthy to note that there would be a higher potential for large, destructive wildfires when ample precipitation produces copious amounts of fine fuels, in the form of invasive annual grasses, the volume of which could otherwise be reduced using grazing as a management tool. Following such an event, the soil protection typically offered by perennial vegetative cover and

associated root systems would be lacking, and could lead to a high soil erosion potential and mass land movements within affected watersheds.

### **3.3.2 Migratory Birds**

#### **3.3.2.1 Affected Environment**

The Lower Riggs and Boulder Spring Allotments are primarily within the Kane Spring Wash Watershed. The Lower Riggs Allotment also contains small portions of the Meadow Valley Wash North and South Watersheds, while the Boulder Spring Allotment just skirts the western boundary of the Meadow Valley Wash South Watershed. The elevation ranges from 3,300 feet in Kane Springs Valley to 6,600 feet in the Delamar Mountains. Kane Springs Valley and Wash bisects both allotments and is flanked by the Delamar Mountains on the northwest and the Meadow Valley Mountains on the southeast.

The habitat is characteristic of the Mojave Desert biome. The dominant vegetation consists of North American Warm Desert Wash, Sonora-Mojave Creosotebush-White Bursage Desert Scrub, Inter-Mountain Basins Semi-Desert Grassland, Mojave Mid-Elevation Mixed Desert Scrub, Inter-Mountain Basins Semi-Desert Shrub Steppe, Great Basin Xeric Mixed Sagebrush Shrubland, and Inter-Mountain Basins Big Sagebrush Shrubland at the lower and mid elevations, and Inter-Mountain Basins Montane Sagebrush Steppe, Great Basin Pinyon-Juniper Woodland, Mogollon Chaparral, and Rocky Mountain Gambel Oak-Mixed Montane Shrubland at the higher elevations. Riparian habitat consists of North American Warm Desert Lower Montane Riparian Woodland and Shrubland, and Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland. Large portions of both allotments burned in 2005 and were partially aerial seeded in January 2006 as described in Section 3.1. These same areas were partially burned again in 2011.

The variety of habitats from lowland desert wash to mid-elevation shrubland habitats to higher elevation forested habitats, as well as riparian areas provide habitat for a variety of bird species. Migratory bird species recorded on or in similar habitats near the allotments (i.e., within approximately 10 miles) are listed in Appendix VI.

#### **3.3.2.2 Environmental Consequences**

##### **Proposed Action**

The effects of cattle grazing on migratory birds vary by biome (e.g., Mojave Desert), habitat type (e.g., grasslands, riparian areas), rangeland management practices, time of year (life history stage), and bird species guild (e.g., ground nesting species verses canopy nesting species) (Fleischner 1994). Inter-annual variation, climate change effects, drought, fire, floods, habitat fragmentation, predators, and other land uses (e.g., recreation) are contributing and confounding factors that affect migratory birds in western ecosystems. Effects on migratory birds from grazing may be direct (e.g., nest trampling) or indirect (e.g., changes in vegetation cover and structure or ecosystem function over time) (Paine et al. 1997, Krueper et al. 2003). Changes in vegetation cover and structure may favor some species or guilds, while limiting others, and may affect population densities. Deciphering the effects of grazing on migratory birds is complex.

There is the possibility that nests and young of ground nesting birds could be trampled by cattle during the breeding season or cover reduced exposing nests to predators (Jensen 1990). Cattle grazing would result in a change to shrub architecture and overall vegetative structure and cover that may affect migratory birds. Establishing allowable use levels would minimize these impacts to migratory birds.

Each allotment contains a lotic riparian zone. On the Lower Riggs Allotment there is a 0.8 mile riparian area associated with Upper and Lower Riggs Springs, and on the Boulder Spring Allotment, there is a 0.11 mile riparian area associated with Boulder Spring. Both lotic riparian reaches were found to be in proper functioning condition providing riparian habitat for migratory birds.

It is anticipated that implementation of best management practices and terms and conditions, and application of the Mojave-Southern Great Basin Resource Advisory Council standards would result in minimal impacts to migratory birds. No species population level effects would be anticipated.

### **No Action Alternative**

Under the no action alternative, grazing management on the allotments would remain unchanged. There would be no change to the season of use for the Lower Riggs Allotment term permit and cattle would not be able to take full advantage of early spring forage availability during this period of high palatability. This could result in increased fuels during high moisture years, particularly from invasive annual grasses, elevating the potential intensity and severity of wildfires ultimately affecting migratory bird habitat on the allotment. New terms and conditions and BMPs designed to maintain rangeland health standards, improve rangeland health in the burned portions of the allotments, achieve better distribution of cattle, and reduce fuel loading would not be implemented.

### **No Grazing Alternative**

Eliminating grazing would likely benefit some migratory bird species or guilds (e.g., ground nesting species), have no effect on some species, and reduce the population density of other species. This would result from changes in vegetation cover and structure, and ecosystem function over time (i.e., natural succession) (Krueper et al. 2003). Eliminating grazing in combination with stressors of anthropogenic climate change would also result in an increase in fuels, especially fine fuels from invasive annual grasses, increasing the potential for catastrophic fire affecting migratory bird habitat. Large burned areas would reduce bird diversity in the Mojave ecosystem with a long recovery time and increase the potential of conversion to invasive annual grasses (Abatzoglou and Kolden 2011).

### 3.3.3 Federally Threatened and Endangered Species and Critical Habitat (including species proposed or candidates for listing under the Endangered Species Act)

#### 3.3.3.1 Affected Environment

Both the Lower Riggs and Boulder Spring Allotments contain habitat for the federally threatened desert tortoise (*Gopherus agassizii*). Desert tortoise habitat is defined in the *2008 Ely District record of decision and approved resource management plan* as generally below 4,000 feet in elevation in the Mojave Desert (Bureau of Land Management 2008). This coincides with the U.S. Geological Survey desert tortoise habitat model rating of approximately 0.6 or higher within these two allotments (Nussear et al. 2009). Desert tortoise habitat is confined to Kane Springs Valley and Wash through the Boulder Spring Allotment extending just into the Lower Riggs Allotment, and ranging in elevation from 3,300 feet to 4,120 feet. The Lower Riggs Allotment contains 125 acres of mapped desert tortoise habitat, while the Boulder Spring Allotment contains 9,674 acres; of those, 23 acres in the Lower Riggs Allotment and 5,464 acres in the Boulder Spring Allotment have burned since 2005. There is no designated critical habitat within either allotment.

The habitat is characteristic of the Mojave Desert biome. The dominant vegetation consists of North American Warm Desert Wash, Sonora-Mojave Creosotebush-White Bursage Desert Scrub, Sonora-Mojave Mixed Salt Desert Scrub, Inter-Mountain Basins Semi-Desert Grassland, Mojave Mid-Elevation Mixed Desert Scrub, and Inter-Mountain Basins Semi-Desert Shrub Steppe. Large portions of both allotments burned in 2005 and were partially aerial seeded in January 2006 as described in Section 3.1. These same areas were partially burned again in 2011.

Both allotments are located within the desert tortoise Northeastern Mojave Recovery Unit. Line distance sampling for estimating range-wide desert tortoise density for the most recent 10 years of available data (2004-2014) for the recovery unit range from  $1.42 \pm 0.342$  (2004) to  $4.4 \pm 1.8$  (2014) tortoises/km<sup>2</sup>. The overall trend in adult desert tortoise abundance for the recovery unit is positive (Table 3.3.3.1). The Northeastern Mojave Recovery Unit is the only one of five recovery units in the Mojave with a net increase in abundance from 2004-2014 (U.S. Fish and Wildlife Service 2006, 2009, 2012a, 2012b, 2013, 2014, 2015).

**Table 3.3.3.1.** Estimated adult Mojave desert tortoise (*Gopherus agassizii*) density and abundance in the Northeastern Mojave Recovery Unit and in the Mojave Desert overall in 2014, and change in abundance between 2004 and 2014 based on multi-year trends in density/km<sup>2</sup> (U.S. Fish and Wildlife Service 2015).

Recovery Unit	Surveyed Area (km <sup>2</sup> )	Density (SE) <sup>a</sup>	2004 Abundance (SE)	2014 Abundance (SE)	Change in Abundance (SE)
NE Mojave	4,160	4.4 (1.8)	4,920 (2,190)	18,220 (8,109)	13,300 (5,919)
Overall	25,678		126,346 (41,292)	85,686 (28,004)	-40,660 (13,288)

<sup>a</sup>Standard Error  $\pm$ .

There are three livestock water-haul locations in desert tortoise habitat within the Boulder Spring Allotment, which are fairly evenly distributed throughout the habitat from north to south. A non-functioning water pipeline also traverses desert habitat within this allotment. There are no range improvements in desert tortoise habitat within the Lower Riggs Allotment.

### 3.3.3.2 Environmental Consequences

#### **Proposed Action**

The revised recovery plan for the Mojave population of the desert tortoise (U.S. Fish and Wildlife Service 2011) addresses livestock grazing under Recovery Action 2.16 *Minimize impacts to tortoises from livestock grazing* stating, “Grazing by livestock (cattle and sheep) affects desert tortoises through crushing animals or their burrows, destroying or altering vegetation (which may introduce weeds and change the fire regime), altering soil, and competing for food (Boarman 2002). There is currently no evidence that cattle grazing will restore habitat or prevent fire in Mojave Desert environments.”

Recent research, however, indicates that moderate grazing is effective in reducing fuel loading, especially fine fuels, in arid rangelands, reducing the probability, severity, continuity, and size of wildfires (Davies et al. 2010). Germano et al. (2001) discuss management of exotic grasses in California's southern San Joaquin Valley in conserving declining species by maintaining livestock grazing, while acknowledging that livestock may have originally contributed to the introduction of exotic plants. The 2005 and 2006 Southern Nevada Complex fires and fires in Utah and Arizona burned over one million acres in the northeastern Mojave Desert, including 23 acres of desert tortoise habitat in the Lower Riggs Allotment and 5,464 acres in the Boulder Spring Allotment. Non-native annual grasses, as well as native purple 3-awn proliferate in some portions of the burned areas of both allotments during high precipitation years, creating a dense cover of fine fuels. A case study examining the Murphy Wildland Fire Complex on the Idaho-Nevada border southwest of Twin Falls, Idaho in July 2007 (Launchbaugh et al. 2008) concluded that livestock grazing “applied at moderate utilization levels has limited or negligible effects on fire behavior” under extreme fire conditions, but “when weather and fuel-moisture conditions are less extreme, grazing may reduce the rate of spread and intensity of fires allowing for patchy burns with low levels of fuel consumption.” In response to the 2005 and 2006 fires, the Mojave Desert Initiative, a collaboration of government agencies and other partners, was established to address the issue of wildfire and invasive species in the northeastern Mojave Desert.

The recovery plan goes on to recommend that the U.S. Fish and Wildlife Service collaborate with and assist grazing managers “to develop experimental application of more flexible grazing practices, such as allowing or reducing grazing during specific times of the year (*e.g.*, after ephemeral forage is gone or winter only) or under certain environmental conditions (*e.g.*, following a specified minimum amount of winter rain), in order to investigate the compatibility of grazing with desert tortoise populations.” It is further suggested that these experimental applications occur outside desert tortoise conservation areas.

The proposed action incorporates some of the recommendations of this recovery action through implementation of best management practices and terms and conditions, and application of the

Mojave-Southern Great Basin Resource Advisory Council standards. The proposed action also includes reasonable and prudent measures with terms and conditions for desert tortoise from the Ely District Resource Management Plan Programmatic Biological Opinion (Bureau of Land Management 2008). Both allotments are outside of desert tortoise critical habitat units and areas of critical environmental concern.

The proposed action is designed to better utilize available forage, more evenly distribute cattle, and maintain and improve rangeland health. Key management actions include:

- changing the season of use on the Lower Riggs Allotment to year-long,
- establishing allowable use levels of perennial upland vegetation not to exceed 40% of current annual growth,
- better managing the distribution of cattle through watering locations and herding, and
- rangeland monitoring.

Incorporation of these management actions would allow for better distribution and management of grazing on the Lower Riggs and Boulder Spring Allotments, allowing for moderate grazing overall and focused seasonal grazing on annual, non-native grasses and early serial, perennial grasses. The latter would help reduce the accumulation of fine fuels and dense plant cover, especially in high precipitation years, and may help reduce the probability, severity, continuity, and size of wildfires. Reducing fire frequency would help in reducing the further establishment of fire-adapted, non-native plants, a problem noted by Averill-Murray et al. (2012) in conserving Mojave desert tortoise populations. Drake et al. (2015) documented that adult Mojave desert tortoises continue to use habitat burned once by wildfire, and suggest that continued management of burned habitat may contribute toward recovery of the species in the face of other sources of habitat loss.

Improving livestock distribution would also achieve more uniform utilization within the allotments, including in desert tortoise habitat, reduce impacts to soils, and maintain adequate forage and cover for wildlife. Focused seasonal grazing on annual, non-native grasses and early serial, perennial grasses would reduce the negative effects of thick herbaceous cover on vertebrate species that evolved in sparsely vegetated desert habitats (Germano et al. 2001).

Both the Lower Riggs and Boulder Spring Allotments contain habitat for the federally threatened desert tortoise. Consultation under Section 7 of the Endangered Species Act is concurrently being conducted with the U.S. Fish and Wildlife Service.

### **No Action Alternative**

Under the no action alternative, grazing management on the allotments would remain unchanged. There would be no change to the season of use for the Lower Riggs Allotment term permit and cattle would not be able to take full advantage of early spring forage availability during this period of high palatability. This would limit the ability to use livestock on the Lower Riggs Allotment as a tool to reduce the accumulation of fine fuels and dense plant cover, especially in burned areas. This could result in increased fuels during high moisture years, particularly from invasive annual grasses, elevating the potential intensity and severity of wildfires, which could

impact desert tortoise habitat on the allotment. New terms and conditions and BMPs designed to maintain rangeland health standards, improve rangeland health in the burned portions of the allotments, achieve better distribution of cattle, and reduce fuel loading would not be implemented. Some reasonable and prudent measures with terms and conditions for desert tortoise from the Ely District Resource Management Plan Programmatic Biological Opinion would not go into effect (Bureau of Land Management 2008).

### **No Grazing Alternative**

Eliminating grazing would benefit desert tortoises both directly and indirectly in the absence of wildfire. However, eliminating grazing in combination with stressors of anthropogenic climate change would also result in an increase in fuels, especially fine fuels from invasive annual grasses, increasing the potential for catastrophic fire directly affecting desert tortoises and their habitat (Abatzoglou and Kolden 2011). Drake et al. (2015) concluded that, “Preventing once-burned habitats from burning multiple times by reducing fine fuels produced by non-native annual grasses is essential for protecting habitat for the recovery of the species [desert tortoise].”

Boarman (2002) stated that there is “surprisingly little information... available on the effects of grazing on the Mojave Desert ecosystem.” He also noted that, “Differences in rainfall patterns, nutrient cycling, and foraging behavior of herbivores and how these three factors interact make applications of research from other areas of limited value in understanding the range ecology of the Mojave Desert.”

### **3.3.4 Special Status Animal Species (other than those listed, proposed, or candidates for listing under the Endangered Species Act)**

#### **3.3.4.1 Affected Environment**

The Lower Riggs and Boulder Spring Allotments are primarily within the Kane Spring Wash Watershed. The Lower Riggs Allotment also contains small portions of the Meadow Valley Wash North and South Watersheds, while the Boulder Spring Allotment just skirts the western boundary of the Meadow Valley Wash South Watershed. The elevation ranges from 3,300 feet in Kane Springs Valley to 6,600 feet in the Delamar Mountains. Kane Springs Valley and Wash bisects both allotments and is flanked by the Delamar Mountains on the northwest and the Meadow Valley Mountains on the southeast.

The habitat is characteristic of the Mojave Desert biome. The dominant vegetation consists of North American Warm Desert Wash, Sonora-Mojave Creosotebush-White Bursage Desert Scrub, Inter-Mountain Basins Semi-Desert Grassland, Mojave Mid-Elevation Mixed Desert Scrub, Inter-Mountain Basins Semi-Desert Shrub Steppe, Great Basin Xeric Mixed Sagebrush Shrubland, and Inter-Mountain Basins Big Sagebrush Shrubland at the lower and mid elevations, and Inter-Mountain Basins Montane Sagebrush Steppe, Great Basin Pinyon-Juniper Woodland, Mogollon Chaparral, and Rocky Mountain Gambel Oak-Mixed Montane Shrubland at the higher elevations. Riparian habitat consists of North American Warm Desert Lower Montane Riparian Woodland and Shrubland, and Great Basin Foothill and Lower Montane Riparian Woodland and

Shrubland. Large portions of both allotments burned in 2005 and were partially aerial seeded in January 2006 as described in Section 3.1. These same areas were partially burned again in 2011.

The variety of habitats from lowland desert wash to mid-elevation shrubland habitats to higher elevation forested habitats, as well as riparian areas provide habitat for a variety of BLM sensitive species. Bureau of Land Management sensitive species recorded on or in similar habitats near the allotments (i.e., within approximately 10 miles) are listed in Table 3.3.4.1 and in Appendix VI.

**Table 3.3.4.1** Bureau of Land Management sensitive animal species documented on the Lower Riggs and Boulder Spring Allotments or in similar habitats within approximately 10 miles of the allotments.

Common Name	Scientific Name
<b><i>Mammals</i></b>	
Big brown bat	<i>Eptesicus fuscus</i>
California myotis	<i>Myotis californicus</i>
Desert bighorn sheep	<i>Ovis canadensis nelsoni</i>
Fringed myotis	<i>Myotis thysanodes</i>
Little brown myotis	<i>Myotis lucifugus</i>
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>
Pallid bat	<i>Antrozous pallidus</i>
Western pipistrelle	<i>Parastrellus hesperus</i>
<b><i>Birds</i></b>	
Brewer's sparrow X <sup>a</sup>	<i>Spizella breweri</i>
Ferruginous hawk O	<i>Buteo regalis</i>
Golden eagle C	<i>Aquila chrysaetos</i>
Greater sage-grouse (not present)	<i>Centrocercus urophasianus<sup>b</sup></i>
Loggerhead shrike C	<i>Lanius ludovicianus</i>
Sage thrasher O	<i>Oreoscoptes montanus</i>
Swainson's hawk O	<i>Buteo swainsoni</i>
Western burrowing owl O	<i>Athene cunicularia hypugaea</i>
<b><i>Reptiles</i></b>	
Banded gila monster	<i>Heloderma suspectum cinctum</i>
<b><i>Amphibians</i></b>	
Arizona toad	<i>Anaxyrus microscaphus<sup>c</sup></i>

## ***Fish***

No records.<sup>d</sup>

## ***Invertebrates***

No records.

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<sup>a</sup>Breeding bird criteria codes: O = observed, X = possible breeder, P = probable breeder, and C = confirmed breeder.

<sup>b</sup>The Lower Riggs and Boulder Spring Allotments are outside the range of greater sage-grouse.

<sup>c</sup>The Arizona toad is not currently listed as a BLM sensitive species; however, the Nevada Department of Wildlife included the species in its 2013 Wildlife Action Plan because of declining trend and hybridization of this highly fragmented species, and a lack of information on the species in Nevada (Wildlife Action Plan Team 2013).

<sup>d</sup>There are no records of fish occurring within the Lower Riggs and Boulder Spring Allotments and no connectivity with lower Meadow Valley Wash.

### 3.3.4.2 Environmental Consequences

#### **Proposed Action**

##### *Desert Bighorn Sheep*

Both the Lower Riggs and Boulder Spring Allotments contain desert bighorn sheep (*Ovis canadensis nelsoni*) occupied habitat in the Delamar and Meadow Valley Mountains. There is also unoccupied habitat in the Delamar Mountains within both allotments. The Mojave-Southern Great Basin Resource Advisory Council standards are achieved in all upland, unburned portions of both allotments. The standards are not achieved in the burned areas of the allotments, but due to factors other than cattle grazing.

Morgart (1990) found that dietary overlap between desert bighorn sheep and cattle was not significant, and bighorn sheep diets were more diverse. The Nevada Department of Wildlife's bighorn sheep management plan (2001) identifies livestock and wild horses, in many instances, as direct competitors with bighorn sheep for forage, water, and space, and emphasizes that it is important that, "habitats are managed to ensure land use objectives are achieved and that habitats are maintained in good to excellent ecological condition."

Disease transmission, specifically pneumonia, is also a concern for bighorn sheep. Although all ungulates, except llamas, carry some strains of the bacteria that are commonly lethal to bighorn sheep, *Pasteurella haemolytica*, experimental exposure of bighorn sheep to elk, deer, mountain goat, cattle, llama, and domestic goats has not resulted in pneumonia in bighorn sheep (Schommer and Woolever 2001).

## *Bats*

There are seven species of BLM sensitive bats that have been documented in the area of the Lower Riggs and Boulder Spring Allotments. Bats are nocturnal, feeding on a variety of insects and other invertebrates, including moths, beetles, ground-dwelling arthropods, and aquatic invertebrates. Depending on the species, they may roost in tree cavities, under exfoliating bark, in rock crevices, caves, abandoned mines, under bridges, and in buildings. They occupy a wide variety of habitats found on the allotments for roosting, foraging, and raising young, such as cliffs, springs, riparian, pinyon-juniper, desert shrub, and desert wash habitats.

The *Revised Nevada Bat Conservation Plan* (2006) makes no mention of cattle as a direct threat to bats, but lists pesticides, loss of riparian and aquatic habitats, roost disturbance, and availability of water as conservation issues. The BLM Ely District has an exotic plant management program and targeted use of approved rangeland pesticides. Each allotment contains a lotic riparian zone that was found to be in proper functioning condition. The Lower Riggs Allotment has eight small-game wildlife water developments, and the Boulder Spring Allotment has 13 small-game wildlife water developments providing ample sources of water. Cattle troughs in each allotment would have wildlife escape ramps installed to prevent bats and other wildlife from becoming entrapped. Cattle grazing may have an influence on invertebrate communities, but would be expected to have a negligible positive or negative effect on bat populations. There would be no permanent lighting that would draw insects, creating habitat foraging voids for bats, installed as part of the term permit renewals for these allotments.

## *Birds*

There are seven BLM sensitive bird species that have been documented in the area of the Lower Riggs and Boulder Spring Allotments.

### Brewer's sparrow

Brewer's sparrows (*Spizella breweri*) are sagebrush obligates and closely associated with landscapes dominated by big sagebrush (*Artemisia tridentata*) during the breeding season. In the Mojave Desert, they occur in sagebrush and montane sagebrush shrublands during the breeding season, but will use desert scrub habitats in winter. They are most likely to occur within 1 km of surface water. Brewer's sparrow populations in Nevada are declining due to degradation, loss, and fragmentation of sagebrush habitats. The *Nevada Comprehensive Bird Conservation Plan* identifies fire, invasive plants, pinyon-juniper expansion, and heavy grazing as habitat threats (Great Basin Bird Observatory 2010).

### Ferruginous hawk

Ferruginous hawks (*Buteo regalis*) in Nevada prefer open, rolling sagebrush near the pinyon-juniper interface for breeding, and mostly use elevated nest sites. Their populations fluctuate with prey populations, primarily jackrabbits (*Lepus* sp.) and cottontails (*Sylvilagus* sp.). Ferruginous hawks experienced widespread population declines in the 1980s. In Nevada, they prefer relatively remote valleys where native vegetation is mostly intact and human activities are

minimal. They are more common in the Mojave during the non-breeding season. The *Nevada Comprehensive Bird Conservation Plan* lists factors negatively affecting prey populations, such as invasive plants, habitat fragmentation, fire, and development, and disturbance during nesting as threats (Great Basin Bird Observatory 2010).

### Golden eagle

Golden eagles (*Aquila chrysaetos*) are year-round residents of Nevada. Some of their highest densities are in shrub-steppe habitats. The only habitats they routinely avoid are forests, large agricultural areas, and urban areas. They usually nest on cliffs in the Mojave. Limiting factors are prey densities and availability of nest sites near suitable prey populations. They prey on a variety of species, but jackrabbits, cottontails, and larger rodents such as antelope ground squirrels (*Ammospermophilus nelsoni*) are staples. Threats include reductions in prey populations due to degradation and loss of rangelands, renewable energy development, electrocution, vehicles collisions, poisoning, and human disturbance near nest sites (Great Basin Bird Observatory 2010). There is one known nest site within 1.5 miles of the Lower Riggs and Boulder Spring Allotments in the Meadow Valley Mountains.

### Loggerhead shrike

Loggerhead shrikes (*Lanius ludovicianus*) are year-round residence of Nevada. They inhabit ecotones, grasslands, and other open habitats and feed on a variety of invertebrate and vertebrate prey. Their populations have declined continent-wide in recent decades. Changes in land-use practices, spraying of biocides, and competition with species more tolerant of human-induced changes appear to be the major factors for their decline (Reuven 1996).

### Sage thrasher

The sage thrasher (*Oreoscoptes montanus*), like the Brewer's sparrow, is considered a sagebrush obligate and breeds predominantly in shrub-steppe dominated by big sagebrush, but can also be found breeding in salt desert (especially where it intergrades with sagebrush or where black greasewood (*Sarcobatus vermiculatus*) predominates) and montane shrublands. The *Nevada Comprehensive Bird Conservation Plan* identifies fire, invasive plants, pinyon-juniper expansion, and heavy grazing as habitat threats (Great Basin Bird Observatory 2010).

### Swainson's hawk

The Swainson's hawk (*Buteo swainsoni*) is a long-distance, neotropical migrant, breeding throughout Nevada and migrating to Argentina in the winter. Landscapes with large riparian nesting trees, agricultural fields with crops that do not grow much higher than native grasses, and open shrublands within relatively close proximity are their preferred habitat in Nevada. The loss of traditional alfalfa fields to other uses, and loss of nesting trees within several kilometers of suitable foraging areas are probably the greatest threats in Nevada. Pesticide use on the wintering grounds has caused severe die-offs (Great Basin Bird Observatory 2010).

### Western burrowing owl

In Nevada, the western burrowing owl (*Athene cunicularia hypugaea*) occurs in sagebrush, grassland, and salt desert scrub habitats. Burrowing owls prefer treeless, open areas within shrub-steppe and desert biomes, generally inhabiting gently-sloping areas, characterized by low, sparse vegetation. They are often associated with high densities of burrowing mammals, and prefer to use burrows excavated by other animals. They are primarily crepuscular (active at dusk and dawn), but may be active throughout the day. The population trend of burrowing owls in Nevada is uncertain. Threats include loss of habitat to urbanization and agriculture, reduction in populations of burrowing animals, and disturbance of breeding colonies (Great Basin Bird Observatory 2010).

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Brewers sparrows and sage thrashers could be negatively affected by cattle grazing; however by establishing allowable use not to exceed 40% of current annual growth under a moderate grazing regime, it is anticipated that impacts would be minimal. The western burrowing owl could be negatively impacted by cattle through disturbance at breeding colonies and the crushing of burrows; however the *Nevada Comprehensive Bird Conservation Plan* did not identify cattle as a threat (Great Basin Bird Observatory 2010). It is not anticipated that the prey base of ferruginous hawks, golden eagles, Swainson's hawks, or loggerhead shrikes would be negatively affected under a moderate grazing regime.

It is anticipated that implementation of best management practices and terms and conditions, and application of the Mojave-Southern Great Basin Resource Advisory Council standards would result in minimal impacts to BLM sensitive migratory birds. No species population level effects would be anticipated.

### *Reptiles and Amphibians*

#### Banded gila monster

The Lower Riggs and Boulder Spring Allotments are in the range of and contain habitat for the banded gila monster (*Heloderma suspectum cinctum*). They are found in desert scrub habitats, semi-desert grasslands, and occasionally woodlands along mountain foothills. The gila monster is the largest lizard in North America and one of only two venomous lizards in the world. They eat small mammals, eggs (primarily of ground-nesting birds), reptiles, lizards, insects, and carrion. The reason for their special status in loss, fragmentation, and degradation of habitat, illegal collection, limited range in Nevada, low reproductive rate, and a lack of knowledge about the species (Wildlife Action Plan Team 2013). In a study in southwestern Utah, Beck (1990) found that all gila monsters sheltered in rocky areas, habitats that are generally inaccessible to cattle.

#### Arizona toad

The Arizona toad (*Anaxyrus microscaphus*) is not currently listed as a BLM sensitive species; however, the Nevada Department of Wildlife included the species in its 2013 Wildlife Action

Plan because of declining trend and hybridization of this highly fragmented species, and a lack of information on the species in Nevada (Wildlife Action Plan Team 2013). The Arizona toad has been documented in lower Meadow Valley Wash. Unknown toad tadpoles were observed in the Upper and Lower Riggs Springs lotic riparian zone, which was found to be in proper functioning condition.

### *Summary*

The proposed action is designed to better utilize available forage, more evenly distribute cattle, and maintain and improve rangeland health. Key management actions include:

- changing the season of use on the Lower Riggs Allotment to year-long,
- establishing allowable use levels of perennial upland vegetation not to exceed 40% of current annual growth,
- better managing the distribution of cattle through watering locations and herding, and
- rangeland monitoring.

Incorporation of these management actions would allow for better distribution and management of grazing on the Lower Riggs and Boulder Spring Allotments, allowing for moderate grazing overall and focused seasonal grazing on annual, non-native grasses and early serial, perennial grasses. The latter would help reduce the accumulation of fine fuels and dense plant cover, especially in high precipitation years, and may help reduce the probability, severity, continuity, and size of wildfires. Reducing fire frequency would help in reducing the further establishment of fire-adapted, non-native plants.

Improving livestock distribution would also achieve more uniform utilization within the allotments, reduce impacts to soils, and maintain adequate forage and cover for wildlife. Focused seasonal grazing on annual, non-native grasses and early serial, perennial grasses would reduce the negative effects of thick herbaceous cover on vertebrate species that evolved in sparsely vegetated desert habitats (Germano et al. 2001).

Loss, fragmentation, and degradation of habitat, fire, and invasive plants are specifically listed as threats to a number of the special status species that occur or have potential to occur on the Lower Riggs and Boulder Spring Allotments. Potentially reducing the probability, severity, continuity, and size of wildfires through a better distributed, moderate grazing regime would benefit special status species.

### **No Action Alternative**

Under the no action alternative, grazing management on the allotments would remain unchanged. There would be no change to the season of use for the Lower Riggs Allotment term permit and cattle would not be able to take full advantage of early spring forage availability during this period of high palatability. This would limit the ability to use livestock on the Lower Riggs Allotment as a tool to reduce the accumulation of fine fuels and dense plant cover, especially in burned areas. This could result in increased fuels during high moisture years, particularly from invasive annual grasses, elevating the potential intensity and severity of wildfires, which could

impact desert tortoise habitat on the allotment. New terms and conditions and BMPs designed to maintain rangeland health standards, improve rangeland health in the burned portions of the allotments, achieve better distribution of cattle, and reduce fuel loading would not be implemented.

### No Grazing Alternative

Eliminating grazing would likely benefit some special status species, and have no effect on others. This would result from changes in vegetation cover and structure, and ecosystem function over time (i.e., natural succession) (Krueper et al. 2003). Eliminating grazing in combination with stressors of anthropogenic climate change would also result in an increase in fuels, especially fine fuels from invasive annual grasses, increasing the potential for catastrophic fire affecting special status species habitats. Large burned areas would reduce overall biodiversity in the Mojave ecosystem with a long recovery time and increase the potential of conversion to invasive annual grasses (Abatzoglou and Kolden 2011).

### 3.3.5 Wilderness

#### 3.3.5.1 Affected Environment

The Lower Riggs and Boulder Spring Allotments contain 1,562 acres and 3,511 acres of the Meadow Valley Range Wilderness, respectively (Appendix A, Map #2 of SDD in Appendix II).

Few range developments (fences) currently exist within the allotments (also see Appendix II of this EA for more information on wilderness and grazing).

Table 3.3.4.1. Range Improvements Associated with the Lower Riggs and Boulder Spring Allotments that are Located in the Meadow Valley Range Wilderness

Wilderness	Allotment	Acres of Wilderness within Each Allotment	Identified Developments in Wilderness	Range Improvement Project #
Meadow Valley Range	Lower Riggs	1,562 acres	- - - - -	- - - - -
	Boulder Spring	3,511 acres	Fence (0.4 mi) T.09 S., R.65 E., Sec. 13, MDBM.	None known
			Grapevine/Henry Wilson Fence – .5 miles in Boulder Spring Allotment and .95 miles in Henrie Complex Allotment T.9 S., R.65 E., sec. 22, 23, and 26, MDBM.	573514/570410
			Kane Springs Elgin Fence (0.1 mi) T.8 S., R.66 E., sec. 16, MDBM.	570589

Activities and necessary facilities used to support livestock grazing would be permitted to continue in wilderness. Planning related to grazing operations would be guided by:

- Congressional Grazing Guidelines (House Report 105-405 Appendix L, 1990) (see [Appendix 1](#)),
- BLM Manual 6340 (Management of Designated Wilderness Areas (Public)) (dated 7/13/2012), and
- Delamar Mountains, Meadow Valley Range and Mormon Mountains Wilderness - Final Wilderness Management Plan and Environmental Assessment. December 16, 2009.

### *Wilderness character*

The Wilderness Act defines wilderness and mandates that the primary management direction is to preserve wilderness character. The definition of wilderness is found in Section 2(c) of the Wilderness Act, and the qualities of wilderness character are commonly described as: untrammeled (untrammeled is defined as unhindered and free from modern human control or manipulation), naturalness, undeveloped, outstanding opportunities for solitude or a primitive unconfined form of recreation and other features of scientific, educational, scenic or historical value.

### *Untrammeled*

Few trammeling activities occur within this wilderness and include management of wildland fire and weeds, emergency stabilization and rehabilitation activities, small-scale surface disturbance restoration, range developments, and livestock grazing.

### *Natural*

The naturalness of the wilderness is mostly preserved. The Meadow Valley Range is boomerang-shaped, measuring approximately ten miles east to west, and arching about 36 miles from north to south. It consists of three major landforms: the long ridgeline of the Meadow Valley Mountains, a large bajada beginning high on the main ridge sloping easterly towards Meadow Valley Wash, and the Bunker Hills five miles from the southern section of the central bajada.

The various climates and elevations in the area provide important habitat for wildlife. Vegetation consists of low desert shrub with the exception of the northern section of the Meadow Valley Mountains, which is pinyon and juniper forest. Some changes to the native vegetation composition have occurred, including the introduction of the non-native annual red brome over portions of the wilderness.

### *Undeveloped*

Range developments (fences, developed springs, troughs) impair the undeveloped quality of the wilderness. Other developments are scattered across the wilderness includes: unauthorized vehicle routes, and wildlife water developments. Generally these developments are few and far between when considering the vastness of the landscape.

### *Outstanding opportunities for solitude or a primitive form of recreation*

Visitors can enjoy outstanding opportunities for solitude and primitive, unconfined recreation in the wilderness. The varied topography of the wilderness — mountains and canyons — provide excellent opportunities for solitude as does the sheer size of this wilderness. Outstanding recreation opportunities for hiking, exploration and camping are present. The long ridgeline offers many peaks, narrow canyons and passes to explore. Sunflower Mountain, Grapevine Spring, Hackberry and Virgo Canyons make good day hiking destinations. Rock scrambling terrain abounds. Only the 14-day stay limit for camping confines primitive recreational opportunities.

### 3.3.5.2 Environmental Consequences

#### **Proposed Action**

##### *Untrammelled*

Trammeling activities would continue in the form of vegetation removal by livestock in all use areas overlapping wilderness. However, by implementing the Proposed Action, the BMPs (particularly the allowable use level) would limit this effect.

In addition, livestock access into wilderness is extremely limited due to the rugged, relatively steep and inaccessible terrain which, incidentally, lacks water for livestock grazing (Appendix A, Map #2 of SDD in Appendix II of EA). Consequently, use within wilderness areas would be relatively inconsequential.

##### *Natural*

A reduced season of use would allow for improved naturalness by helping to promote plant physiological characteristics of native perennial plants in a positive manner. This is particularly important given the establishment of purple 3-awn, red brome, and cheatgrass in the burned portions of the wilderness.

##### *Undeveloped*

Inspection and routine maintenance of range developments within the wilderness would be accomplished on foot or horseback; therefore, those actions would not impact the undeveloped quality. Major maintenance or repair for which motorized equipment or mechanized transport would be authorized (e.g., replacement of pipeline, or fence repairs) would negatively impact the undeveloped character for the duration of the motorized or mechanized use. It is anticipated that the use of motorized vehicles or mechanical transport would be infrequent and the minimum tool would be determined through the use of an MRDG. See Appendix IV for a list of range developments and wilderness-specific maintenance information.

*Outstanding opportunities for solitude or a primitive form of recreation*

Occasionally, visitors may encounter permittees and cattle. However, these impacts limited as most of the grazing in these allotments occurs outside wilderness.

*Other Features of Value*

Continued cattle grazing in and around the wilderness is unlikely to impact other features of value in this area. No new impacts are proposed that could impact integral features of ecological, geological, scientific, educational, scenic or historic value.

**No Action Alternative**

All of the mandatory terms and conditions of the current permit, as displayed under section 2.1.1, would remain unchanged. In addition, the term and condition in section 2.1.2 designed to control permitted range related specific activities while mitigating associated impacts within wilderness, as described in BLM Handbook 6340 for grazing facilities, would not be implemented. This would defeat the objective of striving to meet minimum requirements for the administration of wilderness, as set forth in BLM Manual 6340 (1.6.B.3.c, p. 1-16), in an effort to preserve wilderness character for the purpose of the Wilderness Act.

*Untrammelled*

Under the no action alternative, grazing administration and use would remain the same as it is currently.

*Naturalness and primeval character*

Naturalness would not either be degraded or improved under this alternative.

*Undeveloped*

The undeveloped quality would not either be degraded or improved under this alternative.

*Outstanding opportunities for solitude or a primitive form of recreation.*

Occasionally, visitors may encounter grazing permittees and cattle.

**No Grazing Alternative**

*Untrammelled*

No grazing would occur on the allotment under this alternative and, thus, no trammeling impacts to the vegetation or soils would occur.

### *Natural*

Naturalness would improve as grazing would not be occurring. The exception would be [targeted grazing on cheatgrass, if/where it occurs would not be benefiting naturalness by its removal/reduction].

### *Undeveloped*

Under the No Grazing Alternative, the undeveloped quality would be improved as range developments within wilderness are no longer needed, and subsequently removed. Occasional maintenance of the range developments with motorized equipment or mechanical transport would not need to occur.

### *Outstanding opportunities for solitude or a primitive form of recreation*

No impacts would occur to the Outstanding Opportunities quality.

## **3.3.6 Socioeconomics**

### 3.3.6.1 Affected Environment

The local economy of Lincoln County has been dependent on the areas farming and ranching community and this includes the county tax base. The farming and ranching life style has been – and continues to be – important in the county and State of Nevada.

### 3.3.6.2 Environmental Consequences

#### **Proposed Action**

Lifestyles of local residents would not be impacted. The proposed term permit renewals would provide economic benefits for the livestock permittees in this area by improving the efficiency of their overall operation. The proposed permit renewals would facilitate livestock management and could provide stability to both livestock operations.

The permittees would not have to incur the cost of removing their livestock from the Lower Riggs allotment for the five week period listed in the current permit (3/25 – 4/30); therefore, the Proposed Action would be economically beneficial.

#### **No Action**

Under the No Action Alternative, no changes would be made to the permit. The permittees would have to remove their livestock from the Lower Riggs Allotment for the period described in the current permit (3/25 – 4/30). This would be a continued added cost incurred in their operation; and would not be economically beneficial.

## **No Grazing**

The economic status (net income) of the permittee would be adversely affected, and may place the permittee into an economic hardship. This is especially true for the Whiteside family who rely heavily on income from the livestock industry.

## **4.0 Cumulative Effects**

### **4.1 Past Actions**

Livestock grazing operations in the planning area developed during the mid to late-1800s. The Ely PRMP/FEIS summarizes livestock grazing history in the region on pages 3.16–1 to 3.16–3. Range improvements have occurred on the allotments to improve grazing management and include fencing and stockwater developments.

Some of the burned portions of the allotments were aerially seeded in 2006 under an Emergency Stabilization and Rehabilitation Plan. A majority of all seeded acreage is located in rugged, relatively steep and inaccessible terrain which lacks water for livestock grazing. A description of fire history dating back to 1998 is found in the Background section of the SDD in Appendix II.

### **4.2 Present Actions**

Currently, two permittees hold the grazing privileges on the Lower Riggs Allotment while one permittee holds the privileges on the Boulder Spring Allotment.

Because a portion of the allotments contain the Meadow Valley Range Wilderness Area, widely dispersed incidental recreation occasionally occurs within the allotment in the form of wildlife viewing, photography and hiking.

### **4.3 Reasonably Foreseeable Future Actions**

The aforementioned widely dispersed incidental recreation will continue into the future. Livestock grazing will continue on the allotment. Upon expiration, the permit will be considered for renewal through site-specific NEPA analysis.

### **4.4 Cumulative Effects Summary**

#### **4.4.1 Proposed Action**

According to page 36 of the 1994 BLM publication *Guidelines for Assessing and Documenting Cumulative Impacts*, the cumulative analysis should be focused on those issues and resource values where the incremental impact of the Proposed Action results in a meaningful change in the cumulative effect from other past, present and reasonably foreseeable future actions within the Cumulative Effects Study Area (CESA).

Additionally, the guidance provided in The National BLM NEPA Handbook H-1790-1 (2008), on page 57, for analyzing cumulative effects issues states, “determine which of the issues identified for analysis may involve a cumulative effect with other past, present, or reasonably foreseeable future actions. If the Proposed Action and alternatives would have no direct or indirect effects on a resource, you do not need a cumulative effects analysis on that resource.”

The CESA, regarding livestock grazing, is defined as the Kane Springs Wash (#217), Meadow Valley Wash South (#214 B), and Meadow Valley Wash North (#214 A) (Appendix I, Map #1).

The Proposed Action in conjunction with the past, present and reasonable foreseeable future actions would result in no noticeable overall negative changes to the affected environment. In fact, grazing under the proposed permit would promote resource benefits as described under each “Environmental Consequences” section for the Proposed Action with the understanding that adjustments to grazing management would occur, when deemed necessary, to achieve resource objectives. This is in accordance with federal regulations which state: “The authorized officer shall take appropriate action under subparts 4110, 4120, 4130, and 4160 of this part as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management needs to be modified...(43 CFR §4180.1).”

In addition, a comprehensive cumulative impacts analysis can be found on pages 4.28-1 through 4.36-1 of the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007).

In summary, no cumulative impacts of concern are anticipated as a result of the Proposed Action in combination with any other existing or planned activity.

#### 4.4.2 No Action Alternative

It is anticipated that the No Action Alternative would have the same cumulative effect as the Proposed Action, above.

#### 4.4.3 No Grazing Alternative

The No Grazing Alternative will not have any cumulative effects on rangeland health.

## **5.0 Proposed Mitigation and Monitoring**

### **5.1 Proposed Mitigation**

Outlined design features incorporated into the Proposed Action are sufficient. No additional mitigation is proposed based on the analysis of environmental consequences.

### **5.2 Proposed Monitoring**

Appropriate monitoring has been included as part of the Proposed Action. No additional monitoring is proposed as a result of the impact analysis.

## **6.0 Consultation and Coordination**

### **6.1 List of Preparers - BLM Resource Specialists**

Domenic A. Bolognani	Rangeland Management Specialist/Project Lead
Chris Mayer	Supervisory Rangeland Management Specialist
Todd Trapp	Wildlife; Special Status Species; Migratory Birds
Andy Gault	Water Quality (Drinking/Ground); Water Resources (Water Rights); Wetlands/Riparian Zones
Cameron Boyce	Noxious and Invasive, Non-native Species; Floodplains; Watersheds
Elvis Wall	Native American Cultural Concerns
Randy Johnson	Hazardous & Solid Waste/Safety
Lisa Domina	Recreation, Visual Resources, Transportation Access
Emily Simpson	Wilderness; WSA; Lands with Wilderness Characteristics
Harry Konwin	Cultural Resources; ACEC's designated for important Historic and Cultural areas; Heritage Special Designations (Historic Trails, Archaeological Areas and Districts); Paleontological Resources
Kyle Teel	Vegetative Resources (Forest or Seed Products); Fire Management
Julie Sur-Pierce	Socioeconomics Environmental Justice

### **6.2 Persons, Groups or Agencies Consulted**

On June 2, 2016, the BLM sent a memorandum to the U.S. Fish and Wildlife Service requesting formal Section 7 consultation, regarding the proposed action, for the federally threatened Agassiz's desert tortoise (*Gopherus agassizii*).

#### **Public Notice of Availability**

The Ely District Office mails an annual Consultation, Cooperation and Coordination (CCC) letter, for various program areas, to individuals and organizations who have previously expressed an interest in federal actions on the Ely District. Through the CCC letter, the public has the opportunity to submit a request to be a 2016 interested public for grazing management actions on the Ely BLM District; and, to specify the specific grazing management actions and grazing allotments in which they are interested. From the gathered information, an Interested Publics Mailing List is developed. Grazing permittees are automatically included on the Interested Public Mailing List for any allotment on which they have a grazing permit.

In late December 2015, the aforementioned Ely BLM annual CCC letter was mailed, and requested a deadline of January 29, 2016 for all responses.

On May 22, 2015, the permittees of record were sent letters informing them of the proposed term permit renewal process, associated with their permit on their respective allotments. No comments were received.

On October 19, 2015, the proposal to fully process the term permit associated with livestock grazing on the Lower Riggs and Boulder Spring Allotments was posted on the following E-Gov for Planning (ePlanning) and National Environmental Policy Act (NEPA) website:  
[https://www.blm.gov/epl-front-office/eplanning/nepa/nepa\\_register.do](https://www.blm.gov/epl-front-office/eplanning/nepa/nepa_register.do).

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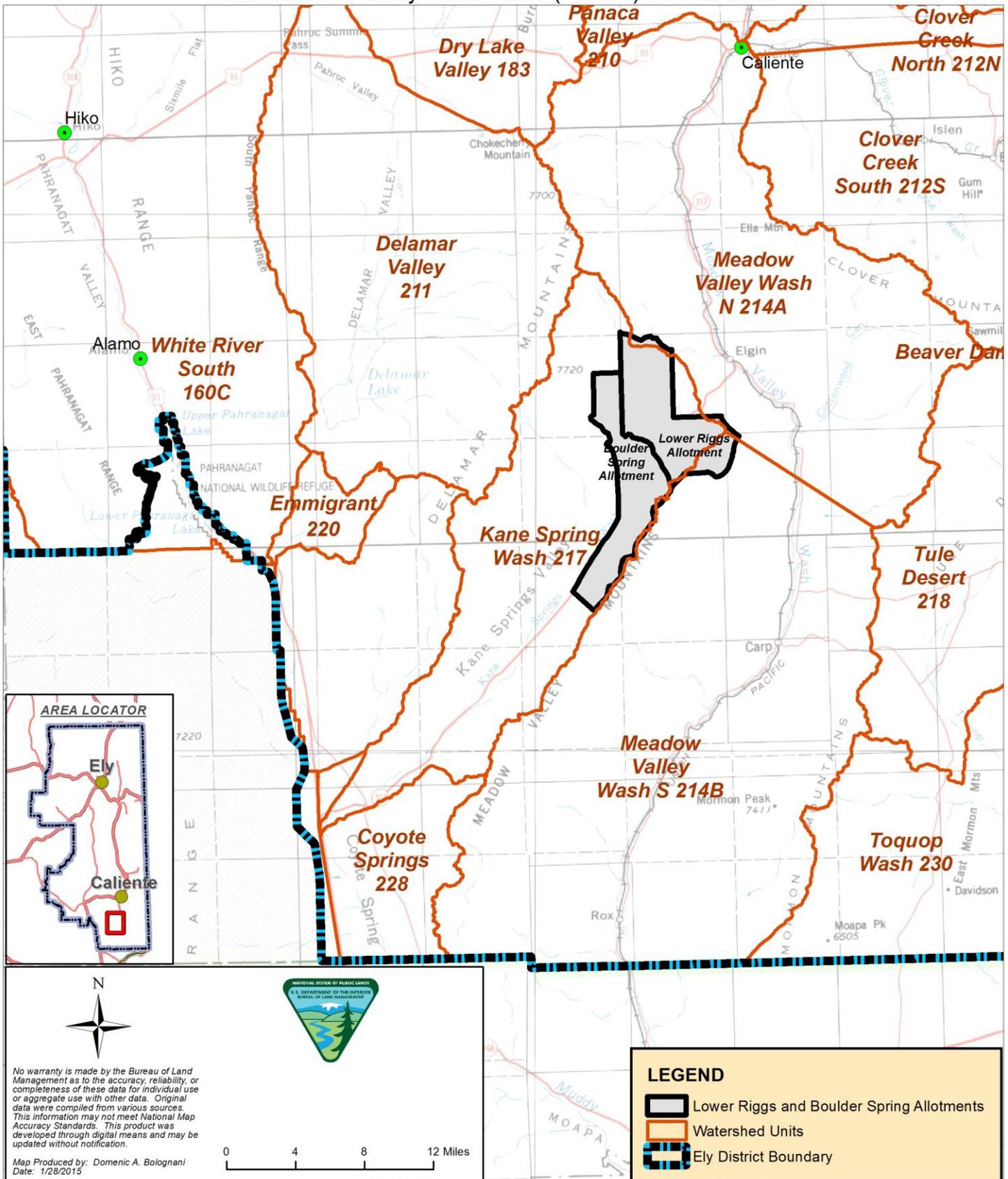
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**APPENDIX I**  
(EA)

MAP(S)

Location of the Lower Riggs (#01087) and Boulder Spring #21009) Allotments with Respect to the Kane Springs Wash #217, Meadow Valley Wash South (#214 B), and Meadow Valley Wash North (#214 A) Watersheds.



**APPENDIX II**  
(EA)

STANDARDS DETERMINATION DOCUMENT

# STANDARDS DETERMINATION DOCUMENT

Lower Riggs (#01087) and Boulder Spring (#21009) Allotments

## Standards and Guidelines Assessment

The Mojave-Southern Great Basin Standards and Guidelines for grazing administration were developed by the Mojave-Southern Great Basin Resource Advisory Council (RAC) and approved by the Secretary of the Interior on February 12, 1997.

Standards of rangeland health are expressions of physical and biological conditions required for sustaining rangelands for multiple uses. Guidelines point to management actions related to livestock grazing for achieving the Standards. Guidelines are options that move rangeland conditions toward the multiple use Standards. Guidelines are based on science, best rangeland management practices and public input. Therefore, determination of rangeland health is based upon conformance with these standards. Thus Guidelines indicate the types of grazing methods and practices for achieving the Standards for multiple use, are developed for functional watersheds and implemented at the allotment level.

This Standards Determination document evaluates livestock grazing management and achievement of the Standards and Guidelines for the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments. It does not evaluate the Standards or Guidelines for Wild Horses and Burros. Publications used in assessing and determining achievement of the Standards include: Ely Record of Decision and Approved Resource Management Plan (RMP) (August 2008); Sampling Vegetation Attributes; National Range and Pasture Handbook published by the Natural Resources Conservation Service (NRCS); Nevada Rangeland Monitoring Handbook (2006); Utilization Studies and Residual Measurements; Nevada Plant List; and Major Land Resource Area (MLRA 29 and MLRA 30) Rangeland Ecological Site Descriptions (ESDs). A complete list of references is included at the end of this document. These documents are available for public review at the Caliente Field Office during business hours.

All posted acreage figures were determined using the Bureau of Land Management's Geographic Information System (GIS).

## Background

The Lower Riggs and Boulder Spring Allotments are land based allotments, located approximately 40 miles south of Caliente, Nevada, in the east-central portion of Lincoln County (Appendix A, Map #1). Elevations in the allotments range from approximately 3,500 feet in Meadow Valley Wash to approximately 5,500 feet in their eastern portions. The 19,523 acre Lower Riggs Allotment is situated in the following watersheds: Kane Springs Wash (#217), Meadow Valley Wash South (#214 B), and Meadow Valley Wash North (#214 A). The 17,752 acre Boulder Spring Allotment is located in the Kane Springs Wash and Meadow Valley Wash South Watersheds.

## Grazing

The Lower Riggs Allotment has two permittees: Lyle and Ruth Whiteside (#2703298), and Richard and Meredith Rankin (#2704063). Richard and Meredith Rankin are the sole permittee on the Boulder Spring Allotment.

The term grazing permit for Lyle and Ruth Whiteside was reissued on 3/10/2015 for the period 3/22/2015 – 2/28/2023 due to a base property lease expiration. The term grazing permit for Richard and Meredith Rankin was issued on 2/19/2015, for the period 3/1/2015 – 2/28/2017, due to a grazing transfer from 7J Ranch (Hank and Joi Brackenbury). Both permits were issued under the authority of the Appropriations Act (Sec. 411, PL 113-76) and authorize cattle grazing as displayed in Tables 1 and 2.

**Table 1.** Current term grazing permit for Lyle and Ruth Whiteside (#2703298) on the Lower Riggs Allotment (#01087).

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** % Public Land	AUMs		
Name	Number		* Number	Kind	Begin	End		Active Use	Hist. Susp. Use	Permitted Use
Lower Riggs	1087	#2703298	102	cattle	3/1	3/24	100%	1,099	0	1,099
					5/1	2/28				

\* This number is approximate

\*\* This is for billing purposes only.

**Table 2.** Current term grazing permit for Richard and Meredith Rankin on the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments.

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** % Public Land	AUMs		
Name	Number		* Number	Kind	Begin	End		Active Use	Hist. Susp. Use	Permitted Use
Boulder Spring	21009	#2704063	70	cattle	10/1	3/31	100%	416	0	416
Lower Riggs	01087		29	cattle	3/1	3/24	100%	309	0	309
		5/1	2/28							

\* These numbers are approximate

\*\* This is for billing purposes only.

This assessment evaluates grazing management practices on the allotments for the period March 1, 2005 through February 28, 2015 (10 years). Lyle and Ruth Whiteside have been the grazing permittee, on their respective allotments, during this time period. However, while the 7J Ranch held the permit for the Boulder Spring and Lower Riggs Allotments during this time period, their grazing permit was transferred to Richard and Meredith Rankin on February 9, 2015. The Rankins did not use their grazing privileges, following the issuance of their permit, during the remainder of the evaluation period.

Tables 1 and 2 in Appendix B display annual livestock grazing use for Lyle and Ruth Whiteside and 7J Ranch on the Lower Riggs Allotment, and 7J Ranch on the Boulder Spring Allotment during the 10-year evaluation period. For the Lower Riggs Allotment (Table 1), the total AUMs licensed each year - as a percent of the total active use for both permittees - ranged from 0% (2006 and 2007) to 48% (2011). The 10-year average was 19%. This indicates that the allotment has received very little grazing use over the past 10 years. For the Boulder Spring Allotment (Table 2), the total AUMs licensed each year - as a percent of the total active use for 7J Ranch - ranged from 0% (2014) to 96% (2008). The 10-year average was 59% indicating that the allotment has received moderate grazing use during the evaluation period.

Riparian

There are two known springs, in proximity to each other, on the Lower Riggs Allotment: Lower Riggs Spring and Upper Riggs Spring. Both springs feed an 11 mile pipeline capable of providing water to six watering locations (troughs) along its length while also creating a lotic riparian zone.

Boulder Spring is the only known spring on the Boulder Spring Allotment. This spring is capable of delivering water, through a 14 mile pipeline, to six watering locations (troughs) along its length (Appendix A, Map #2), and is also associated with a lotic riparian zone.

In April 2015, a Lotic Riparian Proper Functioning Condition (PFC) Survey was conducted by an interdisciplinary team (IDT) along both riparian zones. The team determined that both were in proper functioning condition (Appendix A, Map #3).

Table 3 displays the Riparian Proper Functioning Condition Rating (lotic), determined for both riparian zones, and the length of reach (miles) associated with the condition rating.

**Table 3.** Proper Functioning Condition Ratings (Lotic) and the length of reach (miles) associated with the rating.

Allotment	Riparian Proper Functioning Condition Ratings in the Allotment (Lotic)	Length of Reach Associated with Each Condition Rating (miles)
Lower Riggs	Proper Functioning Condition	.8
-----		
Boulder Spring	Proper Functioning Condition	.11

Wild Horses, Wilderness, and Wildlife

None of the allotments are associated with a Wild Horse Herd Management Area (HMA).

The Lower Riggs and Boulder Spring Allotments contain 1,562 acres and 3,511 acres of the Meadow Valley Wilderness, respectively (Appendix A, Map #2).

Both allotments contain general tortoise habitat for the federally threatened Agassiz’s desert tortoise (*Gopherus agassizii*). One hundred and twenty-five acres of this habitat are located in the extreme southern portion of the Lower Riggs Allotment, and 9,674 acres are located in the Boulder Spring Allotment (Appendix A, Map #2). Desert tortoise critical habitat and desert tortoise Areas of Critical Environmental Concern (ACEC) does not exist in the allotments. Table 4 displays allotment acreage, the amount of desert tortoise habitat and wilderness in each allotment, and the amount of desert tortoise habitat and wilderness as a percent of the allotment.

**Table 4.** Amount of General Desert Tortoise Habitat and Wilderness in the Lower Riggs and Boulder Spring Allotments.

Name	Acreage	Percent of Allotment
Lower Riggs Allotment	19,523	----
Desert Tortoise General Habitat	125	0.64%
Meadow Valley Wilderness Area	1,562	8%
-----		
Boulder Spring Allotment	17,752	----
Desert Tortoise General Habitat	9,674	55%
Meadow Valley Wilderness Area	3,511	20%

The allotment also contains mule deer (*Odocoileus hemionus*) habitat and occupied desert bighorn sheep (*Ovis canadensis nelsoni*) habitat (Appendix A, Map #4).

### Wildfires

Three large wildfires started by lightning – the Meadow Valley, Delamar, and Vigo fires – have occurred in both allotments during the past 10 years (Appendix A, Map #5).

The Delamar and Meadow Valley fires occurred in 2005 and caused significant changes to the vegetative resource. The combination of both fires burned 15,585 acres or 80% of total acreage of the Lower Riggs Allotment; and 11,768 acres or 66% of the total acreage of the Boulder Spring Allotment (Table 5). Portions of both fires were aerially seeded in January 2006.

In the Lower Riggs Allotment, 3,323 acres of the Delamar fire and 4,288 acres of the Meadow Valley fire were seeded, for a total of 7,611 acres. In the Boulder Spring Allotment, 699 acres of the Delamar Fire were seeded (Appendix A, Map #5). A majority of all seeded acreage is located in rugged, relatively steep and inaccessible terrain which lacks water for livestock grazing.

In 2011, the Vigo fire burned 2,564 acres and 2,896 acres in the Lower Riggs and Boulder Spring Allotments, respectively, all of which occurred within the boundaries of the 2005 Meadow Valley fire.

Table 5 displays information regarding the Delamar and Meadow Valley wildfires which impacted a majority of both allotments in 2005.

**Table 5.** Major wildfires which occurred in the Lower Riggs and Boulder Spring Allotments in 2005, and acres aerially seeded.

Name	Acres Impacted by Wildfire	Percent of Allotment Impacted by Wildfire	Burned Acres Aerially Seeded	Percent of Burned Acres Aerially Seeded	Percent of All the Burned Acres in Each Allotment Aerially Seeded
Lower Riggs Allotment (19,523 Acres)	----	----	----		----
Delamar Fire	9,153	47%	3,323	36%	----
Meadow Valley Fire	6,432	33%	4,288	67%	----
<b>TOTAL</b>	<b>15,585</b>	<b>80%</b>	<b>7,611</b>		49%
Boulder Spring Allotment (17,752 Acres)	----	----	----		
Delamar Fire	4,232	24%	699	17%	----
Meadow Valley Fire	7,536	42%	----		----
<b>TOTAL</b>	<b>11,768</b>	<b>66%</b>	<b>699</b>		6%

Key Area BS KA-2, in the Boulder Spring Allotment, was established in an existing burned area (burn date unknown) in September 1980 (Appendix A, Map #2). Key Area LR KA-1, in the Lower Riggs Allotment, was also established in September 1981. This KA was impacted by wildfire in 2005. Consequently, none of the KAs represent the unburned portions of major range sites in either allotment. Therefore, in March 2015, a BLM IDT established one representative study site in the unburned portions of each allotment: LR SS-1 in the Lower Riggs Allotment, and BS SS-1 in the Boulder Spring Allotment.

Soil Mapping Units and corresponding ESDs, as determined by the NRCS, combined with field observations were used to determine the ecological site represented by either a key area or study site.

The BLM used the Line Intercept Method to collect cover data at both study sites on March 17, 2015, and at the KAs on the Lower Riggs and Boulder Spring Allotments on June 22, 2015. The Line Intercept method is described in Sampling Vegetation Attributes (USDI-BLM et. al., 1996). All field observations were conducted on said dates.

This document assesses grazing management practices, during the evaluation period, using monitoring data and subsequent analysis. The BLM used this analysis to determine achievement or non-achievement of the Mojave-Southern Great Basin Standards, and conformance with Guidelines.

## STANDARD 1. SOILS:

“Watershed soils and stream banks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle.”

Soil indicators:

- Ground cover (vegetation, litter, rock, bare ground);
- Surfaces (e.g., biological crusts, pavement); and
- Compaction/infiltration.

Riparian soil indicators:

- Streambank stability.

All of the above upland indicators have been deemed appropriate to the potential of the ecological site.

The riparian component of this Standard (streambank stability) is discussed under Standard 2.

### Lower Riggs Allotment

#### Burned Portions

#### Determination:

- Achieving the Standard
- Not achieving the Standard, but making significant progress towards meeting the Standard.
- Not achieving the Standard, not making significant progress towards meeting the Standard.**

#### Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.**

#### Guidelines Conformance:

- In conformance with the Guidelines**
- Not in conformance with the Guidelines

According to the NRCS soil survey, LR KA-1 is located in a Shallow Gravelly Loam 8-10" P.Z. (R029XY077NV – blackbrush (*Coleogyne ramosissima*)/desert needlegrass (*Achnatherum speciosum*). This range site comprises 47% of the allotment (south one-half).

The soils of this site are shallow and well drained. Surface soils are medium to coarse textured. Subsoils are generally heavy textured with a high percent of gravels. Runoff is rapid and the potential for gully, sheet or rill erosion varies with slope. The soils are slowly permeable and available water capacity is very low to low. They are dry most of the year but are moist for

short periods during the winter and early spring months and occasionally for short intermittent periods following summer convection storms.

Figure 1 shows the topographic, vegetation and soil surface characteristics of LR KA-1 which was impacted by wildfire in 2005.



**Figure 1.** Topographic, vegetation, and soil surface characteristics at LR KA-1 on the Lower Riggs Allotment (elevation 4,480 feet).

It should be noted that according to the NRCS soil survey, the designated woodland sites – F029XY078NV and F029XY089NV – occupy 14% and 33% of the allotment, respectively, and occur in the more rugged, upper elevations.

Vegetative Cover

Table 6 shows a comparison summary of the vegetative cover data collected at LR KA-1 to the potential natural community (PNC) cover value for the applicable range site.

**Table 6.** Comparison summary of LR KA-1 cover data to the potential natural community (PNC) cover value on the Lower Riggs Allotment.

Key Area	Range Site *	Associated Vegetation Type	% Cover Collected at Key Area	% Cover at PNC in Rangeland Site Description
LR KA-1	R029XY077NV	CORA/ACSP (Blackbrush/Desert needlegrass)	17.4%	25-35%

\* Based upon Soil Mapping Units provided by the Natural Resource Conservation Service (NRCS) along with ground reconnaissance.

**Conclusion:** Burned Portions of the allotment: *Standard 1 Not Achieved*

According to the range site description applicable to the key area, approximate perennial ground cover (basal and crown) should range between 25-35%. Cover value obtained at LR KA-1 was 17.4 % (Table 6).

As Table 6 illustrates, the cover value at the key area falls significantly below this range. Existing cover components consist primarily of scattered perennial shrubs and forbs. However, field observations indicate that the lack of pedestalled plants, rills and gully erosion is evidence of minimal wind and water erosion. Soil characteristics for this range site were described above. The BLM believes that these soil characteristics (well drained, medium to coarse textured with subsoils being generally heavy textured with a high percent of gravels) help provide some measure of soil protection.

Failing to meet the standard is not due to livestock grazing. It is attributed to the large 2005 wildfires when the Delamar Fire impacted 9,153 acres in the west portion of the allotment; and the Meadow Valley Fire impacted 6,432 acres in the east portion of the allotment (Map #3). Older fires (unknown dates of occurrence) have also contributed to not meeting Standard 1.

Unburned Portions

Determination:

**X Meeting the Standard**

- Not meeting the Standard, but making significant progress towards meeting the Standard.
- Not meeting the Standard, not making significant progress towards meeting the Standard.

Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

Guidelines Conformance:

**X In conformance with the Guidelines**

- Not in conformance with the Guidelines

Range site R029XY077NV, described earlier, occupies the approximate south one-half of the allotment. The BLM established study site LR SS-1 on March 17, 2015, to obtain cover data and conduct field observations in a location typical of the unburned portions of the allotment in this range site (Appendix A, Map #2).

Figure 2 shows the typical topographic vegetation and soil surface characteristics of the unburned portions of the allotment.



**Figure 2.** Study Site LR SS-1 located in a representative unburned portion of the Lower Riggs Allotment (elevation 6,220 feet).

Cover

Table 7 shows a comparison summary of the cover data collected at Study Site LR SS-1 and the potential natural community (PNC) cover value for the applicable range site.

**Table 7.** Comparison summary of Study Site LR SS-1 cover data to the potential natural community (PNC) cover value on the Lower Riggs Allotment.

Key Area	Range Site *	Associated Vegetation Type	% Cover Collected at Key Area	% Cover at PNC in Rangeland Site Description
LR SS-1	R029XY077NV	CORA/ACSP (Blackbrush/Desert needlegrass)	25%	25-35%

\* Based upon Soil Mapping Units provided by the Natural Resource Conservation Service (NRCS) along with ground reconnaissance.

**Conclusion:** Unburned Portions of the allotment: *Standard 1 Achieved*

According to the site description applicable to the key areas, approximate perennial ground cover (basal and crown) should range between 25-35%. The cover value obtained at LR SS-1 was 25% (Table 7).

In the unburned areas of the allotment, the vegetative community is diverse and productive. The combination of vegetative cover, litter and rock on the soil surface is appropriate for the site and contribute significantly to soil stability and protection against normal erosive forces.

Furthermore, field observations on the allotment have substantiated that soils were stable, native plants were not pedestalled and there were no signs of soil compaction. This indicates that this portion of the allotment has sufficient vegetative cover to maintain stability and to resist accelerated erosion, maintain soil productivity and sustain the hydrologic cycle. It further indicates that there is minimal wind and/or water erosion of topsoil, and apparent appropriate infiltration of water from precipitation events. In addition, the gravelly/stony soil surface characteristics found in the soil mapping unit (R029XY077NV) comprising large portions of the allotment further contribute to soil protection.

Sufficient live vegetative cover infers litter production that further adds to increased soil protection and stability. Field observations have substantiated various amounts of scattered litter throughout the allotment.

### **Boulder Spring Allotment**

#### Burned Portions

##### Determination:

- Achieving the Standard
- Not achieving the Standard, but making significant progress towards meeting the Standard.
- Not achieving the Standard, not making significant progress towards meeting the Standard.**

##### Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.**

##### Guidelines Conformance:

- In conformance with the Guidelines**
- Not in conformance with the Guidelines

As mentioned, BS KA-2 was established in an old burn. According to the NRCS soil survey, BS KA-2 is located in a Shallow Gravelly Loam 5-7" P.Z. (R030XB029NV – blackbrush (*Coleogyne ramosissima*)/big galleta (*Pleuraphis rigida*)).

The soils of this site are shallow. Textures are gravelly clay loams to loams, and have lime in the profile. Water intake rates are moderate to slow. Available water capacity is low. Runoff is medium to rapid and the soils are well drained.

A majority of livestock grazing in the allotment occurs in and vicinal to this range site, which comprises 32% of the allotment, is located mostly in the lower elevations of the north-central and southern portions of the allotment. In the Boulder Spring Allotment, approximately one-half of this range site was burned by the 2005 wildfires.

Figure 3 shows the topographic, vegetation and soil surface characteristics of BS KA-2.



**Figure 3.** Topographic, vegetation, and soil surface characteristics at BS K-2 on the Boulder Spring Allotment(elevation 3,840 feet).

Cover

Table 8 shows a comparison summary of the cover data collected at BS KA-2 to the potential natural community (PNC) cover value for the applicable range site.

**Table 8.** Comparison summary of BS KA-2 cover data to the potential natural community (PNC) cover value on the Boulder Spring Allotment.

Key Area	Range Site *	Associated Vegetation Type	% Cover Collected at Key Area	% Cover at PNC in Rangeland Site Description
BS KA-2	R030XY029NV	CORA/ACSP (Blackbrush/Desert needlegrass)	5.6%	15-30%

\* Based upon Soil Mapping Units provided by the Natural Resource Conservation Service (NRCS) along with ground reconnaissance.

**Conclusion:** Burned Portions of the allotment: *Standard 1 Not Achieved*

According to the range site description applicable to the key area, approximate perennial ground cover (basal and crown) should range between 15-30%. Cover value obtained at BS KA-2 was 5.6 % (Table 8).

As Table 8 illustrates, the cover value at the key area falls significantly below this range. Existing cover components consist primarily of scattered perennial shrubs and forbs with mostly a monoculture of 3-awn (*Aristida purpurea*). However, it should be noted that the lack of pedestalled plants, rills and gully erosion is evidence of minimal wind and water erosion. Soil characteristics for this range site were described above. The BLM believes that these soil characteristics (gravelly clay loams to loams), along with a relatively flat topography, help provide some measure of soil protection while reducing soil erosion potential in the site.

Failing to meet the standard is not due to livestock grazing. Failing to meet the standard is attributed to the 2005 wildfires which occurred on the allotment, when the Delamar Fire impacted 4,232 acres in the west portion of the allotment; and the Meadow Valley Fire impacted 7,536 acres in the east portion of the allotment (Map #3). Older fires (unknown dates of occurrence) have also contributed to not meeting Standard 1.

### Unburned Portion

#### Determination:

**Meeting the Standard**

- Not meeting the Standard, but making significant progress towards meeting the Standard.
- Not meeting the Standard, not making significant progress towards meeting the Standard.

#### Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

#### Guidelines Conformance:

**In conformance with the Guidelines**

- Not in conformance with the Guidelines

The BLM established study site BS SS-1 on March 17, 2015, to obtain cover data and conduct field observations in a location typical of the unburned portions of the allotment in this range site (Map #2).

Figure 4 shows the typical topographic, vegetation and soil surface characteristics of the unburned portions of the Boulder Spring Allotment.



**Figure 4.** Study Site BS SS-1 located in a representative unburned portion of the Boulder Spring Allotment (elevation 5,860 feet).

Cover

Table 9 shows a comparison summary of cover data between data collected at Study Site BS SS-1, and the potential natural community (PNC) cover value for the applicable range site.

**Table 9.** Comparison summary of BS SS-1 cover data to the potential natural community (PNC) cover value on the Boulder Spring Allotment.

Key Area	Range Site *	Associated Vegetation Type	% Cover Collected at Key Area	% Cover at PNC in Rangeland Site Description
BS SS – 1	R030XB029NV	CORA/PLRI (Blackbrush/Big Galleta)	32.5%	15-30%

\* Based upon Soil Mapping Units provided by the Natural Resource Conservation Service (NRCS) along with ground reconnaissance.

**Conclusion:** Unburned Portions of the allotment: *Standard 1 Achieved*

According to the site description applicable to the key areas, approximate ground cover (basal and crown) should range between 15-30%. Cover value obtained at BS SS-1 was 32.5% (Table 9).

In the unburned areas of the allotment, the vegetative community is diverse and productive. The combination of vegetative cover, litter and rock on the soil surface is appropriate for the site and contribute significantly to soil stability and protection against normal erosive forces.

Furthermore, field observations on the allotment have substantiated that soils were stable, native plants were not pedestalled and there were no signs of soil compaction. This indicates that this portion of the allotment has sufficient vegetative cover to maintain stability and to resist accelerated erosion, maintain soil productivity and sustain the hydrologic cycle. It further indicates that there is minimal wind and/or water erosion of topsoil, and apparent appropriate infiltration of water from precipitation. In addition, the gravelly/stony soil surface characteristics found in the soil mapping unit (R030XB029NV) comprising large portions of the allotment further contribute to soil protection.

Sufficient live vegetative cover infers litter production that further adds to increased soil protection and stability. Field observations have substantiated various amounts of scattered litter throughout the allotment.

## **STANDARD 2. ECOSYSTEM COMPONENTS:**

*"Watersheds should possess the necessary ecological components to achieve state water quality criteria, maintain ecological processes, and sustain appropriate uses."*

*"Riparian and wetlands vegetation should have structural and species diversity characteristic of the stage of stream channel succession in order to provide forage and cover, capture sediment, and capture, retain, and safely release water (watershed function)."*

Upland indicators:

- Canopy and ground cover, including litter, live vegetation, biological crust, and rock appropriate to the potential of the ecological site.
- Ecological processes are adequate for the vegetative communities.

Riparian indicators:

- Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows.
- Elements indicating proper functioning condition such as avoiding acceleration erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:
  - Width/Depth ratio;
  - Channel roughness;
  - Sinuosity of stream channel;
  - Bank stability;
  - Vegetative cover (amount, spacing, life form); and
  - Other cover (large woody debris, rock).
- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.

Water quality indicators:

- Chemical, physical and biological constituents do not exceed the state water quality standards.
- The above indicators shall be applied to the potential of the ecological site

## UPLANDS

### Burned Portion of the Lower Riggs and Boulder Spring Allotments

Determination:

- Achieving the Standard
- Not achieving the Standard, but making significant progress towards meeting the Standard.
- X Not achieving the Standard, not making significant progress towards meeting the Standard.**

Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- X Failure to meet the standard is related to other issues or conditions.**

*Guidelines Conformance:*

- X In conformance with the Guidelines**
- Not in conformance with the Guidelines

Upland indicators, for the unburned and burned portions of both allotments, were discussed under Standard 1 regarding data and field observations relating to soils, hydrologic processes, canopy and ground cover (including litter and rock).

Habitat indicators, for the unburned and burned portions of both allotments, were discussed under Standard 3 regarding vegetation composition (relative abundance of species), Vegetation structure (life forms, cover, height, and age classes), and vegetation distribution (patchiness, corridors).

**Conclusion:** Burned portions of both allotments: *Standard 2 Not Achieved*

Burned portions of the Lower Riggs and Boulder Spring Allotments are lacking the perennial cover, appropriate to the applicable range sites, necessary to achieve Standard 2.

### Unburned Portion of the Lower Riggs and Boulder Spring Allotments

*Determination:*

- X Meeting the Standard**
- Not meeting the Standard, but making significant progress towards meeting the Standard.
- Not meeting the Standard, not making significant progress towards meeting the Standard.

**Causal Factors:**

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

**Guidelines Conformance:**

- In conformance with the Guidelines**
- Not in conformance with the Guidelines

**Conclusion:** Unburned portions of both allotments: *Standard 2 Achieved*

Both allotments support a healthy variety of native shrubs with a smaller component of annual and perennial forbs and perennial grasses; all of which provide soils with the appropriate inputs of organic matter to become incorporated into the surface soil layer. This infers that ecological processes are adequate for the existing vegetative communities, while sustaining a level of biodiversity appropriate for the area and will sustain appropriate uses.

The following section discusses the upland indicators associated with the riparian zones.

**RIPARIAN**

**Lower Riggs Allotment**

**Uplands Associated with the Riparian Zone:**

**Determination:**

- Meeting the Standard**
- Not meeting the Standard, but making significant progress towards meeting the Standard.
- Not meeting the Standard, not making significant progress towards meeting the Standard.

**Causal Factors:**

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

**Guidelines Conformance:**

- In conformance with the Guidelines**
- Not in conformance with the Guidelines

The NRCS described the soils in this woodland site (F029XY089NV) as being skeletal with over 50% gravels or cobbles, by volume, distributed throughout their profile. In addition, the forested gravelly/stony soil surface characteristics of this site further contribute to soil protection.

Figure 5 shows typical upland characteristics associated with the riparian zone in the Lower Riggs Allotment.



**Figure 5.** Upland characteristics associated with the lotic riparian zone in the Lower Riggs Allotment (elevation 5,000 feet).

**Conclusion:** *Standard 2 Achieved*

The uplands associated with the lotic riparian zone support a healthy variety of native trees and shrubs with a smaller component of annual and perennial forbs and perennial grasses; all of which provide soils with appropriate inputs of organic matter which becomes incorporated into the surface soil layer to enrich soil nutrient content (Figure 5). This infers that ecological processes are adequate for the existing vegetative communities, while sustaining appropriated uses.

Furthermore, field observations on the allotment have substantiated that soils were stable, native plants were not pedestalled and there were no signs of soil compaction. This indicates that this portion of the allotment has sufficient vegetative cover to maintain stability and to resist accelerated erosion, maintain soil productivity and sustain the hydrologic cycle. It further indicates that there is minimal wind and/or water erosion of topsoil, and apparent appropriate infiltration of water from precipitation.

Sufficient live vegetative cover provides litter production that further adds to increased soil protection and stability. Field observations have substantiated various amounts of scattered litter throughout the allotment.

Lotic Riparian Zone (.8 mile)

Determination:

**X Achieving the Standard**

- Not achieving the Standard, but making significant progress towards meeting the Standard.
- Not achieving the Standard, not making significant progress towards meeting the Standard.

Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

Guidelines Conformance:

**X In conformance with the Guidelines**

- Not in conformance with the Guidelines

The Lower Riggs Allotment is associated with a total of approximately .8 mile of lotic riparian habitat (Map #3).

Figures 5, 6, and 7 show the characteristics of the lotic riparian zone in the Lower Riggs Allotment



**Figure 6.** Lotic riparian zone in the Lower Riggs Allotment (elevation 5,100 feet).



**Figure 7.** Lotic riparian zone in the Lower Riggs Allotment (elevation 5,100 feet).

**Conclusion:** *Standard 2 Achieved*

Stream banks are stable to very stable with 60-90% (ocular estimate) ground cover (vegetation, rock, litter). Along the riparian zone, cover varies from no overstory – with vegetative ground cover, gravel, boulders or bedrock – to cottonwoods (*Populus spp.*), willows (*Salix spp.*) and various broadleaf species (Figures 5-7).

A diversity of riparian plant species is present, particularly within the stream channel, which includes: mosses, sedges, rushes, grasses, cattails, wild rose, willows and other various broadleaf species. The flood plain in some areas is covered with rock (includes bedrock) where vegetation is lacking, while in other areas it is well vegetated with grasses, shrubs, and trees of various age classes.

In addition, the following was observed during the PFC Survey:

- Sinuosity, width/ depth ratio and gradient are in balance with the landscape setting (i.e., landform, geology and bioclimatic region);
- The riparian zone has achieved potential extent;
- The upland watershed is not contributing to riparian degradation;
- There is a diverse age-class distribution and composition of riparian vegetation;
- The species present indicate maintenance of riparian soil moisture characteristics;

- Streambank vegetation exhibits vigor and is comprised of those plants or plant communities that have root masses capable of withstanding high stream flow events;
- There is adequate vegetative cover present to protect banks and dissipate energy during high flows;
- Plant communities in the riparian area are an adequate source of coarse and/or large woody debris.
- Floodplain and channel characteristics (i.e., rocks, coarse and/or large woody debris) are adequate to dissipate energy;
- Lateral stream movement is associated with natural sinuosity;
- The system is vertically stable; and
- The stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition).

## **Boulder Spring Allotment**

### Uplands Associated with the Riparian Zone:

#### Determination:

##### **X Meeting the Standard**

- Not meeting the Standard, but making significant progress towards meeting the Standard.
- Not meeting the Standard, not making significant progress towards meeting the Standard.

#### Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

#### Guidelines Conformance:

##### **X In conformance with the Guidelines**

- Not in conformance with the Guidelines

The NRCS described the soils in this woodland site (F029XY089NV) as being skeletal with over 50% gravels or cobbles, by volume, distributed throughout their profile. In addition, the forested gravelly/stony soil surface characteristics of this site further contribute to soil protection.

Figure 8 shows typical upland characteristics associated with the riparian zone in the Boulder Spring Allotment.



**Figure 8.** Upland characteristics associated with the riparian zone in the Boulder Spring Allotment (elevation 5,180 feet).

**Conclusion:** *Standard 2 Achieved*

The uplands associated with the lotic riparian zone support a healthy variety of native grasses, shrubs, and trees; all of which provide soils with appropriate inputs of organic matter which becomes incorporated into the surface soil layer to enrich soil nutrient content (Figure 8). This infers that ecological processes are adequate for the existing vegetative communities, while sustaining appropriated uses.

Furthermore, field observations on the allotment substantiated that soils were stable, native plants were not pedestalled and there were no signs of soil compaction. This indicates that this portion of the allotment has sufficient vegetative cover to maintain stability and to resist accelerated erosion, maintain soil productivity and sustain the hydrologic cycle. It further indicates that there is minimal wind and/or water erosion of topsoil, and appropriate infiltration of water from precipitation.

Sufficient live vegetative cover provides litter production that further adds to increased soil protection and stability. Field observations have substantiated various amounts of scattered litter throughout the allotment.

Lotic Riparian Zone (.11 mile)

Determination:

**Achieving the Standard**

Not achieving the Standard, but making significant progress towards meeting the Standard.

- Not achieving the Standard, not making significant progress towards meeting the Standard.

Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

Guidelines Conformance:

**X In conformance with the Guidelines**

- Not in conformance with the Guidelines

The Boulder Spring Allotment is associated with a total of approximately .8 mile of lotic riparian habitat (Map #3). This area is relatively inaccessible to livestock.

Figures 8, 9 and 10 show the characteristics of the lotic riparian zone in the Boulder Spring Allotment.



**Figure 9.** Typical ground cover in the lotic riparian zone located in the Boulder Spring Allotment (elevation 5,180 feet).



**Figure 10.** Typical ground cover in the lotic riparian zone located in the Boulder Spring Allotment (elevation 5,180 feet).

**Conclusion:** *Standard 2 Achieved*

Streambanks are very stable with 95-100% (ocular estimate) ground cover (vegetation, rock, litter). Overstory, along the riparian zone varies from no overstory – with heavy vegetative ground cover mixed with gravel and boulders - to cottonwoods, willows and various broadleaf species.

A diversity of riparian plant species is present, particularly in the stream channel, which includes mosses, sedges, rushes, grasses, cattails, wild rose, willows and other various broadleaf species. The flood plain is covered with heavy vegetation with shrubs and trees of various age classes, and grasses.

In addition, the following was observed during the PFC Survey:

- Sinuosity, width/ depth ratio and gradient are in balance with the landscape setting (i.e., landform, geology and bioclimatic region);
- The riparian zone has achieved potential extent;
- The upland watershed is not contributing to riparian degradation;
- There is a diverse age-class distribution and composition of riparian vegetation;
- The species present indicate maintenance of riparian soil moisture characteristics;
- Streambank vegetation exhibits vigor and is comprised of those plants or plant

communities that have root masses capable of withstanding high stream flow events;

- There is adequate vegetative cover present to protect banks and dissipate energy during high flows;
- Plant communities in the riparian area are an adequate source of coarse and/or large woody debris.
- Floodplain and channel characteristics (i.e., rocks, coarse and/or large woody debris) are adequate to dissipate energy;
- Lateral stream movement is associated with natural sinuosity;
- The system is vertically stable; and
- The stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition).

### **STANDARD 3. HABITAT AND BIOTA:**

*"Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses. Habitats of special status species should be able to sustain viable populations of those species."*

Habitat indicators:

- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, and age classes);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

Wildlife indicators:

- Escape terrain;
- Relative abundance;
- Composition;
- Distribution;
- Nutritional value; and
- Edge-patch snags.

The above indicators shall be applied to the potential of the ecological site.

## Lower Riggs Allotment

### Burned Portion

#### Determination:

- Achieving the Standard
- Not achieving the Standard, but making significant progress towards meeting the Standard.
- X Not achieving the Standard, not making significant progress towards meeting the Standard.**

#### Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- X Failure to meet the standard is related to other issues or conditions.**

#### Guidelines Conformance:

- X In conformance with the Guidelines**
- Not in conformance with the Guidelines

Range site R029XY077NV comprises 47% of the Lower Riggs Allotment. The Range Site Description for this site lists blackbrush as the dominate shrub species. It also lists desert bitterbrush, ephedra, and desert needlegrass as associated minor components.

Field observations revealed that the burned portions of the allotment had very limited plant species diversity.

Table 10 displays a list of plant species found in the burned portions of range site R029XY077NV in the Lower Riggs Allotment.

**Table 10.** Plant species found in in the burned areas of range site R029XY077NV in the Lower Riggs Allotment.

Trees	Shrubs	Grasses	Forbs
juniper ( <i>Juniperus osteosperma</i> )	desert bitter brush ( <i>Purshia glandulosa</i> )	purple threeawn ( <i>Aristida purpurea</i> )	desert globemallow ( <i>Sphaeralcea ambigua</i> )
	Nevada ephedra ( <i>Ephedra nevadensis</i> )		Showy goldeneye ( <i>Heliomeris multiflora</i> )
	Wyoming Big Sagebrush ( <i>Artemisia Tridentata wyomingensis</i> )		
	snakeweed ( <i>Gutierrezia spp.</i> )		

Figures 11 and 12 contrast the variability of vegetation in the burned areas of the Lower Riggs Allotment. The photographs illustrate the topographic, vegetation, and soil surface characteristics noted in Range Site R029XY077NV.



**Figure 11.** Burned area characteristics of Range Site R029XY077NV in the northeast portion of the Lower Riggs Allotment (LR KA-1) (elevation 4,480 feet).



**Figure 12.** Burned area characteristics of Range Site R029XY077NV in the west-central portion of the Lower Riggs Allotment.

**Conclusion:** Burned portions of the allotment: *Standard 3 Not Achieved*

Field observations revealed that, commonly, the burned portions of the allotment are lacking in the all five Habitat Indicators listed under Standard 3 in relation to the potential of the ecological site. These include vegetation composition, structure, distribution (patchiness), and productivity, and nutritional value. Furthermore, the burned areas are lacking in the main shrub and grass components – blackbrush and desert needlegrass – characteristic of the range site.

In addition, although the burned area of the allotment contains some perennial plant species in alignment with the applicable range site description – Nevada ephedra, desert bitterbrush, and purple three-awn - field observations indicate that none of the species are present in appreciable amounts. As a result, they are so widely dispersed throughout the burn area that they contribute little to overall composition, structure, and productivity; and, although Nevada ephedra and desert bitterbrush considered fair regarding nutritional value, their scarcity fails to contribute appreciably to the overall nutrition bank of the range in the burned areas of the allotment.

#### Unburned Portion

##### Determination:

**Achieving the Standard**

- Not achieving the Standard, but making significant progress towards meeting the Standard.
- Not achieving the Standard, not making significant progress towards meeting the Standard.

##### Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

##### Guidelines:

**In conformance with the Guidelines**

- Not in conformance with the Guidelines

Field observations revealed that at least seven perennial species of shrubs; two perennial species of grasses; one perennial forb species; two species of trees; and two different species of cacti exist in a patchy network in the unburned portions of the allotment. The following table displays these plant species:

**Table 11.** Plant species found in in the unburned areas of range site R029XY077NV in the Lower Riggs Allotment.

Trees	Shrubs	Grasses	Forbs	Cacti
juniper ( <i>Juniperus osteosperma</i> )	blackbrush ( <i>Coleogyne ramosissima</i> )	desert needlegrass ( <i>Achnatherum peciosum</i> )	desert globemallow ( <i>Sphaeralcea ambigua</i> )	Banana yucca ( <i>Yucca baccata</i> )
Joshua tree ( <i>Yucca brevifolia</i> )	desert bitterbrush ( <i>Purshia glandulosa</i> )	purple threeawn ( <i>Aristida purpurea</i> )		prickly pear ( <i>Opuntia spp.</i> )
	Nevada ephedra ( <i>Ephedra nevadensis</i> )			
	Douglas rabbitbrush ( <i>Chrysothamnus viscidiflorus</i> )			
	desert peach ( <i>Prunus andersonii</i> )			
	Wyoming Big Sagebrush ( <i>Artemisia Tridentata wyomingensis</i> )			
	Yerba Santa ( <i>Eriodictyon spp.</i> )			

Figure 13 illustrates topographic, soil, and vegetation characteristics in the unburned portion of the Lower Riggs Allotment.



**Figure 13.** Habitat characteristics of Range Site R029XY077NV in the unburned portion of the Lower Riggs Allotment (LR SS-1) (elevation 6,220 feet).

**Conclusion:** Unburned portions of the allotment: *Standard 3 Achieved*

Habitat indicators for Standard 3 refer to vegetative composition, structure, distribution, productivity, and nutritional value. Vegetative conditions in the unburned area on the Lower Riggs Allotment suitably reflect these attributes. In the unburned areas of the allotment, the vegetative communities are diverse and productive.

Field observations revealed diversity in vegetation types that are distributed in a patchy nature across the landscape in the unburned areas. Observations also indicate that species composition is appropriate. This indicates productive and functional plant communities with suitable structure and distribution.

Nevada ephedra, Indian ricegrass, desert needlegrass, and squirreltail are known to be nutritious, palatable plant species for livestock and/or wildlife. Various forb species were also noted. This serves to provide a variable and productive forage base; and in combination with the aforementioned characteristics of the landscape, is capable of supporting an appropriate level of biodiversity while sustaining appropriate uses.

Moderate to good species diversity of perennial plants indicate that there is sufficient ground cover (in the form of live vegetation and litter) to protect soils and perpetuate vegetative productivity while ensuring appropriate vegetative structure and diversity.

In concert, the various vegetation habitats in the unburned portions of the allotment provide escape terrain and thermal cover, while short and tall statured woody species create perching/nesting habitat for the avian community. Such habitats are also capable of supporting a variety of small mammals, reptiles, and assorted numerous songbirds.

## **Boulder Spring Allotment**

### Burned Portion

Determination:

- Achieving the Standard
- Not achieving the Standard, but making significant progress towards meeting the Standard.
- Not achieving the Standard, not making significant progress towards meeting the Standard.**

Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.**

*Guidelines Conformance:*

- In conformance with the Guidelines**
- Not in conformance with the Guidelines

Range site R029XY077NV comprises 39% of the Boulder Spring Allotment and was described under Standard 1 under the section discussing the burned portions of the Lower Riggs Allotment. The Range Site Description for this site lists blackbrush as the dominate shrub species. It also lists desert bitterbrush, ephedra, and desert needlegrass as associated minor components.

Table 12 displays the plant species found in the burned portions of range site R029XY077NV in the Boulder Spring Allotment.

**Table 12.** Plant species found in in the burned areas of range site R029XY077NV in the Boulder Spring Allotment.

Trees	Shrubs	Grasses	Forbs
juniper ( <i>Juniperus osteosperma</i> )	desert bitter brush ( <i>Purshia glandulosa</i> )	purple threeawn ( <i>Aristida purpurea</i> )	desert globemallow ( <i>Sphaeralcea ambigua</i> )
	Nevada ephedra ( <i>Ephedra nevadensis</i> )		Showy goldeneye ( <i>Heliomeris multiflora</i> )
	Wyoming Big Sagebrush ( <i>Artemisia Tridentata wyomingensis</i> )		
	snakeweed ( <i>Gutierrezia spp.</i> )		
	desert peach ( <i>Prunus andersonii</i> )		

Figure 14 shows the topographic, soil, and vegetation characteristics in the burned areas of the Boulder Spring Allotment for range site R029XY077NV.



**Figure 14.** Burned area characteristics of Range Site R029XY077NV in the Boulder Spring Allotment (elevation 4,320 feet).

Range site R030XB029NV comprises 32% of the Boulder Spring Allotment and was described under Standard 1 under the section discussing the burned portions of the Boulder Spring Allotment. The Range Site Description for this site also lists blackbrush as the dominate shrub species. It lists creosotebush (*Larrea tridentata*) and big galleta as associated minor components.

Table 13 displays the plant species found in the burned portions of range site R030XB029NV in the Boulder Spring Allotment.

**Table 13.** Plant species found in in the burned areas of range site R030XB029NV in the Boulder Spring Allotment.

Shrubs	Grasses	Cacti
Nevada ephedra ( <i>Ephedra nevadensis</i> )	purple threeawn ( <i>Aristida purpurea</i> )	cholla ( <i>Cylindropuntia acanthocarpa</i> )
snakeweed ( <i>Gutierrezia spp.</i> )	low woollygrass ( <i>Dasyochloa pulchella</i> )	Spanish dagger ( <i>Yucca schidigera</i> )
creosote bush ( <i>Larrea tridentata</i> )		banana yucca ( <i>Yucca baccata</i> )
cheesebush ( <i>Ambrosia salsola</i> )		Joshua tree ( <i>Yucca brevifolia</i> )

Figure 15 shows the topographic, soil, and vegetation characteristics in the burned areas of the Boulder Spring Allotment for range site R030XB029NV.



**Figure 15.** Burned area characteristics of Range Site R030XB029NV in the Boulder Spring Allotment (elevation 3,840 feet).

**Conclusion:** Burned portions of the allotment: *Standard 3 Not Achieved*

Field observations revealed that, commonly, the burned portions of the allotment are lacking in the all five Habitat Indicators listed under Standard 3 in relation to the potential of both ecological sites. These include vegetation composition, structure, distribution (patchiness), and productivity, and nutritional value. Furthermore, the burned areas are lacking in the main shrub and grass components – blackbrush, creosotebush (*Larrea tridentata*) and big galleta – characteristic of the range site.

In addition, although the burned areas on both range sites in the allotment contain some of the perennial plant species listed in the applicable range site description – primarily Nevada ephedra and purple three-awn – field observations indicate that none of the species are present in appreciable amounts across the landscape.

In addition, the prominent shrub species listed in both range site descriptions – blackbrush – is not present. Consequently, in the burned areas of the allotment the existing plant species contribute little to the overall composition, structure, productivity, and nutritional value of the landscape.

#### Unburned Portion

##### Determination:

**X Achieving the Standard**

- Not achieving the Standard, but making significant progress towards meeting the Standard.
- Not achieving the Standard, not making significant progress towards meeting the Standard.

##### Causal Factors:

- Livestock are a contributing factor to not meeting the standard.
- Livestock are not a contributing factor to not meeting the standard.
- Failure to meet the standard is related to other issues or conditions.

##### Guidelines:

**X In conformance with the Guidelines**

- Not in conformance with the Guidelines

Field observations revealed that at least one species of tree; ten perennial species of shrubs; four perennial species of grasses; seven perennial forb species; and four different species of cacti exist in a patchy network in the unburned portions of the allotment. The following table displays these observations.

**Table 14.** Plant species found in in the unburned areas of range site R029XY077NV in the Boulder Spring Allotment.

Trees	Shrubs	Grasses	Forbs	Cacti
Joshua tree ( <i>Yucca brevifolia</i> )	blackbrush ( <i>Coleogyne ramosissima</i> )	desert needlegrass ( <i>Achnatherum speciosum</i> )	desert globemallow ( <i>Sphaeralcea ambigua</i> )	Banana yucca ( <i>Yucca baccata</i> )
	desert bitterbrush ( <i>Purshia glandulosa</i> )	big galleta ( <i>Pleuraphis rigida</i> )	fiddleneck ( <i>Amsinckia tessellata</i> )	prickly pear ( <i>Opuntia spp.</i> )
	Nevada ephedra ( <i>Ephedra nevadensis</i> )	Indian ricegrass ( <i>Achnatherum hymenoides</i> )	redstem stork's bill ( <i>Erodium cicutarium</i> )	Buckhorn Cholla ( <i>Cylindropuntia acanthocarpa</i> )
	Douglas rabbitbrush ( <i>Chrysothamnus viscidiflorus</i> )	low whollygrass (fluffgrass) ( <i>Dasyochloa pulchella</i> )	Cryptantha ( <i>Cryptantha spp.</i> )	Spanish dagger ( <i>Yucca schidigera</i> )
	desert peach ( <i>Prunus andersonii</i> )		daisy ( <i>Erigeron spp.</i> )	
	creosote bush ( <i>Larrea tridentata</i> )		desert dandelion ( <i>Malacothrix spp.</i> )	
	snakeweed ( <i>Gutierrezia spp.</i> )		Mojave buckwheat ( <i>Eriogonum fasciculatum</i> )	
	Fremont's Dalea ( <i>Psorothamnus fremontii</i> )			
	Virgin River Brittlebush ( <i>Encelia virginensis</i> )			
	Burrobrush (cheese bush) ( <i>Hymenoclea salsola</i> )			

Figure 16 shows the typical topographic, vegetation and soil surface characteristics of the unburned portions of the Boulder Spring Allotment.



**Figure 16.** Habitat characteristics of Range Site R030XB029NV in the unburned portions of the Boulder Spring Allotment (BS SS-1) (elevation 5,860 feet).

**Conclusion:** Unburned portions of the allotment: *Standard 3 Achieved*

Habitat indicators for Standard 3 refer to vegetative composition, structure, distribution, productivity, and nutritional value. Vegetative conditions in the unburned area on the Boulder Spring Allotment suitably reflect these attributes. In the unburned areas of the allotment, the vegetative communities are diverse and productive.

Field observations revealed diversity in vegetation types that are distributed in a patchy nature across the landscape in the unburned areas. Observations also indicate that species composition is appropriate when compared to the ESD. This indicates productive and functional plant communities with suitable structure and distribution.

Nevada ephedra, Indian ricegrass, and big galleta are known to be nutritious, palatable plant species for livestock and/or wildlife. Various forb species were also noted. This serves to provide a variable and productive forage base; and in combination with the aforementioned characteristics of the landscape, is capable of supporting an appropriate level of biodiversity while sustaining appropriate uses.

Moderate to good species diversity of perennial plants indicate that there is sufficient ground cover (in the form of live vegetation and litter) to protect soils and perpetuate vegetative productivity while ensuring appropriate vegetative structure and diversity.

In concert, the various vegetation habitats in the unburned portions of the allotment provide escape terrain and thermal cover, while short and tall statured woody species create perching/nesting habitat for the avian community. Such habitats are also capable of supporting a variety of small mammals, reptiles, and assorted numerous songbirds.

## **PART 2. ARE LIVESTOCK A CONTRIBUTING FACTOR TO NOT MEETING THE STANDARDS?**

Standards 1, 2, and 3 are being achieved in the unburned portions of both allotments.

The Standards are not being achieved in the burned portions of both allotments; however, grazing is not the causal factor. Failing to meet the standards can be attributed to the 2005 Delamar and Meadow Valley wildfires which impacted 15,585 acres (80%) of the Lower Riggs Allotment and 11,768 acres (66%) of the Boulder Spring Allotment.

## **PART 3. GUIDELINE CONFORMANCE REVIEW and SUMMARY**

### GUIDELINES for SOILS (Standard 1):

See conclusions for burned and unburned portions of both allotments under Standard 1; conclusion under Standard 2 regarding streambank stability; and Part 2 above.

### Burned Portions of the Lower Riggs and Boulder Spring Allotments

As mentioned, livestock grazing is not the causal factor for not meeting Standard 1. It is due to the 2005 Delamar and Meadow Valley wildfires. Therefore, the Guidelines are not applicable regarding the burned portions of the allotment. Furthermore, only 49% and 6% of the total burned acreage in the Lower Riggs and Boulder Spring Allotments, respectively, was aerially seeded (Table 5). Consequently, habitat rehabilitation subsequent to the fires was very limited.

### Unburned Portions of the Lower Riggs and Boulder Spring Allotments

Current livestock grazing management practices conform to Guideline 1.1, 1.2. The remaining two Guidelines are not applicable to the assessment area at this time.

Upland management practices are maintained and promoted through adequate vegetative ground cover.

### GUIDELINES for *ECOSYSTEM COMPONENTS* (Standard 2):

See conclusions for Standards 1 and 2, and Part 2, above.

### Burned Portions of the Lower Riggs and Boulder Spring Allotments

Upland indicators for the unburned and burned portions of both allotments were discussed under Standard 1 regarding data and field observations relating to soils, hydrologic processes, canopy and ground cover (including litter and rock). In addition, Standard 2 also discussed the upland indicators associated with the riparian zones.

See explanation above, under this part, regarding Standard 1 for the burned portions of both allotments.

### Unburned Portions of the Lower Riggs and Boulder Spring Allotments

#### Uplands

Current livestock grazing management practices conform to Guidelines 2.3, 2.4 and 2.6. The remaining six Guidelines are not applicable to the assessment area at this time.

#### Riparian

Current livestock grazing management practices conform to Guidelines 2.1, 2.2, 2.3, 2.4, 2.5, and 2.6. The remaining two Guidelines are not applicable to the assessment area at this time.

### GUIDELINES for *HABITAT AND BIOTA* (Standard 3):

See Conclusion for Standard 3, and Part 2 above.

## Burned Portions of the Lower Riggs and Boulder Spring Allotments

See explanation above regarding Standard I for the burned portions of the allotment.

## Unburned Portions of the Lower Riggs and Boulder Spring Allotments

Current livestock grazing management practices conform to Guidelines 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6. The remaining three Guidelines are not applicable to the assessment area at this time.

## **PART 4. MANAGEMENT PRACTICES TO CONFORM WITH GUIDELINES AND ACHIEVE STANDARDS**

### **RECOMMENDATIONS**

Consider incorporating the following recommendations into the Term Grazing Permits.

#### Lower Riggs Allotment

- Change the season of use from 5/1 – 3/24 to 3/1 – 2/28. Maintain the full Active Use

One of the results of past wildfires is the establishment of purple 3-awn, sometimes in copious amounts, in some portions of the burned areas in both allotments. Purple threeawn is a short-lived native perennial warm season bunchgrass. In the Southwest, where forage is limited, purple threeawn is considered good spring forage while the plants remain green and leaves are young (USDA Plant Guide). After the leaves begin to dry, it becomes relatively ignored by livestock and they will switch forage preferences.

Red brome (*Bromus rubens*) is an invasive annual grass which occurs in portions of both allotments. It is a species which begins growth in late winter/early spring prior to the green-up of perennial vegetation. With sufficient precipitation, even into April, this grass often reproduces in sizable amounts.

Therefore, changing the season of use from 5/1 – 3/24 to 3/1 – 2/28 allows livestock to take advantage of red brome and purple 3-awn during the most palatable period for these plant species.

#### Boulder Spring Allotment

- Maintain the full Active Use and Season of Use (10/1 – 3/31) as stated in the current term permit. However, base authorizations during any given year on annual forage availability and the terms and conditions and Best Management Practices included in the new term permit.

Add the following Best Management Practices to the Term Grazing Permits to assist in maintaining the Standards:

4. Allowable Use Levels on current year's growth of perennial upland vegetation (grasses, forbs and shrubs) will not exceed 40%.
5. Under the discretion of the BLM, watering locations will be used in a manner which will yield maximum livestock distribution in the allotment. Herding will be used, as needed, to achieve this objective.
6. Waterhauling will be limited to existing roads. No roads will be bladed or improved in any way, with mechanical equipment, without the expressed consent of the authorized officer.

Add the following term and condition to address the Meadow Valley Wilderness Area, created through the Lincoln County Conservation Recreation and Development Act P.L. 108-424, to comply with the Wilderness Act of 1964 (P.L. 88-577) (Congressional Grazing Guidelines, Appendix C):

7. Except in the case of emergency – the definition of which is defined in BLM Handbook 6340 (Management of Designated Wilderness Areas) – the permittee(s) must obtain written authorization from the District Manager prior to using any motorized vehicles, mechanical transport or motorized equipment in the Meadow Valley Wilderness Area. The use of motor vehicles, mechanical transport, or motorized equipment is not allowed for herding animals or routine inspection of the condition of developments or the condition of the range.

Add the following standard terms and conditions to assist in maintaining the Standards and Guidelines for Grazing Administration, in addition to other pertinent land use objectives for livestock use:

1. Livestock numbers identified in the Term Grazing Permit are a function of seasons of use and permitted use. Deviations from those livestock numbers and seasons of use may be authorized on an annual basis where such deviations are consistent with multiple-use objectives. Such deviations will require an application and written authorization from the authorized officer prior to grazing use.
2. The authorized officer is requiring that an actual use report (Form 4130-5) be submitted within 15 days after completing your annual grazing use.
3. Grazing use will be in accordance with the Standards and Guidelines for Grazing Administration. The Standards and Guidelines have been developed by the respective Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997. Grazing use will also be in accordance with 43 CFR Subpart 4180 - Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration.
4. If future monitoring data indicates that Standards and Guidelines for Grazing Administration are not being met, the permit will be reissued subject to revised terms and conditions.

5. The permittee must notify the authorized officer by telephone, with written confirmation, immediately upon discovery of any hazardous or solid wastes as defined in 40 CFR Part 261.
6. The permittee is responsible for all maintenance of assigned range improvements including wildlife escape ramps for both permanent and temporary water troughs.
7. When necessary, control or restrict the timing of livestock movement to minimize the transport of livestock-borne noxious weed seeds, roots, or rhizomes between weed-infested and weed-free areas.
8. Livestock will be moved to another authorized pasture (where applicable) or removed from the allotment before utilization objectives are met or no later than 5 days after meeting the utilization objectives. Any deviation in livestock movement will require authorization from the authorized officer.
9. The placement of mineral or salt supplements will be a minimum distance of 1/2 mile from known water sources, riparian areas, winterfat dominated sites, sensitive sites, populations of special status plant species, and cultural resource sites. Mineral and salt supplements will also be one mile from active sage-grouse leks. Placing supplemental feed (i.e., hay, grain, pellets, etc.) on public lands without authorization is prohibited.

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**Specialists:**

**/s/ Alicia Styles**

Alicia Styles – Wildlife Biologist

**9/23/2015**

Date

**/s/ Cameron Boyce**

Cameron Boyce – Soil, Water & Air Quality, Floodplains & Riparian  
Noxious and Invasive Weeds

**9/23/2015**

Date

**Prepared by:**

**/s/ Domenic A. Bolognani**

Domenic A. Bolognani – Rangeland Management Specialist

**9/23/2015**

Date

**Reviewed by:**

**/s/ Maggie Marston**

Maggie Marston – Assistant Field Manager, Caliente Field Office

**9/23/2015**

Date

**/s/ Chris Mayer**

Chris Mayer – Lead Range Management Specialist

**9/24/2015**

Date

**I concur:**

**/s/ Christopher Carlton**

Christopher Carlton – Caliente Field Manager

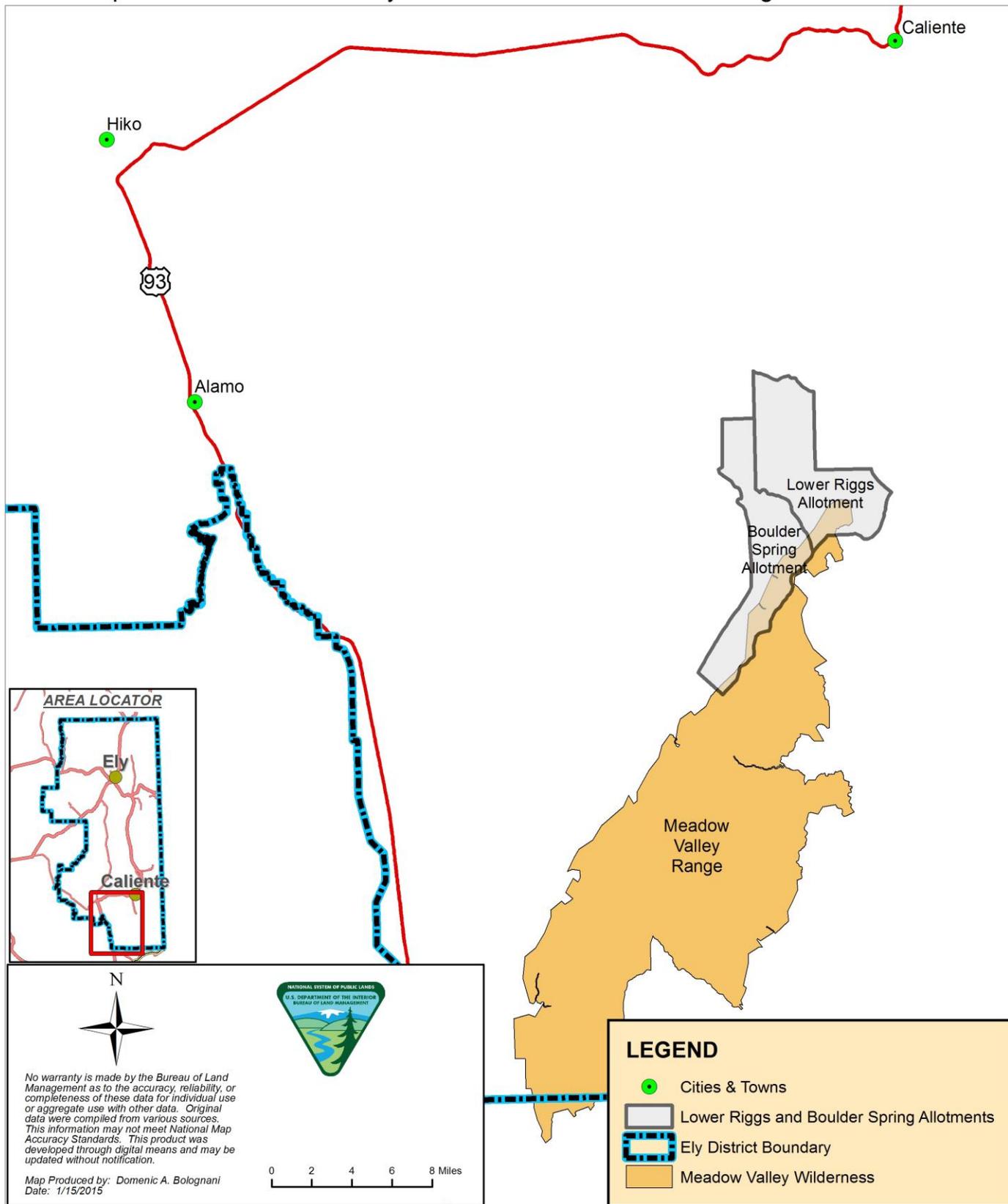
**9/25/2015**

Date

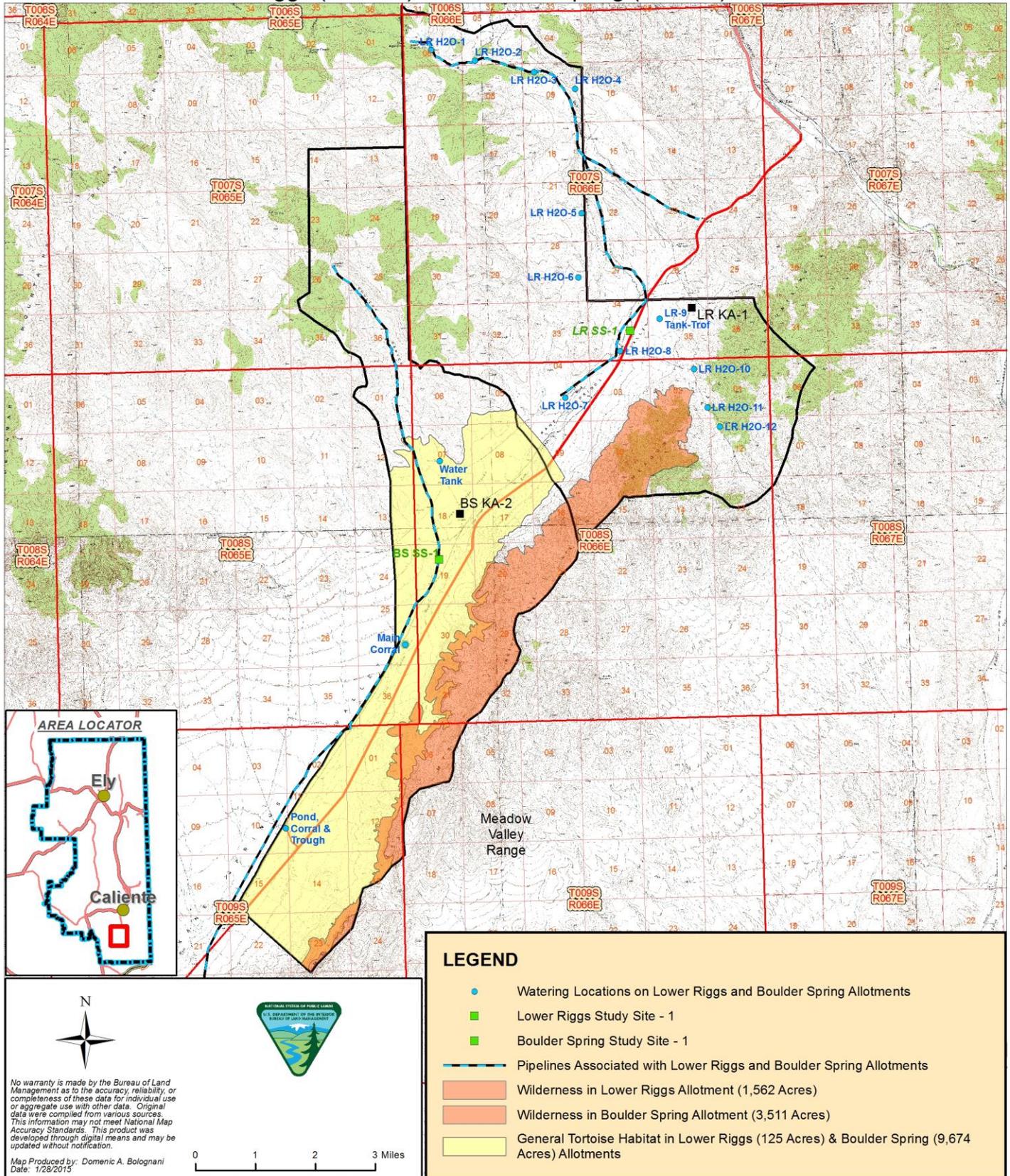
**APPENDIX A**  
(Standards Determination Document)

MAPS

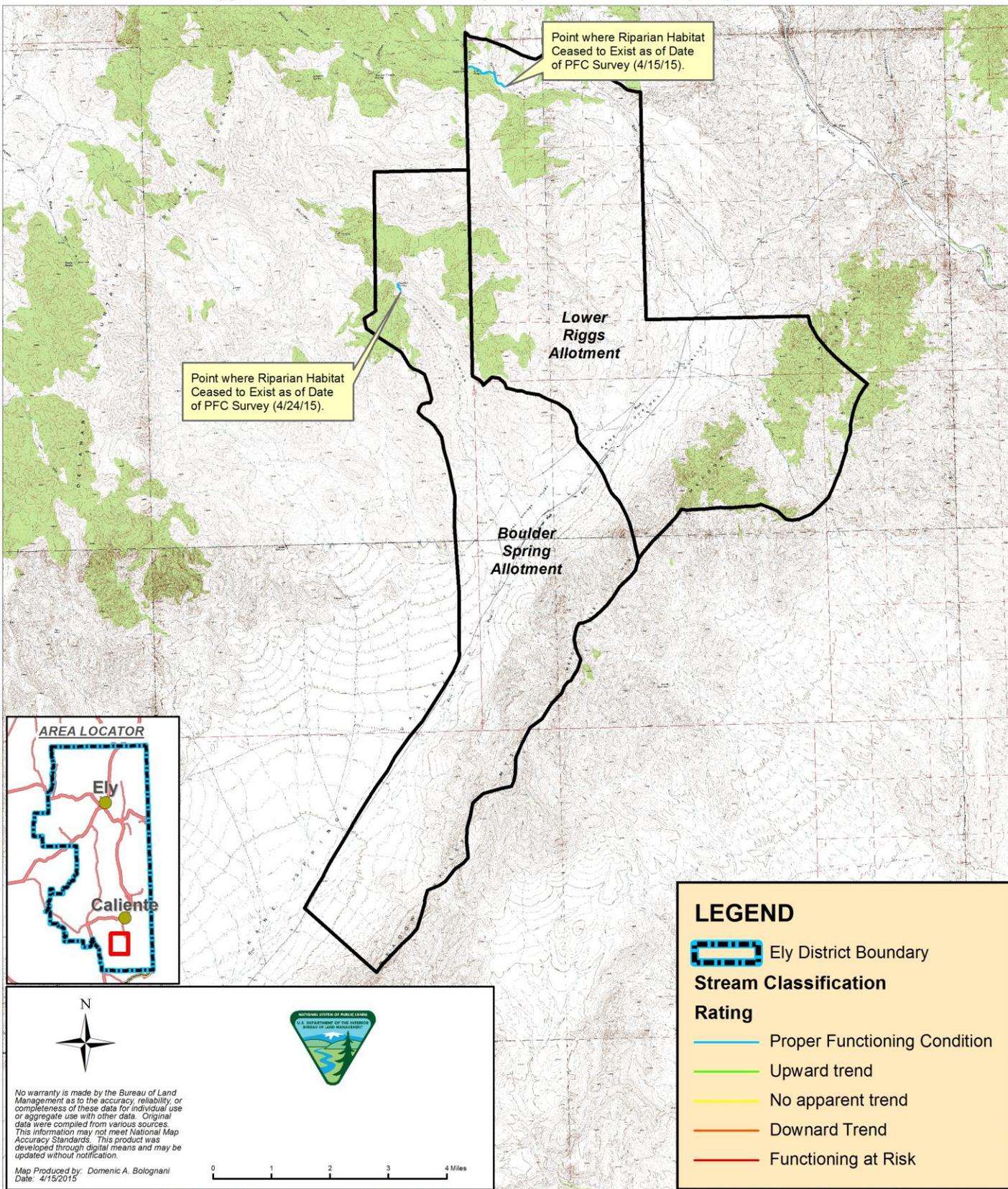
Location of the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments with Respect to the Meadow Valley Wilderness Area and Surrounding Nevada Towns.



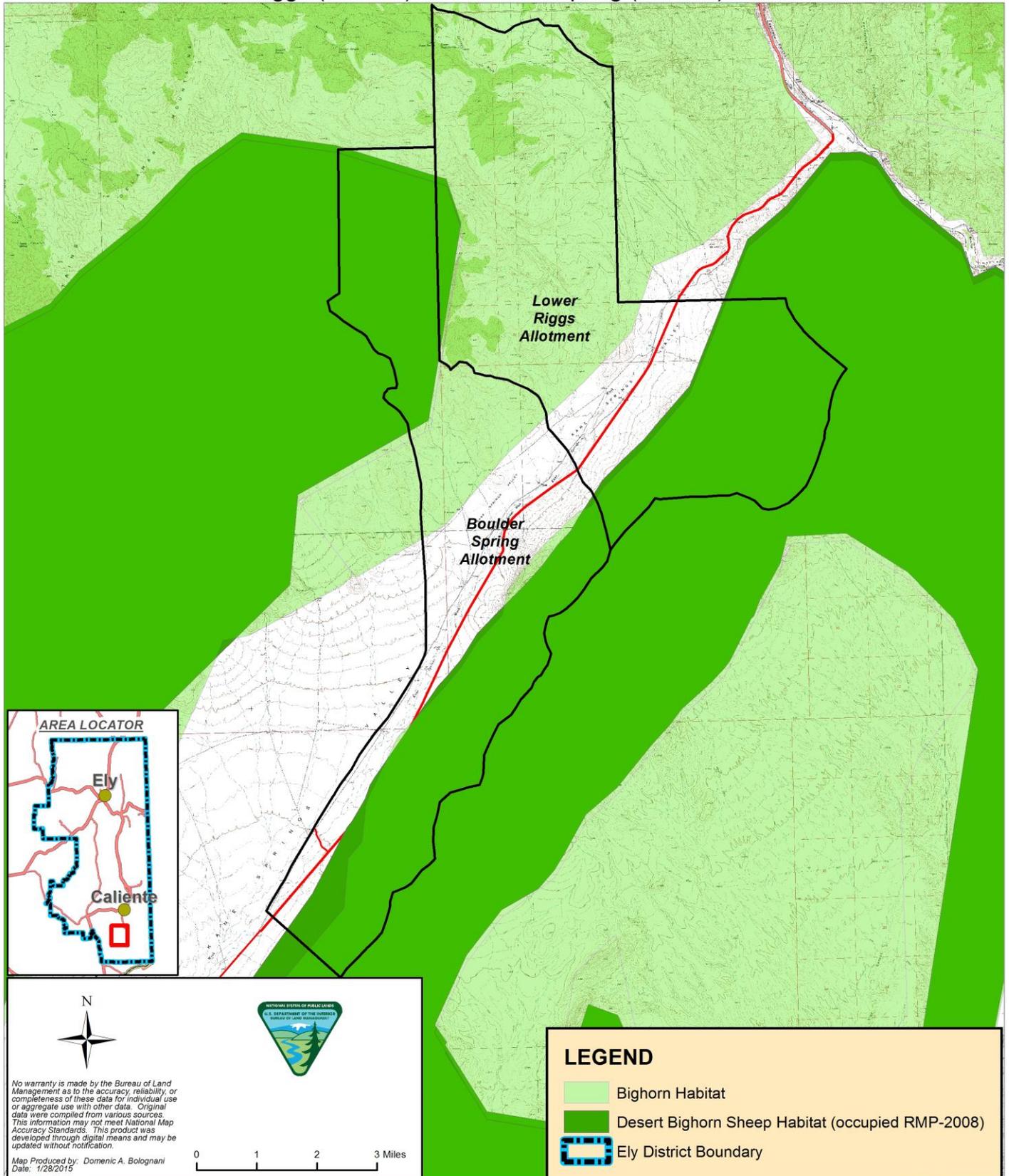
Location of Pipelines and Associated Existing Waters, Key Areas, Study Sites, Agassiz's Desert Tortoise Habitat, and Wilderness within the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments.



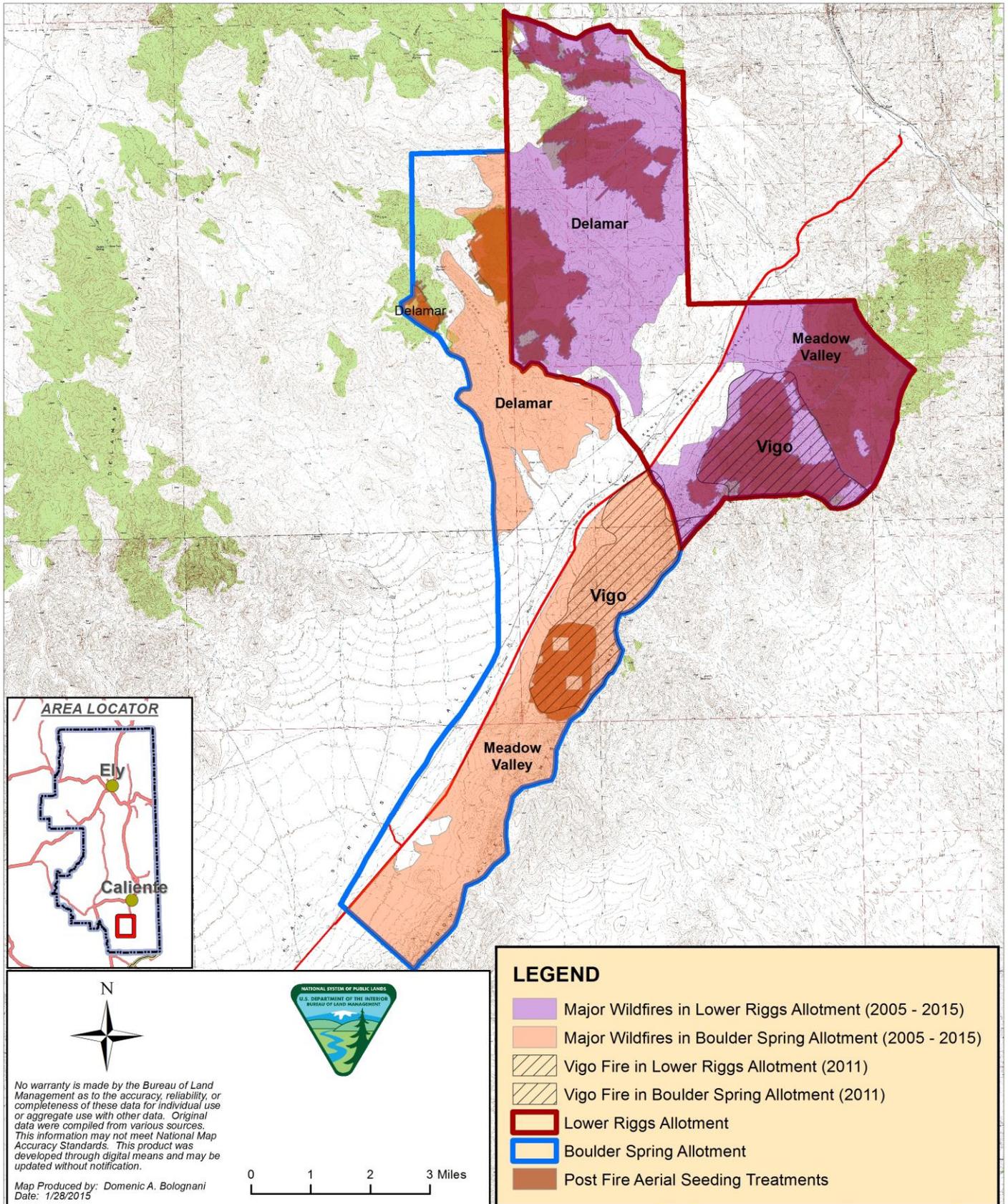
Stream Ratings (Proper Functioning Condition) for Riparian Zones Created by the Upper Riggs & Lower Riggs Springs on the Lower Riggs Allotment, and Boulder Spring on the Boulder Spring Allotment.



Location of Bighorn Sheep and Mule Deer Habitat within the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments.



Location of Past Wildfires and Post Fire Treatments which have Occurred from 2005-2015 within the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments.



**APPENDIX B**  
(Standards Determination Document)

Annual Livestock Grazing Use

Table 1. Annual Livestock Grazing Use for Lyle and Ruth Whiteside and 7J Ranch on the Lower Riggs Allotment from March 1, 2005 through February 28, 2015 (10 years).

Current Term Grazing Permit Information ----- Permittees/Season of Use/Active Use	Grazing Year (3/1 – 2/28)	Permittee	AUMs Licensed Each Year	AUMs Licensed Each Year as % of Total Active Use	Total AUMs Licensed Each Year	Total AUMs Licensed Each Year as a % of the Total Active Use	
Lower Riggs Allotment Season of Use = 5/1 - 3/24  <b>Active Use</b> Whiteside 1,099 AUMs 7J Ranch 309 AUMs <b>TOTAL 1,408 AUMs</b>	2005	7J Ranch	69	22%	316	22%	
		Whiteside	247	22%			
	2006	7J Ranch	0	0	0	0	
		Whiteside	0	0			
	2007	7J Ranch	0	0	0	0	
		Whiteside	0	0			
	2008	7J Ranch	0	0	450	32%	
		Whiteside	450	41%			
	2009	7J Ranch	0	0	377	27%	
		Whiteside	377	34%			
	2010	7J Ranch	0	0	334	24%	
		Whiteside	334	31%			
	2011	7J Ranch	197	64%	659	48%	
		Whiteside	462	42%			
	2012	7J Ranch	86	1%	368	26%	
		Whiteside	282	26%			
	2013	7J Ranch	100	32%	377	27%	
		Whiteside	277	25%			
	2014	7J Ranch	0	0	81	6%	
		Whiteside	81	7%			
	<b>Average</b>					<b>19.2%</b>	

Table 2. Annual Livestock Grazing Use for 7J Ranch on the Boulder Spring Allotment from March 1, 2005 through February 28, 2015 (10 years).

Allotment/Active Use/Season of Use	Grazing Year (3/1 – 2/28)	AUMs Licensed Each Year	% of Active Use
Boulder Spring (Active Use = 416 AUMs)  Season of Use = 10/1 – 3/31	2005	76	18%
	2006	200	48%
	2007	382	92%
	2008	401	96%
	2009	389	94%
	2010	333	80%
	2011	321	77%
	2012	285	69%
	2013	51	12%
	2014	0	0%
		<b>Average</b>	<b>59%</b>

**APPENDIX C**  
(Standards Determination Document)

**CONGRESSIONAL GRAZING GUIDELINES**

## Congressional Grazing Guidelines

(Excerpt from House Report 96-1126)

### Grazing in National Forest Wilderness Areas

Section 4(d)(4)(2) of the Wilderness Act states: "the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture."

The legislative history of this language is very clear in its intent that livestock grazing, and activities and the necessary facilities to support a livestock grazing program, will be permitted to continue in National Forest wilderness areas, when such grazing was established prior to classification of an area as wilderness.

Including those areas established in the Wilderness Act of 1964. Congress has designated some 188 areas, covering lands administered by the Forest Service, Fish and Wildlife Service, National Park Service and Bureau of Land Management as components of the National Wilderness Preservation System. A number of these areas contain active grazing programs, which are conducted pursuant to existing authorities. In all such cases, when enacting legislation classifying an area as wilderness, it has been the intent of the Congress, based on solid evidence developed by testimony at public hearings, that the practical language of the Wilderness Act would apply to grazing within wilderness areas administered by all Federal agencies, not just the Forest Service. In fact, special language appears in all wilderness legislation, the intent of which is to assure that the applicable provisions of the Wilderness Act, including Section 4(d)(4)(2), will apply to all wilderness areas, regardless of agency jurisdiction.

Further, during the 95th Congress, Congressional committees became increasingly disturbed that, despite the language of section 4(d)(4)(2) of the Wilderness Act and despite a history of nearly 15 years in addressing and providing guidance to the wilderness management agencies for development of wilderness management policies, National Forest administrative regulations and policies were acting to discourage grazing in wilderness, or unduly restricting on-the-ground activities necessary for proper grazing management. To address this problem, two House Committee on Interior and Insular Affairs Reports (95-620 and 95- 1821) specifically provided guidance as to how section 4(d)(4)(2) of the Wilderness Act should be interpreted. This guidance appeared in these reports as follows:

Section 4(d)(4)(2) of the Wilderness Act states that grazing in wilderness areas, if established prior to designation of the area as wilderness, "shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture". To clarify any lingering doubts, the committee wishes to stress that this language means that there shall be no curtailment of grazing permits or privileges in an area simply because it is designated as wilderness. As stated in the Forest Service regulations (36 CFR 293.7), grazing in wilderness areas ordinarily will be controlled under the general regulations governing grazing of livestock on National Forests\* \* \*. This includes the establishment of normal range allotments and allotment management plans. Furthermore, wilderness designation should not prevent the maintenance of existing fences or other livestock management improvements, nor the

construction and maintenance of new fences or improvements which are consistent with allotment management plans and/or which are necessary for the protection of the range.

Despite the language of these two reports, RARE II hearings and field inspection trips in the 96 Congress have revealed that National Forest administrative policies on grazing in wilderness are subject to varying interpretations in the field, and are fraught with pronouncements that simply are not in accordance with section 4(d)(4)(2) of the Wilderness Act. This had led to demands on the part of grazing permittees that section 4(d)(4)(2) of the Wilderness Act be amended to clarify the intentions of Congress. However, because of the great diversity of conditions under which grazing uses (including different classes of livestock) are managed on the public lands, the Conferees feel that the original broad language of the Wilderness Act is best left unchanged. Any attempts to draft specific statutory language covering grazing in the entire wilderness system (presently administered by four separate agencies in two different Departments) might prove to be unduly rigid in a specific area, and deprive the land management agencies of flexible opportunities to manage grazing in a creative and realistic site specific fashion.

Therefore, the conferees declined to amend section 4(d)(4)(2) of the Wilderness Act, agreeing instead to reaffirm the existing language and to include the following nationwide guidelines and specific statements of legislative policy. It is the intention of the conferees that the guidelines and policies be considered in the overall context of the purposes and direction of the Wilderness Act of 1964 and this Act, and that they be promptly, fully, and diligently implemented and made available to Forest Service personnel at all levels and to all holders of permits for grazing in National Forest Wilderness areas:

1. There shall be no curtailments of grazing in wilderness areas simply because an area is, or has been designated as wilderness, nor should wilderness designations be used as an excuse by administrators to slowly "phase out" grazing. Any adjustments in the numbers of livestock permitted to graze in wilderness areas should be made as a result of revisions in the normal grazing and land management planning and policy setting process, giving consideration to legal mandates, range condition, and the protection of the range resource from deterioration.

It is anticipated that the numbers of livestock permitted to graze in wilderness would remain at the approximate levels existing at the time an area enters the wilderness system. If land management plans reveal conclusively that increased livestock numbers or animal unit months (AUMs) could be made available with no adverse impact on wilderness values such as plant communities, primitive recreation, and wildlife populations or habitat, some increases in AUMs may be permissible. This is not to imply, however, that wilderness lends itself to AUM or livestock increases and construction of substantial new facilities that might be appropriate for intensive grazing management in non-wilderness areas.

2. The maintenance of supporting facilities, existing in the area prior to its classification as wilderness (including fences, line cabins, water wells and lines, stock tanks, etc.), is permissible in wilderness.

Where practical alternatives do not exist, maintenance or other activities may be accomplished through the occasional use of motorized equipment. This may include, for example, the use of backhoes to maintain stock ponds, pickup trucks for major fence repairs, or specialized equipment to repair stock watering facilities. Such occasional use of motorized equipment should be expressly authorized in the grazing permits for the area involved. The use of motorized equipment should be based on a rule of practical necessity and reasonableness. For example, motorized equipment need not be allowed for the placement of small quantities of salt or other activities where such activities can reasonably and practically be accomplished on horseback or foot. On the other hand, it may be appropriate to permit the occasional use of motorized equipment to haul large quantities of salt to distribution points. Moreover, under the rule of reasonableness, occasional use of motorized equipment should be permitted where practical alternatives are not available and such use would not have a significant adverse impact on the natural environment. Such motorized equipment uses will normally only be permitted to those portions of a wilderness area where they had occurred prior to the area's designation as wilderness or are established by prior agreement.

3. The placement or reconstruction of deteriorated facilities or improvements should not be required to be accomplished using "natural materials", unless the material and labor costs of using natural materials are such that their use would not impose unreasonable additional costs on grazing permittees.
4. The construction of new improvements or replacement of deteriorated facilities wilderness is permissible if in accordance with those guidelines and management plans governing the area involved. However, the construction of new improvements should be primarily for the purpose of resource protection and the more effective management of these resources rather than to accommodate increased numbers of livestock.
5. The use of motorized equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is also permissible. This privilege is to be exercised only in true emergencies, and should not be abused by permittees.

In summary, subject to the conditions and policies outlined above, the general rule of thumb on grazing management in wilderness should be that activities or facilities established prior to the date of an area's designation as wilderness should be allowed to remain in place and may be replaced when necessary for the permittee to properly administer the grazing program. Thus, if livestock grazing activities and facilities were established in an area at the time Congress determined that the area was suitable for wilderness and placed the specific area in the wilderness system, they should be allowed to continue. With respect to areas designated as wilderness prior to the date of this Act, these guidelines shall not be considered as a direction to re-establish uses where such uses have been discontinued.

It is also the understanding of the conferees that the authorizing Committees intend to closely monitor the implementation of the guidelines through subsequent oversight hearings to insure that the spirit, as well as the letter, of the guidelines is adhered to by the Forest Service. Of course, the inclusion of these guidelines in this joint Statement of Managers does not preclude the Congress from dealing with the issue of grazing in wilderness areas statutorily in the future.

**APPENDIX III**  
(EA)

STANDARD TERMS AND CONDITIONS

1. Livestock numbers identified in the Term Grazing Permit are a function of seasons of use and permitted use. Deviations from those livestock numbers and seasons of use may be authorized on an annual basis where such deviations are consistent with multiple-use objectives. Such deviations will require an application and written authorization from the authorized officer prior to grazing use.
2. The authorized officer is requiring that an actual use report (Form 4130-5) be submitted within 15 days after completing your annual grazing use.
3. Grazing use will be in accordance with the Standards and Guidelines for Grazing Administration. The Standards and Guidelines have been developed by the respective Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997. Grazing use will also be in accordance with 43 CFR Subpart 4180 - Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration.
4. If future monitoring data indicates that Standards and Guidelines for Grazing Administration are not being met, the permit will be reissued subject to revised terms and conditions.
5. The permittee must notify the authorized officer by telephone, with written confirmation, immediately upon discovery of any hazardous or solid wastes as defined in 40 CFR Part 261.
6. The permittee is responsible for all maintenance of assigned range improvements including wildlife escape ramps for both permanent and temporary water troughs.
7. When necessary, control or restrict the timing of livestock movement to minimize the transport of livestock-borne noxious weed seeds, roots, or rhizomes between weed-infested and weed-free areas.
8. Livestock will be moved to another authorized pasture (where applicable) or removed from the allotment before utilization objectives are met or no later than 5 days after meeting the utilization objectives. Any deviation in livestock movement will require authorization from the authorized officer.
9. The placement of mineral or salt supplements will be a minimum distance of 1/2 mile from known water sources, riparian areas, winterfat dominated sites, sensitive sites, populations of special status plant species, and cultural resource sites. Mineral and salt supplements will also be one mile from active sage-grouse leks. Placing supplemental feed (i.e., hay, grain, pellets, etc.) on public lands without authorization is prohibited.

## **APPENDIX IV**

(EA)

Specific Management Guidelines for Range Improvements  
within the Meadow Valley Range Wilderness

Range Improvements Associated with the Lower Riggs and Boulder Spring Allotments that are Located in the Meadow Valley Range Wilderness.

Wilderness	Allotment	Acres of Wilderness within Each Allotment	Identified Developments in Wilderness	Range Improvement Project #
Meadow Valley Range	Lower Riggs	1,562 acres	- - - - -	- - - - -
	Boulder Spring	3,511 acres	Fence (0.4 mi) T.09 S., R.65 E., Sec. 13, MDBM.	None known
			Grapevine/Henry Wilson Fence – .5 miles in Boulder Spring Allotment and .95 miles in Henrie Complex Allotment T.9 S., R.65 E., sec. 22, 23, and 26, MDBM.	573514/570410
			Kane Springs Elgin Fence (0.1 mi) T.8 S., R.66 E., sec. 16, MDBM.	570589

Fences

Fences throughout the planning area require routine maintenance. Additional maintenance may be required due to damage from wildfires, animals, or intentional destruction

For any single segment of pre-existing fence at least one-quarter mile from any designated motorized route and at least one-half mile in length, the use of the motorized vehicles or equipment may be allowed for replacement or repair to damage otherwise unpreventable through routine inspection and maintenance (i.e., destruction by wildfire, or extensive damage from livestock, wild horses and/or wildlife). It is anticipated that damage which would require the use of motorized equipment or vehicles to replace segments longer than one-half mile would not occur frequently. Alternative fence locations, materials, construction techniques, and the use of additional gates would be evaluated prior to authorizing more frequent use of motorized equipment or vehicles for fence that repeatedly requires repairs.

Access

In cases with approved motorized access for any of the above maintenance, access would be confined to previously utilized routes except in cases where the potential for resource damage is determined to be unacceptable. In such cases, an alternate route may be identified. Some previously utilized routes have been restored to their natural condition in order to prevent unauthorized motorized use. It is anticipated that most repair of range developments requiring motorized vehicles would be accomplished with a single trip using one vehicle and, as needed, a trailer. The use of motorized vehicles or equipment would be scheduled to minimize disturbance to riparian areas, soils, wildlife, and the visiting public.

Access route maintenance may use hand tools (shovel, hand saw) for minor repair needs, when approved in association with other maintenance requests. The use of heavy equipment for major access route developments would be considered on a case-by-case basis with site-specific NEPA analysis.

Except in the case of emergency, permittees must obtain written authorization from the District Manager prior to using any motorized equipment or vehicles within the wilderness areas. For uses evaluated as part of this document, authorizations would typically be issued within one to two weeks from the time of request.

### Emergencies

For the purposes of allowing motorized equipment and/or vehicles for grazing management, an emergency is defined as any unpreventable or reasonably unforeseeable set of circumstances which, without immediate action, would likely result in the death of livestock or result in long-term or irreversible impact to the wilderness resource. At a minimum, grazing permittees must obtain verbal authorization from the District Manager for each instance in which motorized equipment or vehicles are to be used in the wilderness. Verbal authorization must be followed up with a written authorization for the wilderness file. In the event that the District Manager is not immediately available, the permittee must notify the District Manager as soon as practicable but no later than 48 hours following the use of motorized equipment or vehicles.

In times of drought springs flow may be reduced or may no longer flow. Water hauls would be considered on a case-by-case basis and would require site specific NEPA analysis.

### Authorization Process

All authorizations for the use of motorized equipment, motorized vehicles or mechanized equipment (see Appendix F, Glossary (p. 123)) would specify the type of vehicle and number of vehicle passes, the route(s) to be used and period of use for motorized equipment. The number of vehicle passes authorized would be based upon the minimum number necessary to safely accomplish maintenance objectives. The selection of vehicles to be used would be based upon readily available and cost-effective equipment which minimizes soil disturbance, compaction and resource damage.

Prior to a motorized, mechanized vehicle or equipment entry, the BLM must complete a Minimum Requirements Analysis (MRA) and the BLM must issue a letter of authorization to the permittee. The MRA process includes the use of a Minimum Requirements Decision Guide (MRDG), which is designed to assist wilderness managers in making appropriate decisions in wilderness. Conducting a minimum requirements analysis follows the direction of both law and agency policy. The MRDG uses a process to identify, analyze, and select management actions that are the minimum necessary for wilderness administration. It applies this direction from the Act (section 4(c)) and incorporates a two-step process. Step 1 determines whether administrative action is necessary. If action is found to be necessary, then Step 2 provides guidance for determining the minimum activity. Step 2 has been referred to as determining the minimum tool but could include any type of activity, method, or equipment.

The Proposed Action would not eliminate the need for the BLM to complete a MRA for the specific maintenance needs, and the permittee is required to obtain — in advance — a letter of authorization for each maintenance activity. The authorization should be for no more than is practically necessary to support the livestock grazing program and for actions that would not

have a significant adverse impact on the natural environment. This Letter of Authorization would include the following information:

- name and project number of the range development and description of the maintenance action,
- the range of dates the maintenance action would take place,
- the number of days authorized for use of motorized/mechanized equipment or vehicles,
- the authorized equipment or vehicle(s) including quantity,
- any required mitigation measures,
- exact travel route(s), and
- any rehabilitation requirements.

**Excerpt from BLM Manual 6340 – Management of Designated Wilderness Areas (Public) (July 13, 2012):**

“8. Grazing

- a. **Background.** The Wilderness Act, Section 4(d)(4)(2) states: “the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the [administering agency].” In 1990, the House of Representatives issued House Report 101-405, Appendix A— Grazing Management Guidelines, in association with the Arizona Desert Wilderness Act of 1990. Although the Wilderness Act provides the authority for managing grazing in wilderness, this report (and its predecessor, House Report 96-1126, issued in association with the Colorado Wilderness Act of 1980) has been cited in many subsequent wilderness bills and provides helpful information. Grazing is specifically permitted in wilderness under Section 4(d)(4)(2) of the Act. After designation of an area as wilderness, Allotment Management Plans may need to be revised or developed for allotments within a wilderness to ensure they are consistent with this policy.
- b. **Continuation of livestock grazing.** Where grazing of livestock has been authorized by a grazing permit or grazing lease for land within a wilderness, and the use was established before Congress established the wilderness area, under Section 4(d)(4)(2) of the Act it “shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the [administering agency].” The continuation of existing grazing may apply to not only the utilization of the forage resource, but also the use and maintenance of livestock management developments and facilities that were associated with the grazing activity at the time of designation and have been authorized by the BLM. Grazing management activities, including the construction, use, and maintenance of livestock management developments, must comply with the BLM grazing regulations 43 CFR 4100, as well as this manual.
- c. **Adjustments in levels of authorized use**

There will be no automatic reduction in the amount of livestock use permitted simply because an area is designated as wilderness. Reductions should be made only as a result of normal changes in grazing management based on range condition and in accordance

with the BLM's grazing regulations. For example, an increase in the number of livestock may be permitted if it can be demonstrated that the increase will have no negative impact on wilderness character.

**d. Grazing facilities**

i. *Structures and installations used for livestock management existing at the time of designation* may be maintained. Maintenance may be done by the occasional use of motorized equipment where:

- A. practical non-motorized alternatives do not exist; and
- B. the motorized use is expressly authorized in the grazing permit and advanced written permission for each maintenance activity is granted by the BLM; and
- C. the motorized use was allowed prior to wilderness designation.

In most situations, authorization for motorized use would be considered on a case-by-case basis—for example, to remove sediment from a stock reservoir. In some cases, a schedule could be established—for example, hauling water to fill a tank. In all cases, authorization should be for no more than is practically necessary to support the livestock grazing program and for actions that would not have a significant adverse impact on the natural environment. The use of an existing route and mode of travel also must cause the least impact on wilderness character and be similar to what was allowed prior to wilderness designation. These decisions are made during the grazing permitting process with the use of a Minimum Requirements Analysis, completed in conjunction with the associated NEPA analysis, through which alternatives are analyzed to determine the method that least impacts wilderness character while remaining consistent with the rule of practical necessity and reasonableness in supporting the livestock grazing program. Actual authorization is granted, consistent with the NEPA analysis, in a letter of authorization. Authorizations need to be consistent with the Decision Document, including specified design features or mitigation measures and any specified follow-up actions. Authorizations will include exact travel routes to be followed by any motorized equipment or mechanical transport, as well as rehabilitation requirements.

Where practical alternatives to the use of motor vehicles exist—for example, using horses to distribute small quantities of salt or repair short sections of fence—the BLM will only authorize non-motorized activities.

ii. *Reconstruction or replacement of existing facilities* will require the use of natural materials if their use would not impose unreasonable added cost for the grazing permittee. An exception is when use of other materials would require less frequent motorized or mechanized access to perform maintenance.

iii. *New facilities* will be permitted by the BLM only for the purpose of enhancing the protection of wilderness character.

e. **Use of motorized equipment.** Except as allowed under sub-section 9.d [*sic*], above, the use of motor vehicles, motorized equipment, or mechanical transport to carry out a lawful grazing-associated activity is limited to emergencies only, such as rescuing sick animals or placing feed in emergency situations. In emergencies, permittees do not need prior authorization for these uses, but must notify the BLM of their use reasonably soon thereafter. The use of motor vehicles, motorized equipment, or mechanical transport is not allowed for herding animals or routine inspection of the condition of developments or the condition of the range.”

## References

BLM Manual 6340 (Management of Designated Wilderness Areas (Public)) (dated 7/13/2012)

Delamar Mountains, Meadow Valley Range and Mormon Mountains Wilderness - Final Wilderness Management Plan and Environmental Assessment. December 16, 2009. NV-040-08-14-EA.

**APPENDIX V**  
(EA)

**WEED RISK ASSESSMENT**

# RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

Term Grazing Permit Renewals  
for  
Lyle & Ruth Whiteside (#2703298) on the Lower Riggs Allotment (#01087)  
and  
Richard & Meredith Rankin (#2704063) on the Lower Riggs  
and Boulder Spring (#21009) Allotments.

On November 18, 2015, a Noxious & Invasive Weed Risk Assessment was completed on the Lower Riggs and Boulder Spring Allotments in Lincoln County, Nevada in preparation for the permit renewal process scheduled for 2016.

The Bureau of Land Management (BLM), Caliente Field Office, proposes to fully process and issue new term grazing permits for Lyle & Ruth Whiteside (#2703298) on the Lower Riggs Allotment (#01087) and Richard & Meredith Rankin (#2704063) on the Lower Riggs and Boulder Spring (#21009) Allotments.

The Proposed Action is to maintain the current mandatory terms and conditions as stated in the current term grazing permits, with grazing authorizations being based on annual forage availability; and the terms and conditions included in the new term permits. The Proposed Action would also include changing the Season of Use on the Lower Riggs Allotment from 5/1 – 3/24 to yearlong (3/1 – 2/28).

The Proposed Action would also add other terms and conditions to the permits that would aid in achieving/maintaining the Mojave-Southern Great Basin Standards. No other changes to any of the permits would be made.

Tables 1 and 2 display the mandatory terms and conditions for the current term grazing permits for Lyle and Ruth Whiteside on the Lower Riggs Allotment, and Richard and Meredith Rankin on the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments, respectively.

**Table 1.** Current term grazing permit for Lyle and Ruth Whiteside (#2703298) on the Lower Riggs Allotment (#01087).

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** % Public Land	AUMs		
Name	Number		* Number	Kind	Begin	End		Active Use	Hist. Susp. Use	Permitted Use
Lower Riggs	1087	#2703298	102	cattle	3/1	3/24	100%	1,099	0	1,099
					5/1	2/28				

\* This number is approximate

\*\* This is for billing purposes only.

**Table 2.** Current term grazing permit for Richard and Meredith Rankin on the Lower Riggs (#01087) and Boulder Spring (#21009) Allotments.

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** %	AUMs		
Name	Number		* Number	Kind	Begin	End	Public Land	Active Use	Hist. Susp. Use	Permitted Use
Boulder Spring	21009	#2704063	70	cattle	10/1	3/31	100%	416	0	416
Lower Riggs	01087		29	cattle	3/1	3/24	100%	309	0	309
					5/1	2/28				

\* These numbers are approximate

\*\* This is for billing purposes only.

The Proposed Action would add the following Best Management Practices to the term grazing Permits:

8. Allowable Use Levels on current year's growth of perennial upland vegetation (grasses, forbs and shrubs) will not exceed 40%.
9. Under the discretion of the BLM, watering locations will be used in a manner which will yield maximum livestock distribution in the allotment. Herding will be used, as needed, to achieve this objective.
10. Waterhauling will be limited to existing roads. No roads will be bladed or improved in any way, with mechanical equipment, without the expressed consent of the authorized officer.

No field weed surveys were completed for this project. Instead the Ely District weed inventory data was consulted. This area was last surveyed in 2013. According to this survey, no noxious weeds are known to occur within or immediately adjacent to the allotment boundaries. Tall Whitetop (*Cardaria draba*) has been identified approximately three miles east of the Lower Riggs Allotment (Map #1).

Also, while not officially documented, the following non-native invasive weeds occur within or vicinal to the allotment: cheatgrass (*Bromus tectorum*) and Russian thistle (*Salsola kali*).

**Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.**

None (0)	Noxious/invasive weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious/invasive weed species in the project area.
Low (1-3)	Noxious/invasive weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious/invasive weeds into the project area.
Moderate (4-7)	Noxious/invasive weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious/invasive weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious/invasive weeds within the project area.
High (8-10)	Heavy infestations of noxious/invasive weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious/invasive weeds on disturbed sites throughout much of the project area.

For this project, the factor rates as Moderate (4) at the present time. Grazing can increase the populations of the invasive weeds already within the permitted areas and could aid in the introduction of weeds from surrounding areas. However the design features of the Proposed Action will help to prevent weeds from establishing or spreading.

**Factor 2 assesses the consequences of noxious/invasive weed establishment in the project area.**

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious/invasive weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

This project rates as Moderate (5) at the present time. If noxious weed infestations establish within the permitted area this could have an adverse impact those native plant communities however, the Proposed Action includes measures to increase native plants and to help prevent weeds from establishing. An increase of red brome could alter the fire regime in the area.

**The Risk Rating is obtained by multiplying Factor 1 by Factor 2.**

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious/invasive weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious/invasive weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious/invasive weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.

For this project, the Risk Rating is Moderate (20). This indicates that the project can proceed as planned as long as the following measures are followed:

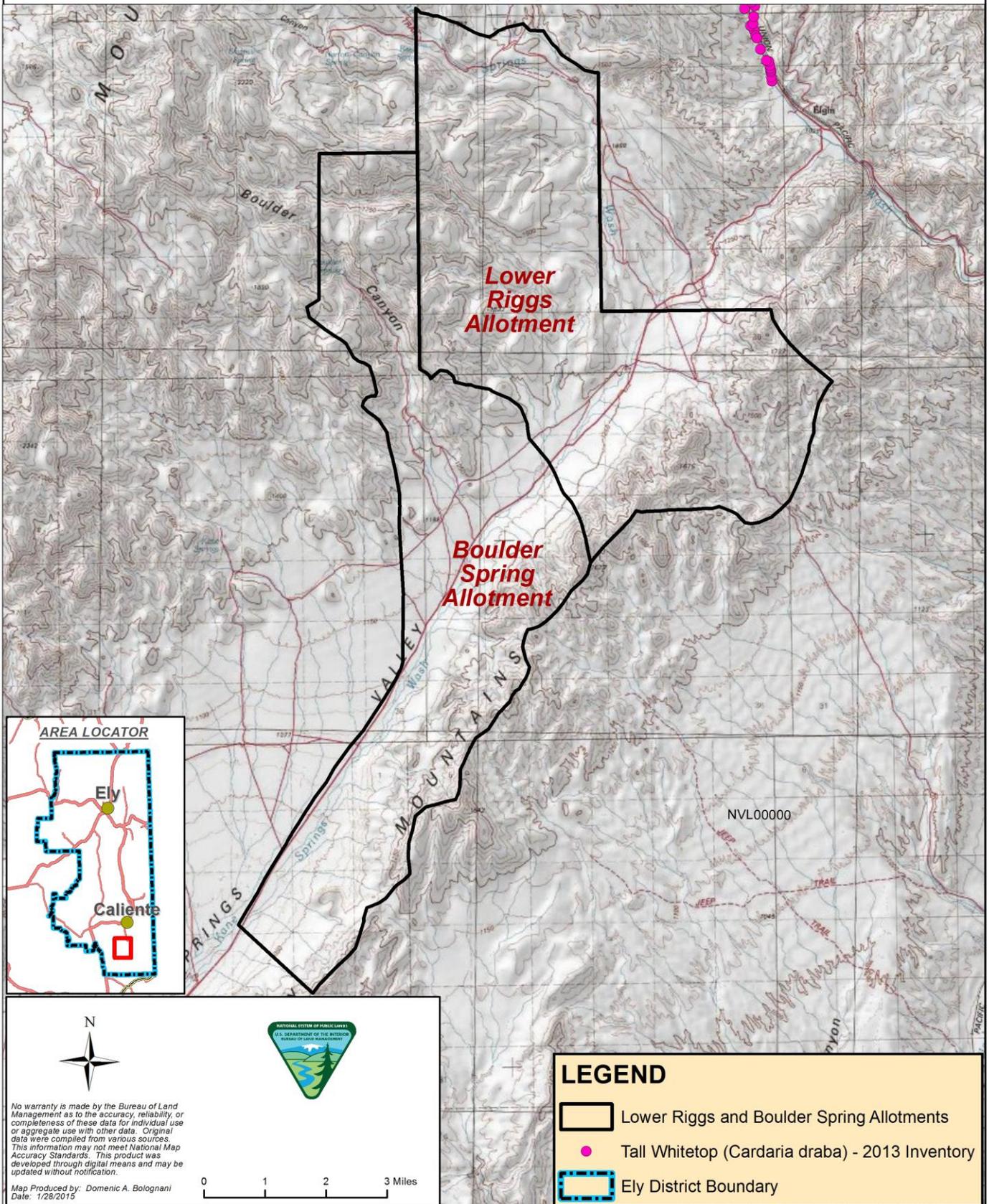
- To eliminate the introduction of noxious weed seeds, roots, or rhizomes all interim and final seed mixes, hay, straw, hay/straw, or other organic products used for feed or bedding will be certified free of plant species listed on the Nevada noxious weed list or specifically identified by the BLM Ely District Office.
- Prior to entering public lands, the BLM will provide information regarding noxious weed management and identification to the permit holders affiliated with the project. The importance of preventing the spread of weeds to uninfested areas and importance of controlling existing populations of weeds will be explained.

- The range specialist for the allotment will include weed detection into project compliance inspection activities. If the spread of noxious weeds is noted, appropriated weed control procedures will be determined in consultation with BLM personnel and will be in compliance with the appropriate BLM handbook sections and applicable laws and regulations.
- Grazing will be conducted in compliance with the Ely District BLM noxious weed schedules. The scheduled procedures can significantly and effectively reduce noxious weed spread or introduction into the project area.
- When necessary, control or restrict the timing of livestock movement to minimize the transport of livestock-borne noxious weed seeds, roots, or rhizomes between weed-infested and weed-free areas.
- Any newly established populations of noxious/invasive weeds discovered will be communicated to the Ely District Noxious and Invasive Weeds Program for treatment.

Reviewed by: /s/ Cameron Boyce  
Cameron Boyce  
Natural Resource Specialist

11/18/2015  
Date

Location of Known Noxious Weeds in and Vicinal to the Lower Riggs (#1087) and Boulder Spring (#21009) Allotments.



**APPENDIX VI**  
(EA)

Wildlife and Special Status Species

## **Federally Threatened and Endangered Species**

### *Endangered*

No records; not present.

### *Threatened*

Desert tortoise (*Gopherus agassizii*)

- General habitat in southwestern half of Boulder Spring extending northeast just into Lower Riggs.

## **Bureau of Land Management Sensitive Species**

### *Plants*

No records.

### *Mammals*

Big brown bat (*Eptesicus fuscus*)

California myotis (*Myotis californicus*)

Desert bighorn sheep (*Ovis canadensis nelsoni*)

- Both Lower Riggs and Boulder Spring contain occupied and unoccupied habitat at the higher elevations.

Fringed myotis (*Myotis thysanodes*)

Little brown myotis (*Myotis lucifugus*)

Mexican free-tailed bat (*Tadarida brasiliensis*)

Pallid bat (*Antrozous pallidus*)

Western pipistrelle (*Parastrellus hesperus*)

### *Birds<sup>2</sup>*

Brewer's sparrow (*Spizella breweri*) X

Ferruginous hawk (*Buteo regalis*) O

Golden eagle (*Aquila chrysaetos*) C

- One nest 0.8 miles from Boulder Spring and 1.5 miles from Lower Riggs.

Greater sage-grouse (*Centrocercus urophasianus*)

- Not present; outside habitat range.

Loggerhead shrike (*Lanius ludovicianus*) C

Sage thrasher (*Oreoscoptes montanus*) O

Swainson's hawk (*Buteo swainsoni*) O

Western burrowing owl (*Athene cunicularia hypugaea*) O

### *Reptiles*

Banded gila monster (*Heloderma suspectum cinctum*)

- Likely to occur.

## *Amphibians*

Arizona toad (*Anaxyrus microscaphus*)

- Not BLM sensitive.
- Potential to occur.

## *Fish*

No records.

## *Invertebrates*

No records.

## **Other Vertebrate Species**

### *Mammals*

Cactus deermouse (*Peromyscus eremicus*)

Desert kangaroo rat (*Dipodomys deserti*)

Desert woodrat (*Neotoma lepida*)

Elk (*Cervus elaphus*)

- General habitat in the northwest corners of both Lower Riggs and Boulder Spring.

Gray fox (*Urocyon cinereoargenteus*)

Kit fox (*Vulpes macrotis*)

Little pocket mouse (*Perognathus longimembris*)

Merriam's kangaroo rat (*Dipodomys merriami*)

Mule deer (*Odocoileus hemionus*)

- Lower Riggs – crucial summer habitat in the northwest corner; the rest of the allotment is general habitat.
- Boulder Spring – crucial summer habitat in the northwest corner; the higher elevations of the allotment are general habitat.

North American deermouse (*Peromyscus maniculatus*)

Ord's kangaroo rat (*Dipodomys ordii*)

Rock squirrel (*Otospermophilus variegatus*)

### *Waterbirds*

Great blue heron (*Ardea herodias*) X

### *Landbirds*

Abert's towhee (*Melospiza aberti*) C

American kestrel (*Falco sparverius*) X

Ash-throated flycatcher (*Myiarchus cinerascens*) P

Barn swallow (*Hirundo rustica*) X

Bell's vireo (*Vireo bellii*) P

Bewick's wren (*Thryomanes bewickii*) P

Black-chinned sparrow (*Spizella atrogularis*) O

Black-headed grosbeak (*Pheucticus melanocephalus*) O

Black phoebe (*Sayornis nigricans*) X  
 Black-tailed gnatcatcher (*Polioptila melanura*) O  
 Black-throated sparrow (*Amphispiza bilineata*) C  
 Blue-gray gnatcatcher (*Polioptila caerulea*) X  
 Blue grosbeak (*Passerina caerulea*) P  
 Brewer's blackbird (*Euphagus cyanocephalus*) X  
 Brown-crested flycatcher (*Myiarchus tyrannulus*) O  
 Brown-headed cowbird (*Molothrus ater*) P  
 Bullock's oriole (*Icterus bullockii*) X  
 Cactus wren (*Campylorhynchus brunneicapillus*) O  
 Canyon wren (*Catherpes mexicanus*) X  
 Cassin's kingbird (*Tyrannus vociferans*) O  
 Cattle egret (*Bubulcus ibis*) X  
 Chipping sparrow (*Spizella passerina*) O  
 Chukar (*Alectoris chukar*) O<sup>3</sup>  
 Cliff swallow (*Petrochelidon pyrrhonota*) C  
 Common raven (*Corvus corax*) C  
 Common yellowthroat (*Geothlypis trichas*) X  
 Cooper's hawk (*Accipiter cooperii*) C  
 Dusky flycatcher (*Empidonax oberholseri*) O  
 Gambel's quail (*Callipepla gambelii*) P  
 Greater roadrunner (*Geococcyx californianus*) X  
 Great horned owl (*Bubo virginianus*) C  
 Green-tailed towhee (*Pipilo chlorurus*) O  
 Horned lark (*Eremophila alpestris*) O  
 House finch (*Haemorhous mexicanus*) P  
 House sparrow (*Passer domesticus*) X<sup>3</sup>  
 House wren (*Troglodytes aedon*) X  
 Indigo bunting (*Passerina cyanea*) O  
 Ladder-backed woodpecker (*Picoides scalaris*) X  
 Lark sparrow (*Chondestes grammacus*) O  
 Lazuli bunting (*Passerina amoena*) P  
 Lesser goldfinch (*Spinus psaltria*) X  
 Long-eared owl (*Asio otus*) O  
 Lucy's warbler (*Leiothlypis luciae*) X  
 MacGillivray's warbler (*Geothlypis tolmiei*) O  
 Mourning dove (*Zenaida macroura*) P  
 Northern harrier (*Circus cyaneus*) O  
 Northern rough-winged swallow (*Stelgidopteryx serripennis*) X  
 Phainopepla (*Phainopepla nitens*) O  
 Prairie falcon (*Falco mexicanus*) C  
 Red-breasted sapsucker (*Sphyrapicus ruber*) O  
 Red-tailed hawk (*Buteo jamaicensis*) C  
 Rock wren (*Salpinctes obsoletus*) X  
 Say's phoebe (*Sayornis saya*) X  
 Scott's oriole (*Icterus parisorum*) O  
 Sharp-shinned hawk (*Accipiter striatus*) O  
 Short-eared owl (*Asio flammeus*) O  
 Song sparrow (*Melospiza melodia*) P  
 Spotted towhee (*Pipilo maculatus*) O

Summer tanager (*Piranga rubra*) O  
Turkey vulture (*Cathartes aura*) X  
Verdin (*Auriparus flaviceps*) X  
Violet-green swallow (*Tachycineta thalassina*) O  
Warbling vireo (*Vireo gilvus*) O  
Western kingbird (*Tyrannus verticalis*) P  
Western scrub-jay (*Aphelocoma californica*) O  
Western tanager (*Piranga ludoviciana*) O  
White-crowned sparrow (*Zonotrichia leucophrys*) O  
White-faced ibis (*Plegadis chihi*) O  
Wilson's warbler (*Cardellina pusilla*) O  
Yellow-breasted chat (*Icteria virens*) P  
Yellow-rumped warbler (*Setophaga coronata*) O  
Yellow warbler (*Setophaga petechia*) P

### *Reptiles*

California kingsnake (*Lampropeltis getula californiae*)  
Desert horned lizard (*Phrynosoma platyrhinos*)  
Desert iguana (*Dipsosaurus dorsalis*)  
Desert spiny lizard (*Sceloporus magister*)  
Gopher snake (*Pituophis catenifer*)  
Great Basin collared lizard (*Crotaphytus bicinctores*)  
Great Basin rattlesnake (*Crotalus oreganus lutosus*)  
Great Basin skink (*Eumeces skiltonianus utahensis*)  
Great Basin whiptail (*Cnemidophorus tigris tigris*)  
Long-nosed leopard lizard (*Gambelia wislizenii*)  
Side-blotched lizard (*Uta stansburiana*)  
Western fence lizard (*Sceloporus occidentalis*)  
Western rattlesnake (*Crotalus oreganus*)  
Zebra-tailed lizard (*Callisaurus draconoides*)

### *Amphibians*

Unknown toad (tadpoles)

### *Fish*

No records.

### **Other Invertebrate Species**

No records.

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<sup>1</sup>Included are biological records in similar habitats within approximately 10 miles of the allotments.

<sup>2</sup>Breeding bird criteria codes: O = observed, X = possible breeder, P = probable breeder, and C = confirmed breeder.

<sup>3</sup>A nonnative species.