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In Reply Refer To:
5000 (NVL02000)

Dear Interested Public:

The Ely District BLM, Schell Field Office is proposing a landscape restoration project within the Kern Mountains near Ely, Nevada. The Kern Mountain Landscape Restoration project aims to improve vegetative diversity and understory species abundance and improve wildlife habitat. The majority of the range is currently in a Fire Regime Condition Class (FRCC) 3 which is highly departed from reference conditions due to a lack of disturbance, primarily from wildfire. The primary goal of this project is to reduce the average departure from reference conditions in the range to FRCC 1.

The Kern Mountain Landscape Restoration Project will utilize a variety of treatment methods to reduce tree densities on rangeland sites, minimize the occurrence of noxious and non-native plant species and restore aspen stands within the range. Potential treatment methods are described in the preliminary environmental assessment.

A preliminary environmental assessment discussing the proposed action and any potentially significant impact to the quality of the human environment has been prepared for your review. The document is available at the Ely District web site:
http://www.blm.gov/nv/st/en/fo/ely_field_office.html

Please respond with any comments in writing by May 24, 2010. Comments may be addressed to Mary D'Aversa, Field Manager, Schell Field Office, Bureau of Land Management, HC 33 Box 33500, Ely, NV 89301. Please also respond in writing if you would like to be included in future mailings regarding this project.

For more information please contact the Ely District Forester, Zach Peterson, at 775-289-1871 or zachary.peterson@blm.gov.

Sincerely,

\s\ William Panagopoulos
for

Mary D'Aversa
Field Manager
Schell Field Office

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

Environmental Assessment
DOI-BLM-NV-L020-2010-0005-EA
May 4, 2010

Kerns Mountains Landscape Restoration Project

U.S. Department of the Interior
Bureau of Land Management
Ely District Office
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Table of Contents

1.0 BACKGROUND4

 1.1 Introduction..... 4

 1.2 Purpose and Need for the Proposal..... 5

 1.3 Relationship to Planning..... 10

 1.4 Relationship to Statutes, Regulations, or other Plans..... 11

2.0 DESCRIPTION of PROPOSED ACTION and ALTERNATIVES13

 2.1 Introduction..... 13

 2.2 Proposed Action..... 14

 2.3 Alternative Action..... 21

 2.4 No Action Alternative..... 22

3.0 DESCRIPTION of the AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES and CUMULATIVE IMPACTS22

 3.1 General Description 22

 3.2 Resources/Concerns Analyzed..... 22

 3.3 Vegetation..... 29

 3.4 Soils..... 31

 3.5 Wildlife; Migratory Birds; Special Status Species Animals..... 34

 3.6 Livestock Grazing..... 37

4.0 PROPOSED MITIGATION MEASURES..... 40

5.0 SUGGESTED MONITORING40

6.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED.....42

 6.1 Ely District Internal Review 42

 6.2 Tribal Coordination..... 42

7.0 REFERENCES43

8.0 APPENDICES.....45

 8.1 Weed Risk Assessment..... 45

 8.2 Migratory Bird Species..... 52

1.0 BACKGROUND

1.1 Introduction

The project area analyzed in this environmental assessment (EA) is located along the mid and upper benches of the Kern Mountain Range in the Deep Creek, Snake Valley North, Antelope Valley and Mid Spring Valley watersheds. The project area is located in Townships 20, 21 and 22 North and Ranges 68, 69 and 70 East; Mount Diablo Base and Meridian (MDBM); White Pine County, Nevada (Figure 1). The primary vegetation within the project area consists of sagebrush communities and established stands of singleleaf pinyon pine and Utah juniper. Perennial grasses and forbs occur at levels below site potential on a majority of the project area. The total project area includes approximately 15,725 acres, although only an estimated 70-80 percent of the total acreage within the boundary is targeted for treatment. All of the lands within the project area perimeter are public lands administered by the BLM. Phase 1 of the project is located primarily on the west and south slopes of the Kern range. Phase 1 includes approximately 3,305 acres of chaining treatments, 2,200 acres of prescribed fire and 50 acres of aspen restoration. Implementation of phase 1 would be scheduled to begin spring/summer of 2010. The remainder of the project, including approximately 10,000 acres of tree density reduction treatments to be determined through adaptive management and up to 500 acres of aspen restoration would be completed in subsequent phases depending on funding.

The project proposed in this EA would facilitate the following goals:

- *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, Ten-Year Comprehensive Strategy* was a policy developed in 2001 that placed emphasis on reducing risk to communities and the environment by managing wildland fire, hazardous fuels and ecosystem restoration and rehabilitation on both forests and rangelands. Three of the four goals outlined in this policy include: (1) Improve fire prevention and suppression; (2) Reduce hazardous fuels and (3) Restore fire adapted ecosystems.
- The *Standards and Guidelines for Nevada's Northeastern Great Basin* (page 13) states in part, "Create and maintain a diversity of sagebrush age and cover classes on the landscape through the use of prescribed fire, prescribed natural fire, mechanical, biological and/or chemical means to provide a variety of habitats and productivity conditions" and "Where pinyon pine and/or juniper trees have encroached into sagebrush communities, use best management practices to remove trees and re-establish understory species".
- The *Healthy Forests Restoration Act (HFRA) (2003)* was signed into law on December 3, 2003. It is designed to improve the capacity of the Department of Interior and the Department of Agriculture to implement the National Fire Plan and to conduct hazardous fuels reduction projects to protect communities, watersheds and other at-risk lands from catastrophic wildfire.

On August 22, 2002, President Bush announced the Healthy Forests Initiative for Wildfire Prevention and Stronger Communities. The Healthy Forests Initiative implements core components of the Cohesive Strategy agreed to by Federal, State and local agencies as well as Tribal Governments and stakeholders.

The purpose of the Cohesive Strategy is to ensure a coordinated effort to provide fire protection for communities while improving the health of watersheds and vegetative communities.

The hazardous fuels reduction portion of the strategy states, "Assign the highest priority for hazardous fuels reduction to communities at risk, readily accessible municipal watersheds, threatened and endangered species habitat and other important local features where conditions favor uncharacteristically intense fires (Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy, page 9)." The Kern Mountains Landscape Restoration Project responds to the fuels reduction element of the Cohesive Strategy.

1.2 Purpose and Need for the Proposal

The purpose of the proposal is to return the Kern Mountain landscape to a Fire Regime Condition Class 1. Fire Regime Condition Class (FRCC) is an interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels and disturbance regimes (<http://www.frcc.gov/>). Assessing FRCC can help guide management objectives and set priorities for treatments. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure is described as changes to one or more of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure and mosaic pattern); fuel composition; fire frequency, severity and pattern; and other associated disturbances (e.g. insects and disease mortality, grazing and drought). The three classes are based on low (0-33% departure; FRCC1), moderate (34-66% departure; FRCC2) and high (67-100% departure; FRCC3) departure from central tendency of the natural (historical) regime. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside the range of variability. The FRCC rating is accompanied by a series of indicators of the potential risks that may result from the changes to the associated ecological components when disturbance is applied. Reference descriptions for a typical FRCC 1 community have been developed for most major vegetation types. Reference conditions are compared to actual (on the ground) conditions for purposes of determining current FRCC classes.

The 2002 National Cohesive Strategy defines fire regimes as a generalized description of fire's historic role within an ecosystem. Table 1 outlines each fire regime group:

Table 1 – Fire Regime Groups

FIRE REGIME GROUP	DESCRIPTION
I	0-35 year frequency, low severity
II	0-35 year frequency, stand replacement severity
III	35-100+ year frequency, mixed severity
IV	35-100+ year frequency, stand replacement severity
V	200+ year frequency, stand replacement severity

Frequency is the average number of years between fires. Severity is the effect of fire on the dominate over story vegetation. The primary fuels (sagebrush and pinyon/juniper woodlands) within the Kern Mountains Landscape Restoration project area are in Fire Regime Groups II and III (LANDFIRE Biophysical Setting Models, 2006)

The need for the proposal is to respond to the high departure from natural conditions in the area due to a combination of drought, fire suppression efforts and historic livestock overgrazing. The majority of the project area is rated FRCC 3 (highly departed). Figure 2 shows the FRCC by treatment type. Ten percent of the project area is rated FRCC 1. These areas are typically higher elevation sites slated for aspen restoration only. Approximately 12% of the project area is rated FRCC 2. More than 78% of the project area is characterized by FRCC 3. This indicates that fire regimes have been highly altered from their historical range. Fire frequencies are departed from historical frequencies by multiple return intervals. Risk of losing key ecosystem components is high. Vegetation attributes have been highly altered from their historical range and now include uncharacteristically high densities of trees, and below normal perennial grass and forb composition. While the majority of the project area is in FRCC 3, much of the FRCC 3 area is at the low end of the FRCC 3 (departure scores of 66-75%) (Figure 3). This suggests that these ecosystems are likely to recover and return to a FRCC 1 condition following treatment. The goal is to meet FRCC 1 for each fuel type within the project area.

Current FRCC (Fire Regime Condition Class) data for lower elevations of the Kern Mountains indicates the area has been missing the necessary amount of fire return intervals to sustain ecosystem health. The lack of fire return intervals has produced an overgrowth of shrub species in the area historically dominated by native grasses. This overgrowth further threatens the ecological stability of the Kern Mountains and the ability of firefighting forces to control unwanted high to extreme fire perturbations. The use of fire as a tool to alter fuel loadings and re-establish fire as a more common occurrence is necessary for ecological stability.

The proposal is being considered in order to achieve the following resource management goals:

- Reduce the risk of large, uncontrolled wildfires by reducing fuel loading and continuity within the Antelope Valley, Snake Valley North, Mid Spring Valley and Deep Creek Watersheds and meet FRCC 1.
- Restore the historic disturbance regime within the project area.
- Improve the available habitat for neighboring sage grouse, mule deer and elk populations.
- Improve the health of aspen stands within the project boundary.
- Minimize the occurrence of invasive species within the project boundary.

The following invasive species are documented within the project area: Russian knapweed (*Acroptilon repens*), musk thistle (*Carduus nutans*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), black henbane (*Hyoscyamus niger*), hoary cress (*Lepidium draba*), and cheatgrass (*Bromus tectorum*). Although the native plant communities treated are expected to improve over time, current weed species could spread within these treatments due to the initial impacts of disturbance to the native plants and soils. Therefore part of the purpose of the action is to implement integrated pest management to prevent the introduction and control the spread of invasive and noxious plants within the project area. The intent is to prevent further resource degradation and increase treatment efficacy. The need for the action is to comply with Executive Order 13112, which directs all federal agencies to address invasive species concerns and better coordinate federal weed management efforts. The State of Nevada Revised Statute (NRS) 555.150 also requires that all land managers control species listed on the Nevada Noxious Weed List.

Figure 1. Kern Mountain General Project Area

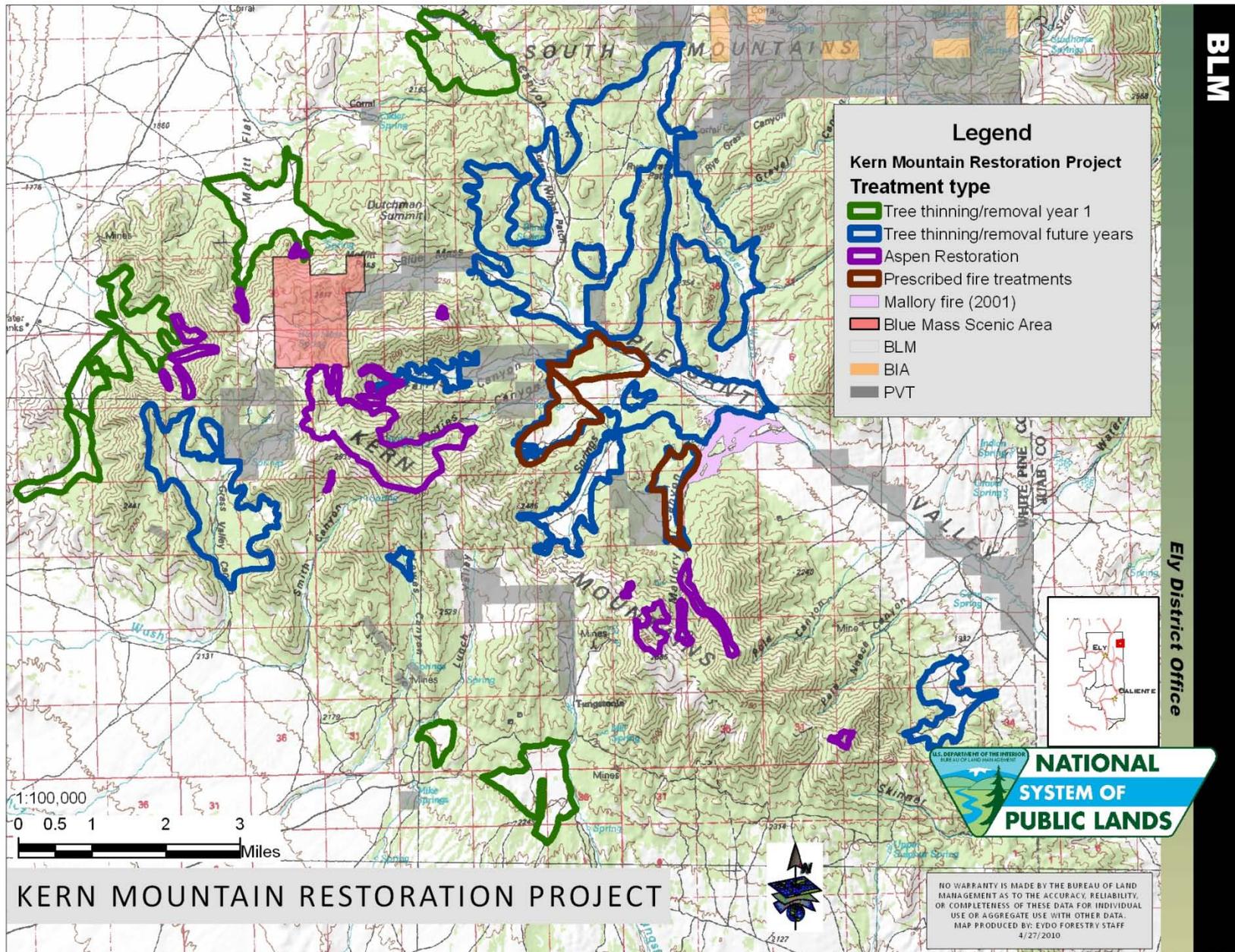


Figure 2. FRCC for the Kern Mountain Restoration Project Treatment Areas

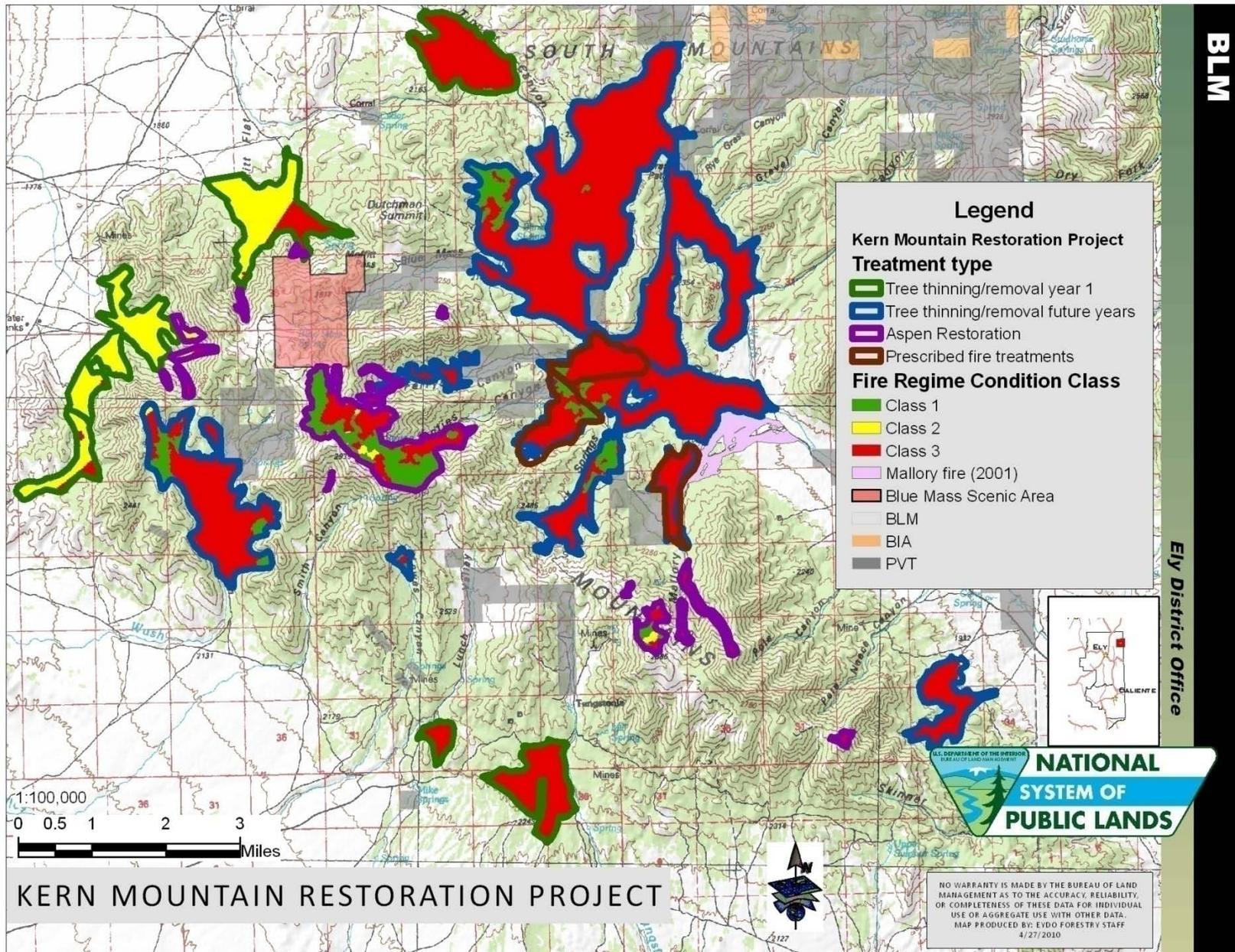
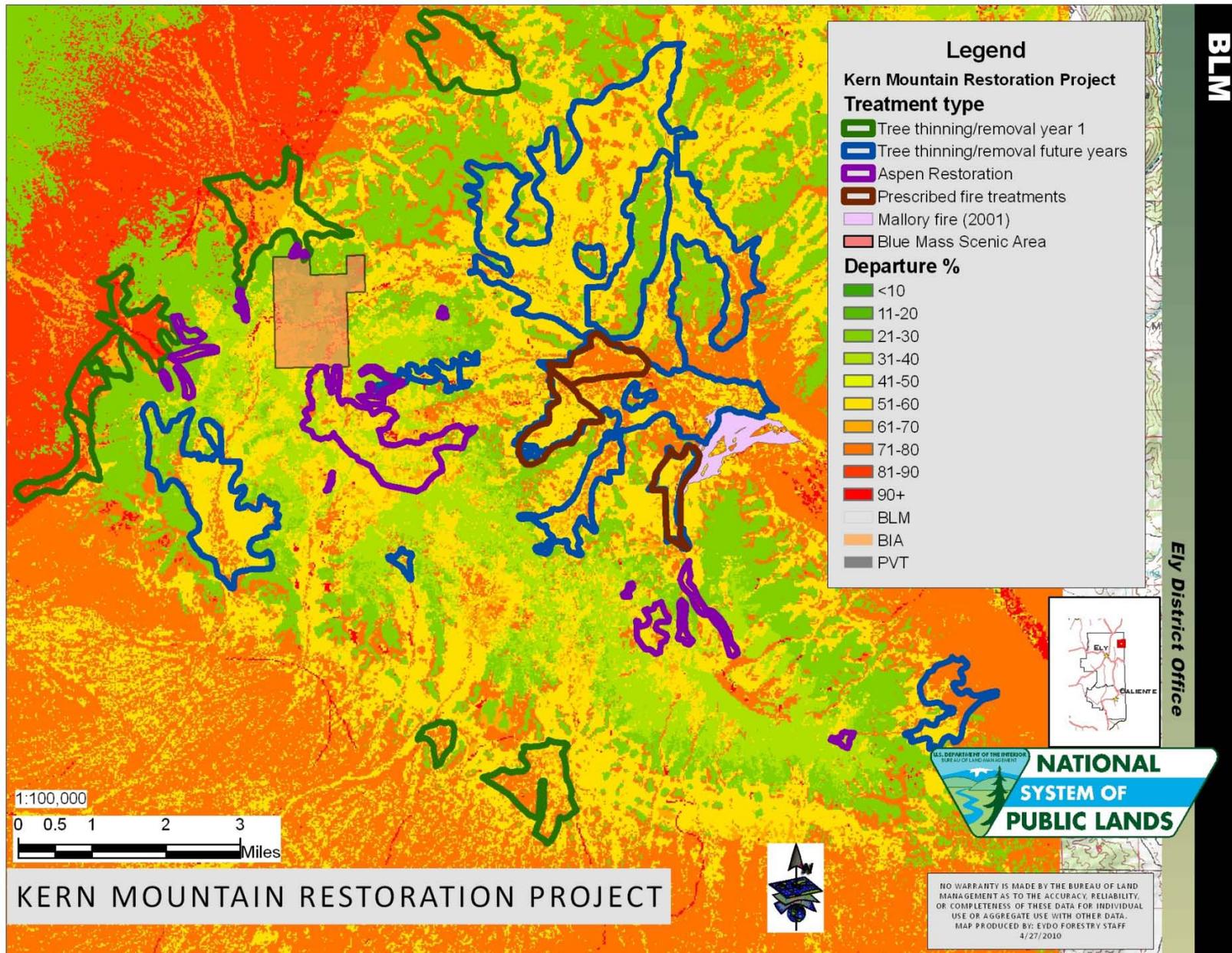


Figure 3. Departure from reference conditions, in percent, of the Kern Mountain Restoration Project Area



1.3 Relationship to Planning

The Proposed Action and Alternative Action are in conformance with the Ely District Record of Decision and Approved Resource Management Plan (August 2008). The Proposed Action and Alternative Action are in conformance with the following specific objectives and decisions:

General Vegetation Management:

- **VEG-1:** Emphasize treatment areas that have the best potential to maintain desired conditions or respond and return to the desired range of conditions and mosaic upon the landscape, using all available current or future tools and techniques.
- **VEG-4:** Design management strategies to achieve plant composition within the desired range of conditions for vegetation communities, and emphasize plant and animal community health at the mid scale (watershed level).

Parameter: Aspen

- **VEG-11:** Integrate treatment priorities that include:
 1. Areas where select species of conifers dominate the tree overstory and where canopy cover exceeds the percentages listed in the desired range of conditions in Table 3 (Overmature Phase).
 2. Areas where understory species are declining and aspen are not regenerating.
 3. Managing aspen communities (using disturbance) to remain in or move toward those phases that are more resilient and resistant to disturbance.
 4. Allowing regeneration to occur where potential allows, and to protect that regeneration through use restrictions or other protection methods.
 5. Selecting and applying protection measures on a site-specific basis during implementation of the RMP.
 6. Managing aspen stands to maintain or improve stand characteristics and promote regeneration.

General Wildlife Habitat Management:

- **WL-1:** Emphasize management of priority habitats for priority species. (See the discussion on Vegetation Resources for the desired range of conditions for the various vegetation communities.)

Special Status Species:

Parameter: Great Basin Sagebrush Habitat

- **SS-38:** Maintain intact and quality sagebrush habitat. Prioritize habitat maintenance actions from the BLM National Sage Grouse Conservation Strategy to: 1) maintain large areas of high quality sagebrush currently occupied by greater sage-grouse; 2) maintain habitats which connect seasonal sagebrush habitats in occupied source habitats; and 3) maintain habitats that connect seasonal sagebrush habitats in occupied isolated habitats.
- **SS-39:** Implement proactive and large scale management actions to restore lost, degraded, or fragmented sagebrush habitats and increase greater sage-grouse populations. Prioritize habitat restoration actions from the BLM National Sage Grouse Conservation Strategy to: 1) reconnect

large patches of high quality seasonal habitats, which greater sage-grouse currently occupy; 2) enlarge sagebrush habitat in areas greater sage-grouse currently occupy; 3) reconnect stronghold/source habitats currently occupied by greater sage-grouse with isolated habitats currently occupied by greater sage-grouse; 4) reconnect currently occupied and isolated habitats; 5) restore potential sagebrush habitats that currently are not occupied by greater sage-grouse. Develop allowable use restrictions in greater sage-grouse habitats undergoing restoration, on a case-by-case basis, as dictated by monitoring.

Management Actions–Fire

- **FM-4:** Incorporate and utilize Fire Regime Condition Class as a major component in fire and fuels management activities. Use Fire Regime Condition Class ratings in conjunction with vegetation objectives (see the discussion on Vegetation Resources) and other resource objectives to determine appropriate response to wildland fires and to help determine where to utilize prescribed fire, wildland fire use, or other non-fire (e.g., mechanical) fuels treatments.
- **FM-5:** In addition to fire, implement mechanical, biological, and chemical treatments along with other tools and techniques to achieve vegetation, fuels, and other resource objectives.

The Proposed Action and Alternative Action are tiered to the analysis and effects disclosed in: 1) the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007); 2) the *Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007)*; and 3) the *Final Environmental Impact Statement Vegetation Treatment on BLM Lands in Thirteen Western States (1991)*

1.4 Relationship to Statutes, Regulations, or other Plans

The proposal is also consistent with other Federal, State and local plans or decisions including, but not limited to, the following:

- Final EIS - Vegetation Treatments on BLM Lands in Thirteen Western States (1991) "Selection Criteria for Treatment Methods" identified in the *Record of Decision for Vegetation Treatments on BLM Lands in Thirteen Western States* (page 3) states in part, "Tree removal will be considered where it is determined that pinyon/juniper stands or other woody species no longer meet the desired plant community due to crowding out of understory vegetation important for wildlife and livestock forage and watershed management." The objectives of the proposed project are in conformance with priorities 1, 2 and 3 identified in the above document (page 4).
- Final Programmatic Environmental Report -- Vegetation Treatments on Bureau of Land Management Lands in 17 Western States (2007) - "General Site Selection and Treatment Priorities" (page 2-10) include:
 - "Treatments to restore or maintain health, diverse, resilient, and productive native plant communities;
- Special status species habitat improvement projects designed to improve or protect special status fish, wildlife, and plant habitat; The White Pine County Public Land Policy Plan (August 2007) identifies the following policies:

- **Policy 2-2:** Protect and preserve the quality of the environment, and economic, cultural, ecological, scenic, historical and archeological values; protect and preserve wildlife habitat values compatible with economic opportunities needed to provide for long term benefits for the people of White Pine County now, and future generations.
 - **Policy 2-4:** Support the Great Basin Restoration Initiative.
 - **Policy 5-3:** Support the management of woodlands/forest by ecological condition for a diversity of vegetation communities. Grass and shrub ecosystems with no or few invasive species are preferable to pinyon/juniper monocultures.
 - **Policy 5-5:** Recognize the importance of maintaining healthy aspen communities and encourages activities that will retain and improve the vigor of these communities.
 - **Policy 9-7:** Support habitat restoration to improve wildlife habitat when compatible with other uses.
- The White Pine County Elk Management Plan (2007 Revision) was developed by a Technical Review Team (TRT) that consisted of representatives from the United States Forest Service (USFS), the Bureau of Land Management (BLM), the National Park Service (NPS), the Natural Resources Conservation Service (NRCS), Nevada Division of Wildlife (NDOW), sportsmen, ranchers, general public, conservationists and the Goshute Indian Tribe. The plan identified vegetation conversion projects by NDOW management units that would improve wildlife habitat by creating a more diverse mixture of grasses, forbs and shrubs. The project area lies within NDOW Management Unit 113. Elk numbers have been achieved in this unit. Possible projects/opportunities listed in the plan for this area include “large potential for prescribed fire or thinning in pinyon-juniper communities.” The health of aspen stands within the unit was cited as a potential limitation to management.
 - The National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347, January 1, 1970, as amended 1975 and 1994)
 - The Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996)
 - White Pine County Conservation, Recreation, and Development Act of 2006 (Public Law 109-432)
 - White Pine County Portion (Lincoln/White Pine Planning Area) Sage Grouse Conservation Plan (2004).
 - State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada Historic Preservation Office (1999).
 - The Standards and Guidelines for Nevada's Northeastern Great Basin (page 13) states in part, "Create and maintain a diversity of sagebrush age and cover classes on the landscape through the use of prescribed fire, prescribed natural fire, mechanical, biological and/or chemical means to provide a variety of habitats and productivity conditions" and "Where pinyon pine and/or juniper trees have encroached into sagebrush

communities, use best management practices to remove trees and re-establish understory species".

- Migratory Bird Treaty Act (1918 as amended) and Executive Order 13186 (1/11/01)

1.5 Scoping and Issues

The Kern Mountain Landscape Restoration project was scoped internally by the Bureau of Land Management (BLM) Schell Field Office interdisciplinary team on November 2, 2009. Similar past projects have included external (public) scoping to identify issues for analysis and alternative actions to meet the purpose and need. Results of external scoping from past, similar projects of this nature included comments to minimize or avoid impacts to special status and sensitive wildlife species. Suggestions or questions often include consideration of the treatment impacts on erosion, non-native invasive and noxious weed species, and livestock grazing after treatments. This project includes a variety of treatments normally suggested by the public to meet the purpose and need. Measures have also been included in the treatment actions to address issues and minimize impacts normally brought forward from the public on similar projects. Many of the treatments analyzed here have been routine treatments successfully completed in the past.

The following issues are analyzed within this EA as a result of internal scoping, and from comments normally received during external scoping on projects of this nature:

- Vegetation
- Soils
- Wildlife, migratory birds and special status animals
- Livestock Grazing

2.0 DESCRIPTION of PROPOSED ACTION and ALTERNATIVES

2.1 Introduction

The previous chapter presented the Purpose and Need of the proposed project, as well as the relevant issues, i.e., those elements that could potentially have a significant impact to the quality of the human environment through the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has developed a proposed action and an alternative action. The proposed action, alternative action, as well as a no action alternative are presented below. The potentially significant environmental effects or consequences of the relevant issues resulting from the implementation of each alternative are then analyzed in Chapter 3.

2.1.1 Adaptive Management

Adaptive management, as defined by the Natural Resource Council whose definition was adopted by the Department of Interior, is a decision making process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management

actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a ‘trial and error’ process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to [achieve] more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders.

Given the potentially longer time scale of this project and the need to be flexible in how treatments are applied in given areas, adaptive management will be used for implementation of the Kern Mountains Landscape Restoration Project. Following Phase 1 implementation and monitoring, recommendations on treatment types will be made based on stakeholders input and how treatments used in Phase 1 met objectives. Treatments available for consideration include those listed in section 2.2, Proposed Action, below.

2.2 Proposed Action

The proposal is to reduce tree densities within the project area to move current vegetative conditions in a path towards reaching a Fire Regime Condition Class 1 in treated areas. Additional proposals of treatments within the project boundaries are to improve the health of aspen stands occurring in the Kern Mountain Range. A variety of treatments would be accomplished through the following potential methods:

- Tree thinning
- Chaining
- Tebuthiuron treatments
- Weed prevention and treatment
- Prescribed fire in Mallory Canyon
- Aspen restoration
- Seeding

Each proposed treatment is further described below including areas in which the treatment would likely be used, to be determined through adaptive management.

Tree Thinning

The thinning treatments would be conducted by manual methods (chainsaw) and/or mechanical methods such as a bull hog, feller-buncher or similar piece of equipment that masticates trees. Slash/biomass removal would depend on the type of method used. Slash/biomass created from manual methods or equipment which provides whole tree cutting methods would be consolidated into piles and disposed of later through prescribed burning or hauled off site for use as biomass. Slash/biomass created from mastication equipment would be left on site to degrade by natural means. Biomass, including fuelwood, would be made available for public use through sales to the greatest extent possible. Thinning treatments would most likely occur in transition zones between rangelands and woodlands or in rangeland sites with low tree densities.

Chaining

Chaining would be accomplished using the Ely Anchor Chain (Navy ship anchor chain with 18 inch railroad iron welded perpendicular to the chain link). Chaining treatments would consist of two-way chaining (chaining the trees twice, once from each direction). Chaining could occur anytime but would generally occur in the late fall or winter months. Chaining would generally be used in rangeland sites where pinyon and juniper tree densities have greatly increased beyond site potential as described in the FRCC biophysical settings. These sites are characterized by declining shrub, grass and forb understory as tree density increases. Islands of untreated trees would be left to provide escape and thermal cover for wildlife. Chaining would be conducted in a mosaic pattern to the greatest extent possible to blend contrast with the surrounding environment and replicate natural disturbance. Edges would be blended using mechanical or manual tree falling methods or would utilize natural breaks in vegetation to further reduce sharp visual contrast of the area. Chaining would be the preferred treatment method for those areas of the project identified for treatment in Phase 1 (see Figure 1).

Prescribed Fire

Prescribed Fire operations would target 1,500 acres of public land in the Deep Creek watershed of the Kern Mountain Range (see Figure 1). General locations include areas to the south and west of the Pleasant Valley/Tippetts Road including areas located north and west of the 2001 Mallory Fire and south of the Blue Mass Scenic Area. Ignition would be strategically timed to best reduce fuel hazards to acceptable levels and benefit ecological system health. The goal is to shift fire hazard trends from the more hazardous Condition Classes of 2 and 3 to a more ecologically balanced Condition Class 1. Target locations have been chosen in sites with existing native perennial understory species. Target areas chosen have similar characteristics of the 2001 Mallory Fire where positive natural re-establishment of native grasses and favorable establishment of seeded grasses occurred. Non-native invasive plant species establishment on the Mallory Fire site was minimal, suggesting that adjacent areas would be good locations for prescribed fire.

A combination of ground and aerial firing (ignition) resources would be used to implement the prescribed burn. Ground firing resources would include drip torches and terra torch where applicable. Clean up and control would also be conducted with the use of drip torches and/or terra torch. Broad scope application would be through the use of a Plastic Sphere Dispenser (PSD) machine. Aerial fire application through the use of PSD would improve efficiency and effectiveness. Safety, fuels properties, current and expected weather, topography (ingress/egress), and holding capabilities would determine the proper fire application. Drainage bottoms would be avoided and mosaic patterns would be preferentially preferred to block patterns. An approved burn plan would be prepared prior to any prescribed fire. Control lines for prescribed fire would utilize natural barriers as much possible. In the event natural barriers cannot be utilized, tree and shrubs would be cut and removed along prescribed fire boundaries. Vegetation removed along the control line would be piled inside the prescribed fire boundary and burned during firing operations. In some cases control lines would include scraping and/or digging to expose mineral soil. Prescribed burning would be conducted during times of year that would prevent hydrophobic soil formation to the greatest extent possible.

Research Activities

Various research institutes involved in gathering data to determine soil burn severity following natural and prescribed fires have expressed interest in gathering scientific data prior to, during and following the prescribed burn. In general, research operations that have a potential to cause ground disturbance are listed below. Some or all of the following techniques may be used prior to, during and left in place for a period of no more than 1 year following the burn:

- Rebar stakes marking plot locations at a rate of approximately 1 per every 20 acres (randomly located). The rebar would protrude above ground no higher than 6 inches, extend beneath ground approximately 12 inches and be capped with a rebar safety cap to reduce the risk of injury to humans and/or wildlife.
- A Distributed Temperature Sensing (DTS) transect used to take real time temperature data at 1 meter intervals. The transect would consist of a 300 meter fiber optic cable crossing the burn area boundary. The transect location would be based on research needs but would not intersect cultural resources deemed eligible for the National Register of Historic Places. The majority of the transect would be located above ground, however, in two 10 m sections the cable would be buried to a depth of 10 cm.
- Up to 10 soil temperature probes located along the DTS transect. The probes would provide for a secondary method of determining temperature by taking temperature at 2 minute intervals for the duration of the burn. The probes would be buried to a depth of 10 cm. The probes would be marked with rebar stakes protruding above ground no higher than 6 inches and below ground no more than 12 inches. The stakes would be capped with a rebar safety cap.
- Six additional soil temperature probes located within the burn unit. Areas for the probes would be chosen based on fuel loading to place the probes in areas with the potential for the highest temperatures. The probes would be buried to a depth of 10 cm. A rebar stake would be used to mark the location following the protocols listed above.
- Coordinates for all rebar stakes would be recorded using a Global Positioning Satellite (GPS) unit so each could be located for removal after research activities have concluded.

Probes would not be installed in areas where cultural resources eligible for the National Register of Historic Places exist.

Weed Prevention and Treatment

The BLM proposes to manage noxious and invasive weeds within the project area. Management of weeds will include best management practices to prevent spread and early detection; and treatments to control current populations and any new weed populations discovered during the life of the project. Treatments could include biological controls, targeted grazing, mechanical controls and herbicide. For biological controls only the release of USDA - Animal and Plant Health Inspection Service approved insects or pathogens would be used and would be accompanied by a BLM Biological Control Agent Release Proposal. For targeted grazing the type of animal selected would be matched appropriately with the target species and to adequately meet the desired prescription of the area. The animals would be closely observed to control the intensity and duration of the grazing to avoid grazing impacts on desirable species. No sheep or goat grazing treatments would be conducted in occupied bighorn sheep habitat. No occupied bighorn sheep habitat currently exists within the project area. Mechanical treatments may include

hand pulling, mowing, cutting using hand or chainsaw, and prescribed burns. Herbicide treatments would require a Pesticide Use Report submitted to the BLM Nevada State Office prior to implementation. Herbicide treatments for weeds would include the potential use of all BLM approved herbicides and surfactants, both in the BLM Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement and Record of Decision (BLM 2007) and any herbicides approved in the future using the protocol for identifying, evaluating, and using new herbicides as described in that EIS. Depending on chemical, size of the area and acceptable amount of drift; applications of treatments could include backpack application, pack animal tank application, ATV/UTV tank application, truck tank application, and aerial application.

Tebuthiuron Herbicide Treatments

Chemical treatments using a pellet form of the herbicide Tebuthiuron (trade name Spike 20P) would occur in areas where pinyon and juniper trees have become established on sagebrush ecological sites. This treatments would be generally used in areas where chaining or thinning is unreasonable due to terrain or site specific conditions.

Tebuthiuron is an herbicide that primarily affects woody species (e.g., pinyon, juniper, sagebrush and other shrubs). The herbicide would be applied using aerial (helicopter or airplane) resources. The pilot would be required to have a pesticide applicator's license and the aircraft would need to be equipped to precisely dispense the herbicide. A Pesticide Use Proposal (PUP) would be completed and authorized prior to completing the treatment. Standards and guidelines for storage facilities, posting and handling, accountability and transportation as listed in BLM Handbook 9011 (Pesticide Storage, Transportation, Spills and Disposal) Section II would be followed. Items listed in the Material Safety Data Sheet provided for Spike 20P would also be adhered to.

Application rates and procedures would follow directions as listed on the herbicide specimen label for sagebrush, pinyon and juniper. Target areas for herbicide treatment would be those areas where pinyon and juniper have established on sagebrush ecological sites and sites where older, decadent, even-aged stands of sagebrush exist. Any areas containing stands of antelope bitterbrush would be avoided to the extent possible.

The preferred time of application would be during the fall prior to the first snow fall, however, the herbicide could be applied during any time as long as the ground is not frozen, water saturated or snow covered. The project would be conducted during calm weather conditions to avoid herbicide (pellet) drift.

The project design would include a "no application" buffer zone of at least 100 feet from drainage bottoms and 300 feet around springs and perennial water sources. Standard Operating Procedures and Mitigation Measures Identified in the Record of Decision for the *Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007)* would be incorporated. The above incorporated project design features provide prescriptions for herbicide treatment along with appropriate mitigating measures.

Herbicide effectiveness of Tebuthiuron depends on the soil depth and texture and the amount of clay and organic matter content of the soil. Soil samples would be collected and tested at various locations in major vegetation types within the treatment area to determine soil properties and appropriate herbicide application rates in order to meet the objectives of the project.

Aspen Restoration

Aspen Restoration would take place through a combination of hand-felling of conifers and fencing of aspen stands to reduce herbivory of the aspen by ungulates. All aspen stands within the Kern Mountain would be targeted for treatment, which is estimated at approximately 1,300 acres. The largest of these stands are shown in Figure 1. Targeted species of conifers within the aspen stand and within 75 feet of the edge (measured from the last standing, live aspen stem in the stand) of the aspen stand would be removed using a chainsaw or other mechanical means. All targeted conifers would be removed within 50 feet of the edge of the aspen stand. The last 25 feet within the 75 foot perimeter would be reserved for variable density thinning to blend the edges of the stand with surrounding landscape to reduce visual impacts. Target species to be removed include the following:

- singleleaf pinyon pine (*Pinus monophylla*)
- Utah juniper (*Juniperus osteosperma*)
- Rocky Mountain juniper (*Juniperus scopulorum*)
- white fir (*Abies concolor*)
- Engelmann spruce (*Picea engelmannii*)
- limber pine (*Pinus flexilis*)

Any material suitable for use as fuelwood may be set aside for that purpose. Limbs, branches and other slash would be used as a barrier fence, piled for burning, mechanically mulched or made available as biomass for public use (sale). Piles for burning would be located in previously disturbed areas to the greatest extent possible.

Aspen stands with low regeneration (fewer than 300 healthy stems per acre under 6 ft. in height) may need to be fenced in order to prevent herbivory on the stand. In general, fencing of aspen stands would be used in open stands where few conifers dominate the overstory (possibly after other treatment) and on gentler slopes. Fencing would be constructed of either 8 ft. steel pipe rail fencing, electrical fencing or a slash barrier fencing designed to keep elk, deer, cattle, domestic sheep and wild horses out of the treatment area. Fencing would be placed in a location to minimize visual impacts to the fullest extent practicable.

Steel pipe rail fencing consists of 4 rails, is self-supporting, non-reflective and requires no ground disturbance during installation. The fence would be left in place until regeneration objectives are met. At that time the fence may be removed from the stand and available for use elsewhere.

Electrical fencing may be used as a cost-effective fencing alternative that meets the objectives. Electric fencing would typically be 3 or 4 strands on a fiberglass or metal pole to a height of 5 or 6 feet. Corner posts will be of wood. The fencing would be solar powered with a battery box to

store electrical charge. The box containing batteries would be camouflaged to the surroundings to the largest degree possible. Electrical fencing would be used for 5 to 10 years, until objectives are met and then made available to reuse in other locations.

Slash treatment would be accomplished through a variety of methods. Mechanical mulching, using the slash as a barrier fence to reduce herbivory and selling the slash as biomass removal are the preferred methods. Piling and burning slash piles is also an option, but would only be used after the previously mentioned options have been ruled out. Burning of piles would take place when there is low chance for fire spread and when soil moisture levels are sufficiently high to avoid causing hydrophobicity, generally October through April. A burn plan would be written and approved prior to any prescribed burning.

Seeding

Seeding would occur in areas where the interdisciplinary team determines that existing understory vegetation is not sufficient (generally in areas with less than 10% relative cover of perennial grass and forb species). Seeding would be conducted on the treated sites during the fall or early winter months, preferably prior to snow fall. Seeded species would include perennial species which are able to successfully compete with invasive annuals (e.g., cheatgrass) and are adapted to site characteristics. Native species would be preferred, but non-native species may be used depending on availability and funding. Seeding would occur through aerial application on the thinning and chaining treatments and broadcasted by tractor or ATVs on the chemical treatment area. Bitterbrush (*Purshia tridentata*) seed if used in the chaining area would be applied using dribblers attached to the dozer.

General Measures

All treatment areas that create surface disturbance would be inventoried for cultural resources to identify eligible (Historic Properties) and sensitive sites prior to implementing treatments. Identified cultural resources would be recorded and evaluated to determine eligibility for the National Register of Historic Places. Eligible cultural resources would be avoided or impacts mitigated as necessary before any surface disturbing treatments (i.e., mechanical thinning, chaining) are initiated. A Cultural Needs Assessment would be completed for each treatment area prior to treatment. All measures outlined in the Cultural Needs Assessment would be implemented and followed prior to any ground disturbing activity.

A survey for mining claim markers in documented active claim sites would be conducted prior to implementing treatments. All active mining claim marker locations and tag information would be recorded. Active mining claims which are presently staked would be avoided to the extent practical. Active mining claim markers that are destroyed by thinning or chaining operations would be re-staked using a legal mining claim marker. The re-staking of mining claim markers would occur in coordination with the existing mining claimants to assure accurate, legal staking procedures that would minimize damage to claims.

Stipulations identified in the Weed Risk Assessment (Appendix 8.1) would be implemented as part of the proposed action for phase 1 of the project. Subsequent treatments or changes in

treatment methods will require an additional weed risk assessment and those stipulations will also be implemented.

If any mining sites or dumps are discovered within the project area, thinning and chaining operations would avoid these sites in order to minimize risk from hazardous materials. Sites would also be reported to the Ely District Hazardous Materials Coordinator.

All utility lines and other rights-of-way (ROW) structures would be avoided during thinning and chaining operations. Above ground structures associated with buried utility lines would also be avoided in association with the thinning and chaining activities. Any potential ROW holders in the immediate vicinity of the treatments would be notified prior to conducting any thinning and chaining activities.

In general, treatments other than prescribed fire would be completed in the summer, fall and winter, outside of migratory bird and raptor nesting season (generally April 1 to July 31).

Active goshawk nests will be avoided during treatment.

No new roads would be constructed or created during project implementation. Off-road travel with dozers and other heavy equipment would occur during chaining and thinning activities. Loading and unloading any equipment would occur on existing roads to minimize off-road disturbances and impacts. If necessary, signs may be posted along roads within or adjacent to the treatment areas in regards to travel restrictions in order to assist in mitigating impacts from future cross country travel.

Livestock grazing would not occur within the treatment areas during thinning, prescribed fire or chaining treatments. Following the mechanical and prescribed fire treatments and seeding, livestock would not be allowed to graze within the treatment areas for two complete growing seasons or until the following vegetation objectives have been achieved:

- The establishment of at least 6 desirable, perennial plants per 9.6 square foot hoop or ten percent perennial vegetative cover.

In aspen stands, livestock grazing would not be scheduled following treatment for two complete growing seasons or until the following vegetation objectives have been achieved:

- Regeneration of 350 aspen shrub phase stems per acre and 175 saplings per acre greater than 1.5 inches diameter at breast height (DBH)

Monitoring

Progress towards meeting vegetation objectives would be measured from selected monitoring sites using random density 9.6 square foot plots. Monitoring sites would be established within one year following treatment completion and measured annually. The livestock grazing closure period may be extended pending the rate of progress towards meeting treatment objectives. No new fencing is being proposed in order to prevent livestock from entering the treated areas, except at small scales around treated quaking aspen stands. The livestock grazing permittee would be required to keep livestock out of the treatment area by employing other means of livestock control (e.g., herding or removing livestock from the allotments or use area). Livestock grazing could resume as normally scheduled after the closure period, or when vegetation cover objectives have been met. An interdisciplinary team would conduct a review of resource monitoring data and objectives to determine if and when livestock grazing should be allowed to occur within the project area. If environmental factors prevent attainment of resource management objectives following the mandatory rest period (two years), an interdisciplinary team would review resource monitoring data and determine an appropriate grazing regime with the permittee. Any terms and conditions specific to livestock grazing within the project area would also be discussed and included in any annual grazing authorization.

The project area would be inspected prior to the mechanical treatments to solidify those areas targeted for each specific treatment in order to achieve the desired resource management objectives.

The treatment areas would be monitored following project implementation to determine success towards meeting resource management objectives. All monitoring techniques would follow BLM approved methods. Vegetative establishment would be monitored to determine if the project is promoting soil protection, providing forage and protective cover and improving the overall ecological and watershed conditions. All vegetative trend monitoring site locations would be marked and recorded. Common methods which may be used include, but are not limited to: line, line and point, belt transects with a macroplot for density and photographs. The treatment areas would be inventoried for weeds and monitored to ensure noxious weeds and non native invasive species infestations are controlled. Noxious weed infestations would be reported to the Ely District Office Weed Coordinator in order to be evaluated and determine treatment needed.

2.3 Alternative Action

The Alternative Action is to treat the same locations shown in Figure 1, without chaining or applying Tebuthiuron. Mechanical tree removal would be used in place of chaining and Tebuthiuron treatments. Locations, other treatment techniques and all other design features of the proposed action would be the same. Mechanical tree removal would be the primary treatment for Phase 1 of the project and adaptive management techniques would be used to determine treatment types for subsequent phases of the project. Costs of treatments would be expected to rise as a result of removing chaining from the list of potential treatment options.

2.4 No Action Alternative

The No Action Alternative is the current management situation. Under the No Action Alternative, there would be no treatments implemented within the proposed project areas.

3.0 DESCRIPTION of the AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES and CUMULATIVE IMPACTS

3.1 General Description

The proposed project area occurs within the Kern Mountain Range in the Deep Creek, Snake Valley North, Antelope Valley and Mid Spring Valley watersheds. The project area is located in Townships 20, 21 and 22 North and Ranges 68, 69 and 70 East; Mount Diablo Base and Meridian (MDBM); White Pine County, Nevada. The area is located primarily along the mid and upper benches with some locations, especially areas targeted for aspen restoration, in the higher elevations of the Kern Range. Elevations range from approximately 6,000 to 9,000 feet and slopes range from an estimated 2 to 35 percent. Annual precipitation levels average from approximately 8 to 22 inches. The primary vegetation within the project area consists of pinyon and juniper, aspen and sagebrush communities.

The affected environment is described below followed by the environmental consequences for each resource.

3.2 Resources/Concerns Analyzed

Potential impacts to the following resources/concerns were evaluated in accordance with criteria listed in the H-1790-1 NEPA Handbook (2008) page 41, to determine if detailed analysis was required. 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 District BLM in particular.

Resource/Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Air Quality	N	There would be a temporary increase in particulate matter (dust and/or smoke) resulting from the proposed action. The affected area is not within an area of non-attainment or areas where total suspended particulates or other criteria pollutants exceed Nevada air quality standards. Further analysis is not necessary.
Areas of Critical Environmental Concern (ACEC)	N	The Blue Mass Scenic Area ACEC is located in close proximity to the project location. All treatments associated with this action would occur outside of the ACEC.

Resource/Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Cultural Resources	N	Cultural resources would be avoided or mitigated prior to ground disturbing activities.
Forest Health	N	Forest Health would increase due to reduced densities of trees and healthier aspen ecosystems. The impact to forest health is consistent with the need for the action.
Migratory Birds	Y	Proposed action treatments would generally occur outside of migratory bird nesting season (generally April 15-July 15). Prescribed fire operations may occur during migratory bird nesting season. Potential impacts to individuals are possible including egg and nest destruction, while impacts to migratory bird populations are negligible. Treatment methods other than prescribed fire would be surveyed by a qualified wildlife biologist prior to any ground disturbing activity during migratory bird nesting season. Long term impacts include reduce tree cover and improved diversity of understory vegetation. Aspen restoration would provide a long-term benefit to various migratory birds that utilize aspen stands for nesting and foraging.
Rangeland Standards and Guidelines	N	The proposed action would improve ecological conditions on the ground and thus be a benefit to the rangeland standards and guidelines that is consistent with the need for action. No further analysis needed.
Native American Religious and other Concerns	N	There are no Native American traditional religious sites or cultural sites of importance within the proposed project area that would be affected as a result of this project. There are no 'Indian Trust Assets' identified within the Ely District Office
Wastes, Hazardous or Solid	N	No known hazardous or solid wastes exist within the project location. Any spills or discoveries of hazardous or solid wastes would be reported immediately to the approving official.
Water Quality, Drinking/Ground	N	No affects to water quality are expected. Tebuthiuron treatments will not be applied within 100 feet of drainage bottoms or 300 feet of springs or perennial streams. Riparian areas will also be buffered during chaining and prescribed fire operations reducing the potential for sedimentation into any water sources. These design features of the proposed action reduce any potential impacts to a negligible level.
Environmental Justice	N	No environmental justice issues are present at or near the project.
Floodplains	N	No floodplains have been identified by FEMA within the project area.
Farmlands, Prime and Unique	N	No prime or unique farmlands exist within project boundaries.

Resource/Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Threatened and Endangered Species	N	Not present.
Wetlands/Riparian Zones	N	Riparian areas would be buffered during treatments. Tebuthiuron treatments would not be applied within 100 feet of a drainage bottom or 300 feet of a spring or riparian area. Mechanical treatments and hand felling operations may occur adjacent to riparian areas with little to no impact. Because of the no application buffer in relation to water resources, impacts would be negligible. No further analysis required.
Non-native Invasive and Noxious Species	N	Within the project area are several noxious thistles, Russian knapweed, black henbane and hoary cress. All of these plants spread easily into disturbance areas. Proposed action: Treatment of thistles within the project area will minimize spread. Also since there are very few occurrences of black henbane and Russian knapweed currently documented, early detection and rapid response to control these two species will benefit the project. The design features of the proposed action including preventive measures during implementation; treating areas where weeds spread; and improving native vegetation, all of which will decrease impacts to weeds. Due to processes outlined in the design features no cumulative effects are anticipated. No additional analysis is needed. The alternative action would have the primarily the same impacts. The no action alternative would not include treatment of existing infestations and would not improve native plant communities. If a wildfire were to occur weeds would be more probable and outcompete native vegetation.
Wilderness/WSA	N	No wilderness areas or Wilderness Study Areas are present within the project boundary. No analysis necessary.
Human Health and Safety	N	Safety and health plans along with risk management would be prepared to mitigate any hazards to human health and safety. No analysis necessary.
Wild and Scenic Rivers	N	Not present.

Resource/Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Special Status Animal Species (other than those listed or proposed by the FWS as Threatened or Endangered)	Y	<p>The project area encompasses nesting, early brood-rearing, late summer, and winter sage grouse habitat. One active sage grouse lek is located approximately 1.8 miles away from a phase 1 project location. Restoring sagebrush habitat would result in diverse forage and cover for the species.</p> <p>Northern Goshawks are known to nest in and around quaking aspen stands. Design features of the proposed action include not implementing treatments around active nest sites and ensuring no breeding goshawks or active goshawk nests are present prior to treatment. Restoring the health of aspen stands would result in a long-term benefit to the species.</p> <p>Pygmy rabbits have been documented within the general area, however they are not likely to occur within the project area due to lack of suitable habitat.</p>
Special Status Plant Species (other than those listed or proposed by the FWS as Threatened or Endangered)	N	No known populations of special status plants occur within the project boundary.
Fish and Wildlife	Y	The proposed project location is in year-round elk habitat and year-round mule deer habitat. Short-term displacement of animals may occur. In the long term forage diversity and availability will increase. Treatments would be timed to minimize disturbance to animals during fawning and calving seasons.
Wild Horses	N	Project location includes areas within the Moriah Herd Area. This area is no longer being managed for wild horses (Ely District Approved Resource Management Plan 2008).
Soils/Watershed	Y	Soil disturbance is possible as a result of the proposed action through chaining or other off road vehicular travel. Prescribed fire has the potential to increase soil hydrophobicity.
Livestock Grazing	Y	Treatment areas would be closed to grazing until objectives are met. Improved range, greater plant diversity and higher quantities of grasses and forbs as a result of treatments would be realized in the long term. The project occurs within the Mallory Springs, Mill Springs, Pleasant Valley, Tippet and Tippet Pass allotments.

Resource/Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Water Resources (Water Rights)	N	Design features including buffering riparian areas during treatments will reduce potential impacts to water resources. No water rights will be affected. No adverse effects to water resources or water rights are expected.
Mineral Resources	N	There would be no modifications to mineral resources through the proposed action.
Vegetative Resources	Y	Vegetative communities would be altered as a result of the action. Short term disturbances would lead to a long term increase of ecologically appropriate vegetation types and densities.
Visual Resources	N	The proposed action occurs within Visual Resource Management (VRM) classes III and IV. Predominant natural features of the characteristic landscape are mosaic burned and disturbed patches within the landscape resulting from a historic fire regime of generally 35 to 100 years. The proposed action would repeat the basic elements of form, line, color and texture and therefore conform with class III and IV VRM objectives and the Ely District Resource Management Plan.
Recreation	N	Impacts to recreation would be negligible directly, indirectly and cumulatively. Short term impacts could include visual and noise disturbance near dispersed recreation sites for a period of less than one month. In the long term recreationists would see healthier rangelands and aspen stands possibly leading to increased recreational opportunities.

3.2.1 Cumulative Effects Introduction

The cumulative effects section analyzes the potential cumulative impacts from past, present, and reasonably foreseeable future actions combined with the aspen stand restoration within a defined Cumulative Effects Study Area (CESA). As defined by the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, Cumulative Effects (40 CFR 1508.7) are defined as, “The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

The guidance provided in The National BLM NEPA Handbook H-1790-1 (2008), 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 (p.57).” A comprehensive cumulative

effects 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).

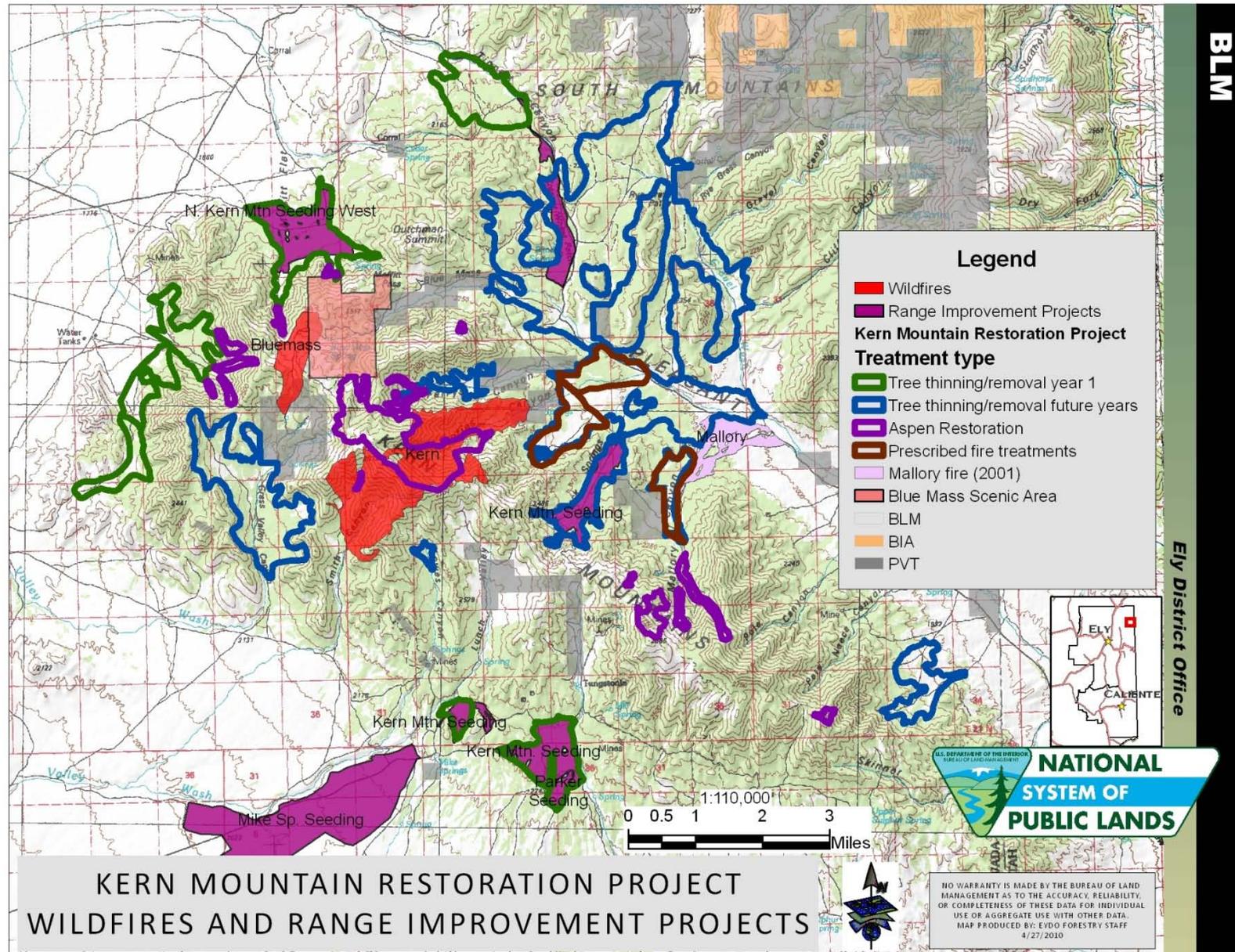
The CESA for the cumulative effects analysis on vegetation, soils, wildlife and livestock grazing is the Kern Mountain Range.

Past actions in the CESA include grazing, mining, recreation, hunting, wild horse gathers, fuels treatments (generally chainings), range improvement projects and wildfire. Table 2 shows range improvement projects, fuels treatments and wildfires by size, type of disturbance and year. Figure 4 shows the location of these treatments and wildfires. Present actions include other related fuels treatments, wildfire management, mining, recreation, grazing and hunting. Wild horses continue to utilize the area. Reasonably foreseeable future actions include fuels treatments, aspen restoration, hunting, recreation, grazing, gathers of wild horses and wildfire management.

Table 2. Wildfires and past range improvement projects by size and year within CESA

Name	Type	Size (acres)	Year
N. Kern Mountain Seeding West	Chaining Seeding	543	1970
N. Kern Mountain Seeding East	Chaining Seeding	276	1970
Kern Mountain Seeding	Chaining Seeding	840	1969
Mike Spring Seeding	Chaining Seeding	1905	1953
Parker Seeding	Chaining Seeding	70	1970
Blue Mass	Wildfire	340	1993
Kern	Wildfire	1796	1994
Mallory	Wildfire	389	2001

Figure 4. Wildfires and past range improvement projects within the Kern Mountains



3.3 Vegetation

Affected Environment

The primary vegetation within the project area consists of pinyon and juniper and sagebrush communities. Perennial grasses and forbs occur at levels below ecological site potential.

Native, perennial, cool-season¹ grasses within the project area include species such as needle and thread (*Hesperostipa comata*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Indian ricegrass (*Achnatherum hymenoides*), Thurber's needlegrass (*Achnatherum thurberianum*) and muttongrass (*Poa fendleriana*). Non-native, perennial cool-season grasses include species such as crested wheatgrass (*Agropyron cristatum*), an excellent drought-tolerant and fire resistant grass which is commonly used for reclamation and spring forage production in arid sections of the western United States (Ogle, 2003). Many of the existing perennial, cool-season grasses exhibit low vigor and reduced seed and vegetative production, especially in the lower elevation benches. Grass and forb species have relatively good vigor in some of the higher elevation benches on the north end of the Kern Mountains. Warm-season² grasses are also present within the project area including galleta (*Pleuraphis jamesii*). Undesirable, non-native, annuals such as cheatgrass (*Bromus tectorum*) occur within the project area. Native shrubs include Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), black sagebrush (*Artemisia nova*), curlleaf mountain-mahogany (*Cercocarpus ledifolius*), Stansbury's cliffrose (*Purshia stansburiana*), fourwing saltbush (*Atriplex canescens*), and winterfat (*Krascheninnikovia lanata*). Some of the sagebrush communities are comprised of older, even-aged, decadent plants which have low vigor and poor nutritional value for browsers. The primary tree species are singleleaf pinyon pine and Utah juniper.

Pinyon and juniper is becoming established on sagebrush habitats within the proposed treatment area which are comprised of native shrubs and grasses. The expansion of pinyon and juniper woodlands and drought-related impacts have reduced the overall health, vigor, recruitment and production of a variety of grass and shrub species and disrupted the desired plant succession³.

Impacts

Under the Proposed Action, vegetative conditions are expected to improve following implementation of the proposed vegetation treatments. Reducing the establishment of pinyon and juniper would assist in improving the ecological condition of sagebrush and aspen sites within the project area. It is expected that the plant species diversity and the plant species

¹ cool-season plant A plant that makes most or all of its growth during the winter and early spring when ambient air temperatures are cooler [e.g. Indian ricegrass (*Achnatherum hymenoides*), crested wheatgrass (*Agropyron cristatum*), needle and thread (*Hesperostipa comata*), bottlebrush squirreltail (*Elymus elymoides*), globemallow (*Sphaeralcea*)] (American Society for Range Management, 1964).

² warm-season plant A plant that makes most or all of its growth during the spring and summer [e.g. galleta (*Pleuraphis jamesii*), blue grama (*Bouteloua gracilis*), bush muhly (*Muhlenbergia porteri*)] (American Society for Range Management, 1964).

³ succession change in the vegetative composition of an ecosystem due to plant response from human-induced impacts and natural changes in the environment

composition would be in better balance with the endemic ⁴ native wildlife needs when a FRCC 1 is obtained. The proposed treatments would help the project area meet FRCC 1 by reducing fuel loading and continuity. Residual woody vegetation which would consist of slash/biomass created from mastication equipment, scattered trees from the chaining treatment or burnt trees as a result of prescribed fire would provide protection to regenerating grasses and shrubs which could be grazed by wildlife. The scattered trees from chaining would also continue to provide protective cover for wildlife species. The decomposition of woody plant material would also improve soil nutrient content which would enhance the recruitment, establishment and long-term viability of the grass and shrub community, as well as provide protection to the soil resource. The Proposed Action is also expected to assist the watersheds in conforming to the Standards and Guidelines for Nevada's Northeastern Great Basin and the Fundamentals of Rangeland Health (Title 43 CFR 4180) by improving soil protection, vegetative diversity, habitat quality and other watershed values. Rangeland Health Standard 1 (Upland Sites) states the following:

"Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.

As indicated by:

Indicators are canopy and ground cover, including: litter, live vegetation and rock, appropriate to the potential for the site."

Under the Action Alternative, the impacts would be similar to those under the proposed action as treatment methods would have a similar effect on vegetation as those in the proposed action. Reducing the establishment of pinyon and juniper would assist in improving the ecological condition of sagebrush and aspen sites within the project area. It is expected that the plant species diversity and the plant species composition would be in better balance with the endemic native wildlife needs when a FRCC 1 is obtained. The proposed treatments would help the project area meet FRCC 1 by reducing fuel loading and continuity. Residual woody vegetation which would consist of slash/biomass created from mastication equipment or burnt trees as a result of prescribed fire would provide protection to regenerating grasses and shrubs which could be grazed by wildlife.

Under the No Action Alternative, vegetative conditions are expected to remain the same for the short-term and decline in condition over the long-term. The health, vigor, recruitment and production of perennial grasses and native shrubs would decline in the long-term due to a combination of factors including grazing and browsing by livestock and wildlife; competition for nutrients, sunlight and water with older, decadent shrubs and the establishment of pinyon and juniper. Future drought related factors would also contribute to the decline in condition of upland vegetative communities. The establishment of pinyon and juniper onto sagebrush ecological sites would continue and the older, decadent even-aged shrub communities would further decline in health and vigor affecting the recruitment and establishment of new grasses, forbs and shrubs which are important for grazing, browsing, soil protection, soil stability and other watershed values.

⁴ endemic restricted or peculiar to a locality or region

Cumulative Impacts

Cumulative impacts are the effects on the environment which result from the incremental impacts of actions in this EA when added to other past, present and reasonably foreseeable actions. Under many situations, uncontrolled wildfires affect continuous expanses of vegetation and habitat, leaving minimal mosaic to the burn pattern. Rehabilitation efforts are generally expensive and difficult due to the lack of species diversity in many plant communities which have burned. Long term changes in ecological conditions affect vegetative diversity and habitat quality. Past actions to adjust livestock, wild horse and wildlife use on vegetation combined with present and future actions to implement various fuels and vegetation treatments would allow for an improvement in vegetative recruitment, establishment, production, vigor and diversity and help facilitate the establishment of the natural (historic) fire regime and improve habitat conditions for many species of wildlife. Wildfires and past range improvement projects, combined with the Kern Mountains Landscape Restoration Project will improve the fire regime condition class of the area and maintain or improve vegetative diversity and abundance.

3.4 Soils

Affected Environment

The primary soil mapping units within the project area include the Bluemass-Willynat-Snapseed, Zafod-Ungene, Vyckly-Kious, Chainlink-Ravendog-Lodar, Armpspan-Gremmers, Ragamuffin-Kious-Growset, and the Kious-Pinwheeler-Growset soil associations. (USDA - NRCS, 2005).

The Bluemass-Willynat-Snapseed Association occurs from 6,400 to 7,500 feet in elevation and within the 10 to 12 inch precipitation zone (PZ). These soils occur on slopes from 2 to 30 percent. The soil association is comprised of alluvium, residuum or colluviums from granitic or metamorphic rock parent materials. Water intake rates are rapid and available water capacity is low to moderate. Runoff is slow to medium.

The Zafod-Ungene Association occurs from 5,000 to 6,500 feet in elevation and within the 8 to 10 inch PZ. These soils occur on slopes from 4 to 30 percent. Soil surfaces may be gravelly, stony, or cobbly (often with inclusions of bedrock). Available water holding capacity is low, runoff is moderate to rapid, and the soils are well drained.

The Chainlink-Ravendog-Lodar Association occurs from 6,500 to 7,500 feet in elevation and within the 10 to 14 inch PZ. These soils occur on slopes from 2 to 30 percent. The soils of this site are typically moderately deep and well drained. They are moderately calcareous with soil reaction increasing with soil depth. These soils have from 30 to over 50 percent gravel and cobbles by volume distributed throughout their profile and have high amounts of gravels and/or cobbles on the surface. Permeability is moderate and the available water holding capacity is low.

The Armospan-Gremmers Association occurs from 4,800 to 6,500 feet in elevation in the 8 to 10 inch PZ. These soils occur on slopes from 2 to 50 percent. The soils of this site are shallow to moderately deep to a restrictive layer that impedes plant rooting depth. The available water holding capacity is low to moderate. Soils are well drained, runoff is slow to medium and the potential for sheet and rill erosion is slight to moderate.

The Kious-Pinwheeler-Growset Association occurs from 7,000 to over 9,000 feet in elevation in the 14 to 22 inch PZ. These soils occur on slopes from 15 to 50 percent. The soils in this site are shallow to moderately deep to bedrock or a restrictive layer and well drained. These soils are modified by high volumes of rock fragments throughout the profile. Available water holding capacity is low to very low. Runoff is medium to very rapid.

The Vyv kyl-Kious Association is a woodland association that occurs above 7,000 feet in elevation on northerly aspects and on all aspects above 7,500 feet in the 14 to 22 inch PZ. These soils occur on slopes from 15 to 75 percent. The soils of this woodland site are shallow to bedrock. These soils are skeletal with gravels, cobbles or stones distributed throughout the profile. Available water holding capacity is very low, but trees and shrubs extend their roots into fractures in the bedrock allowing them to utilize deep moisture.

The Ragamuffin-Kious-Growset Association is a woodland association that occurs from 8,500 to 9,700 feet in elevation in the 25 to 35 inch PZ. These soils occur on slopes from 15 to 75 percent. The soils of this site are deep and well drained. These soils are modified by large volumes of rock fragments. Snow accumulation persists into late spring on this site when the soil is not frozen. Snow melt at this time adds to the soil moisture supply. There is normally a 1 to 3 inch surface layer of decomposing organic matter present. This duff layer reduces moisture loss due to evaporation.

The project area is within Major Land Resource Area (MLRA) 28A. The physiographic, climatic, soils and vegetative characteristics of these sites are outlined in USDA - NRCS Ecological Site Guides (2003).

Impacts

Under the Proposed Action, there would be the possibility of soil erosion from implementation of the thinning, chaining and prescribed fire treatments. The thinning and chaining treatments would target pinyon and juniper trees which have established on sagebrush ecological sites and older, decadent stands of sagebrush. With mechanical tree removal, minimal to no impacts are expected to the existing grass and shrub communities which would remain on the site and provide for soil protection and stability.

Under the chaining treatment, impacts to the existing grass community and younger shrub communities are also expected to be minimal. Chaining would remove the targeted pinyon and juniper trees and older, decadent shrubs on the project site. Impacts to soils would result in some soil scarification and furrowing to depths up to approximately 4 to 6 inches. The uprooting of targeted trees would create holes or impressions where the root mass occurred but would eventually fill in or level out over an extended period of time. The grasses and younger, more

vigorous shrubs would remain and continue to provide for soil protection and stability and the trees and larger, more decadent shrubs which were chained would be left on the landscape in a scattered fashion. The scattered material would provide a protective layer for soils from erosion and promote soil fertility by increasing organic matter over time through decomposition. The recruitment and establishment of perennial grasses and native shrubs following both the thinning and chaining treatments would further promote soil health over the long term along with assisting the ecological sites in achieving site potential.

Tebuthiuron treatments may cause an increase in erosion potential as the effects from the herbicide occur, as the leaves of the vegetation would not be able to intercept raindrops. Erosion impact potential would gradually increase for the first few years, as vegetation would be removed at a slower rate. The impacts would be expected to be the greatest after the second year of implementation when herbicidal effects to vegetation are noticeable. Seeding in areas with minimal understory would mitigate impacts to soil erosion. Once perennial grasses and native shrubs have established on the treated sites, erosion and runoff potential is expected to be minimal.

Prescribed fire has the potential to cause soil hydrophobicity. Fire modeling would identify burn prescription parameters that would mitigate the potential for producing hydrophobic soils. The timing of the proposed burn would be such that soils within the proposed burn area would be protected by seasonal events (snow, rain) that raise soil moistures to levels high enough to reduce heat penetration. The reduction in heat penetration reduces the likelihood of creating hydrophobic soils. Surface vegetation is expected to produce a surface fire with minimal ground fire. Soils located within the proposed burn area contain minimal amounts of duff (woody litter and organic matter) therefore reducing the potential for a ground fire. Firing patterns would keep fire intensity at a low to moderate level. Low to moderate prescribed burns rarely produce hydrophobic soils. In addition, fuel continuity and arrangement reduces fire residence time allowing for a shorter fire combustion rate. Research activities occurring concurrently with the prescribed fire operation would monitor soil burn severity and assist the BLM in identifying areas of hydrophobic soils.

Measures to reduce the probability of soil erosion at the prescribed burn site include choosing burn days when soil moistures are high to reduce heat transfer, the most important physical process functioning during a fire. The application of a cooler burning fire would not heat the soil substantially. A low to moderate-severity burn results in minimal changes to most soil properties. Any changes are only minor and typically of short duration. The prescribed burn project area is on the lower third of area slopes and has slopes of less than 30% therefore reducing the affects of slope as it relates to soil erosion. The flaming and smoldering phases of combustion would be kept to a short duration due to moderate fuel loads within the project boundary. The least change in soil physical properties occurs when smoldering fires burn for shorter periods. Ignition operations would be conducted in a manner that would leave buffer strips in drainage bottoms or other soil sensitive areas. These buffer strips, created by selective firing patterns have been shown to stabilize and trap post-fire runoff and surface rill erosion. The proposed prescribed burn area also has existing perennial grass and forb species that are expected to remain on site, and continue to stabilize soils with their root systems.

Under the Alternative Action, soil erosion would be less than in the proposed action. Replacing chaining treatments with mechanical treatments would result in less scarification of the ground and reduce the potential for compaction.

Under the No Action Alternative, current erosion rates would continue. Should a large scale wildfire burn through the area, soil erosion rates would be expected to increase.

Cumulative Impacts

Past actions, such as from wildfires, have increased soil erosion on areas outside the proposed project area. Past actions combined with the lack of treatments within the proposed project area has increased soil erosion vulnerability, especially if large unplanned disturbances such as wildfires, wind events or precipitation events were to occur. The implementation of present and future fuels treatments would increase soil stability in the area as vegetative diversity and ground cover is increased. Through planned treatments, natural disturbances would be smaller in size and manageable and would reduce soil erosion levels over the long term. Cumulative impacts from implementing the Proposed Action, Alternative Action or a combination thereof combined with present and future actions would improve the overall stability of soils and their resistance to erosion. Improving soil cover and stability by improving vegetative conditions through the implementation of various treatments would improve the overall watershed stability which would indirectly reduce cumulative impacts.

3.5 Wildlife; Migratory Birds; Special Status Species Animals

Affected Environment

In the project area, there are approximately 1,300 acres of pronghorn habitat. None of these acres are labeled as crucial summer or winter habitat. The entire project is located in year-round elk and mule deer habitat. The higher elevations in the Kern Mountains are crucial summer habitat for elk populations. No part of the project area is located in crucial summer or winter mule deer habitat.

The BLM 6840 Manual (2008) describes special status species as: 1) species listed or proposed for listing under the Endangered Species Act (ESA), and 2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species. Data pertaining to special status species occurrence in Nevada are maintained by the BLM, U.S. Fish and Wildlife Service (FWS), Nevada Department of Wildlife (NDOW), and Nevada Natural Heritage Program (NNHP). Table 3. below lists BLM sensitive species that have the potential to occur within the project area.

Table 3. BLM sensitive species that have the potential to occur within the project area.

Common Name	Scientific Name
<i>Birds</i>	
Bald eagle	<i>Haliaeetus leucocephalus</i>
Burrowing owl	<i>Athene cunicularia</i>
Flammulated owl	<i>Otus flammeolus</i>
Golden eagle	<i>Aquila chrysaetos</i>
Gray vireo	<i>Vireo vicinior</i>
Juniper titmouse	<i>Baeolophus griseus</i>
Lewis's woodpecker	<i>Melanerpes lewis</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Long-eared owl	<i>Asio otus</i>
Northern goshawk	<i>Accipiter gentilis</i>
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>
Prairie falcon	<i>Falco mexicanus</i>
Red-naped sapsucker	<i>Sphyrapicus nuchanlis</i>
Short-eared owl	<i>Asio flammeus</i>
Swainson's hawk	<i>Buteo swainsoni</i>
Yellow-breasted chat	<i>Icteria virens</i>
Vesper sparrow	<i>Pooecetes gramineus</i>
<i>Mammals</i>	
Pygmy rabbit	<i>Brachylagus idahoensis</i>
<i>Reptiles</i>	
Sonoran Mountain kingsnake	<i>Lampropeltis pyromelana</i>

The greater sage grouse is a high-profile Sensitive Species that has been identified as an “umbrella” species by the Ely District BLM, and chosen to represent the habitat needs of the sagebrush obligate or sagebrush/woodland dependent guild (USDI-BLM 2007; p. 4.7-10). The project is located within the Schell Range/Antelope Valley Sage Grouse Population Management Unit (PMU). Within the project area, there are no known sage grouse leks. One active lek is within 2 miles of a Phase 1 treatment location.

Appendix 8.2 shows migratory bird species of conservation concern found within the Kern Mountain Range and other migratory bird species that may be present in the project area.

Approximately 1,800 acres of the project is located in sage grouse potential nesting habitat. Approximately 6,000 acres of the project is located within summer sage grouse habitat. Sagebrush areas with the potential to be of benefit for sage grouse occupy approximately 3,200 acres of the project location.

Impacts

Under the Proposed Action, mule deer, elk, pronghorn antelope and sage grouse populations within the project area would have improved vegetative production, regeneration, diversity and vigor. All treatments with the exception of prescribed fire will occur outside of migratory bird nesting season or the area will be surveyed for nesting birds prior to treatment resulting in negligible short term impacts to migratory birds. Prescribed fire treatments have the potential to impact individual migratory birds through nest destruction, egg destruction and increased human presence in the area for a few weeks during nesting season. Impacts to migratory bird populations as a whole, however, will be negligible considering the small scale of the project. Longer term impacts include improving ecological conditions towards the potential natural community. There would be a net overall increase in perennial grasses and forbs and regeneration in the existing shrub community. Woodland sites would remain and continue to provide soil protection on those sites as well as thermal protection and escape cover for many species. The treatments would leave a mosaic pattern of vegetation in the area, with natural woodland sites being undisturbed and grass and shrub communities targeted for restoration. A mosaic pattern is expected to provide wildlife populations with greater vegetative diversity, diverse age-class distribution and a patchiness effect which provides thermal and protective cover.

Potential impacts to sage grouse populations include noise disturbance in the short term for the 1 lek located within 2 miles of the project boundary. Chaining during the fall and winter months will be the primary treatment methods in this location, however, resulting in negligible impact to the lek. Nesting habitat will be altered in the short term. Nesting habitat will improve in the long term due to reduced densities of trees and increased understory vegetative diversity as a result of all the potential treatments.

Implementation of the Proposed Action is expected to improve forage availability and diversity for wildlife populations, the associated habitat conditions and assist the Antelope Valley, Deep Creek, Snake Valley North and Mid Spring Valley watersheds in conforming with Rangeland Health Standard 3 (Habitat) which states the following:

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

As indicated by:

*Vegetation composition (relative abundance of species);
Vegetation structure (life forms, cover, heights or age classes);
Vegetation distribution (patchiness, corridors);
Vegetation productivity and vegetation nutritional value"*

Under the Alternative Action, mule deer, elk, pronghorn antelope and sage grouse populations within the project area would see improved vegetative production, regeneration, diversity and vigor as mentioned under the Proposed Action. There would be a net overall increase in

perennial grasses and forbs and regeneration in the existing shrub community. Woodland sites would remain and continue to provide soil protection on those sites as well as thermal protection and escape cover for many species. Ecological conditions should be improved and progress towards the FRCC reference condition. The Alternative Action is also expected to meet the key components of sage grouse habitat requirements. Impacts to migratory birds would be the same as in the proposed action.

Progress towards meeting the objectives is expected to occur at a similar rate as under the Proposed Action.

Under the No Action Alternative, resource conditions are expected to stay the same for a short-term period. The continued establishment of pinyon and juniper onto sagebrush ecological sites and the continued decline in the production, vigor and diversity of grass, forb and shrub species would result in a further decline in habitat conditions. Forage values would continue to decline in terms of both nutrition and palatability. The build-up of pinyon, juniper and increase in the amount of decadent stands of sagebrush communities could result in an eventual large, uncontrolled wildfire which has the potential to eliminate large acreages of existing habitat for an undetermined period of time. The increase in pinyon and juniper on sagebrush ecological sites would result in a decline in the local sage grouse populations through a reduction in food availability and a decrease in suitable nesting cover. Sage grouse are further affected by pinyon and juniper establishment on sagebrush habitats. The increase in pinyon and juniper on sagebrush habitats potentially limits available strutting grounds, summer habitat and nesting habitat.

Cumulative Impacts

Previous actions, such as from past seedings and water developments, have increased forage production, water availability and distribution for wildlife. Activities such as livestock grazing; road construction and maintenance; recreation activities including off-highway travel, camping and hunting; fence construction and uncontrolled wildfire have potentially altered wildlife habitat or affected wildlife behavior and distribution. Most of these activities are expected to continue to some degree in the future and would continue to impact wildlife in a similar fashion. However, as additional forage is provided through vegetative treatments, competition for resources and habitat would decrease, providing long-term cumulative benefits to wildlife. BLM policy and guidance on sage grouse; raptors; pygmy rabbits; migratory birds and threatened, endangered and special status species would help to reduce overall impacts to the species.

3.6 Livestock Grazing

Affected Environment

The project area lies within portions of the Tippet Pass, Mallory Spring, Mill Spring, Pleasant Valley and Tippet allotments. The permitted grazing use on these allotments is as follows:

Allotment	Season of Use	Permitted Use	Ten Year Average AUM Use	Percent of Permit Use
Tippett Pass	Cattle: 11/1 to 5/31 Sheep: 10/1 to 6/15	8177	1078	13%
Mallory Spring	Cattle: 6/1 to 7/15; Cattle: 11/1 to 12/15; Sheep: 9/1 to 2/28; Sheep: 11/1 to 12/15	940	461	49%
Mill Spring	Cattle: 6/1 to 7/15	341	88	26%
Pleasant Valley	Cattle: 4/1 to 9/30	405	389	96%
Tippett	Cattle: 3/1 to 2/28; Sheep: 4/16 to 12/15	12,800	3959	31%

Impacts

Under the Proposed Action, rangeland conditions are expected to improve following implementation of the proposed vegetation treatments. The health, vigor, recruitment and production of perennial grasses, forbs and shrubs would improve which would provide a more palatable and nutritional source of forage for livestock and wildlife and also protect the soil resource and other associated watershed values. The rejuvenation of decadent, even-aged stands of sagebrush and the thinning of established pinyon and juniper woodlands would assist in improving the ecological condition of sites within the proposed project area. No reductions or increases in permitted livestock use would occur as a result of increased forage availability from the proposed project. Implementation of the Proposed Action would assist those portions of allotments within the project area in conforming with Standard No. 1 and Standard No. 3 of the Standards and Guidelines for Nevada's Northeastern Great Basin Area and the Fundamentals of Rangeland Health (Title 43 CFR 4180) by increasing the quantity and quality of herbaceous vegetation and assisting those ecological sites in progressing toward achieving the FRCC reference condition community.

Implementation of the Proposed Action would eventually improve overall livestock performance and improve the economic stability of the permittees due to an increase in the quantity and quality of grasses and other herbaceous forage which are important to livestock grazing. With an increase in the production and vigor of herbaceous plant communities, the forage base would probably more adequately support the existing herd sizes and would improve overall livestock performance. The permittees are dependent on these allotments to help generate a large portion of their annual income.

Currently, minimal livestock grazing use occurs within the proposed project area due to the lack of forage and inaccessibility due to pinyon and juniper cover, distance from water sources and season of use. Therefore, implementation of the Proposed Action should not result in any short-term economic affect on the permittees due to a mandatory rest period of the treatment areas. The rest period is necessary in order to ensure the establishment, protection and long-term

viability of the vegetation enhancement project. The rest period would be for a minimum of two complete growing seasons or until vegetation management objectives have been met as identified under the proposed action. The rest period may be extended pending the rate of progress towards vegetative establishment. The overall impacts to the grazing permittees on the allotments would be minimal, as the permittees could herd livestock and avoid the treatment areas while they are being rested or deferred. If vegetative re-establishment is prolonged as a result of unforeseen circumstances, the permittees would likely not have to find alternative grazing lands to accommodate their livestock operations since the proposed project area currently receives very minimal livestock use.

Seed germination, drought-related influences, wildfire or other natural unforeseen events could potentially affect the rate of vegetative establishment. The type of treatment implemented may also affect the rate of recovery (e.g. mechanical, chemical, etc.). Seedling establishment is expected to occur with the use of site-adapted seed sources and under normal precipitation levels. Resource management objectives would be met at a more rapid rate on those sites with adequate existing understory vegetation in comparison to those sites with a depleted understory component. In the long-term, the Proposed Action should benefit the permittees by providing more palatable, nutritious forage for livestock due to the establishment of seeded perennial vegetation and due to the recovery and improved vigor of existing vegetation. Overall, more palatable vegetation should be available on the allotments for livestock and wildlife. Long-term viability of the vegetative treatments would be expected so long as utilization levels are within acceptable limits and the season of use corresponds with plant phenology characteristics. Any adjustments in stocking levels, the incorporation of management guidelines such utilization levels or other modifications to the existing permits would require further NEPA analysis and would be conducted at the time the permits expire and are analyzed under the permit renewal process. Current utilization level thresholds identified in the existing permit would allow for proper vegetation management. Impacts to the permittees grazing schedules would be minimal under the Proposed Action. Very small portions of each allotment are identified for treatment (less than 10%).

Under the Alternative Action, long term impacts to livestock performance would be very similar to those impacts described above under the Proposed Action.

Under the No Action Alternative, there would be no short term impacts to the current livestock grazing on the Tippet Pass, Mallory Spring, Mill Spring, Pleasant Valley and Tippet allotments. In the long term, forage species for livestock would continue to diminish as pinyon, juniper, sagebrush and undesirable annuals increased in density and grasses and forbs declined. Forage quality and quantity would decline over the long term. The health, vigor, recruitment and production of perennial grasses and native shrubs would decline in the long-term due to a combination of factors including continued grazing and browsing use by livestock, wildlife and wild horses and competition for nutrients, sunlight and precipitation with older, decadent shrubs and expanding pinyon and juniper woodlands. Future drought related factors would also contribute to the decline in condition of upland vegetative communities. The expansion of pinyon and juniper woodlands onto sagebrush ecological sites would continue and the older, decadent even-aged shrub communities would further decline in health and vigor affecting the

recruitment and establishment of new grasses, forbs and shrubs. Grazing areas would be reduced over a period of time.

Impacts to permittee grazing schedules would remain the same as the current situation. Livestock use would not occur due to the difficulty in grazing and herding in the dense tree canopy. Forage availability would remain very limited for livestock and wildlife in those areas.

Cumulative Impacts

Past actions within the proposed project area have impacted livestock grazing by reducing livestock numbers. Livestock grazing in the region has evolved and changed considerably since it began in the 1870's and is one factor that has created the current environment. At the turn of the century, large herds of livestock grazed on unreserved public domain in uncontrolled open range. Eventually, the range was stocked beyond its capacity, causing changes in plant, soil and water relationships. Some speculate that the changes were permanent and irreversible, turning plant communities from grasses and other herbaceous species to shrubs and trees. Protective vegetative cover was reduced, and more runoff brought erosion, rills and gullies. In response to these problems, livestock grazing reform began in 1934 with the passage of the Taylor Grazing Act. Subsequent laws, regulations and policy changes have resulted in adjustments in livestock numbers, season of use and other management actions. The proper management of livestock grazing is one of many important factors in ensuring the protection of Public Land resources. Present actions combined with reasonably foreseeable future treatments could mitigate impacts to vegetation, soils and water relationships by improving the health, vigor and recruitment of perennial grasses, forbs and shrubs; increasing ground cover to improve soil stability, reduce erosion potential and improving water quality; and increasing the quantity and quality of forage for livestock use which would promote herd health and economic stability. Over a period of time, forage conditions would improve which would benefit long term livestock grazing management. Overall, cumulative impacts would be negligible.

4.0 PROPOSED MITIGATION MEASURES

Appropriate mitigation measures have been incorporated into the Proposed Action and the Alternative Action as design features and none are proposed in response to the anticipated impacts.

5.0 SUGGESTED MONITORING

Appropriate monitoring has been incorporated into the Proposed Action and the Alternative Action and no additional monitoring is suggested. Monitoring has been implemented to establish baseline conditions and to measure the effects of the proposed treatments over a period of time. Monitoring would also be used to determine if, and when, resource management objectives have been achieved. Monitoring information would be used to determine when livestock grazing could continue within the project area. An interdisciplinary team, including members of the public expressing interest, would be included in the monitoring efforts. Monitoring information

would be collected, analyzed and interpreted using BLM approved methods. Monitoring data would be available for review at the BLM Ely District Office.

6.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

6.1 Ely District Internal Review

<u>Name</u>	<u>Title</u>	<u>Resources</u>
Zach Peterson	Forester	Forest resources, NEPA compliance, air quality, environmental justice
Paul Podborny	Wildlife Biologist	Wildlife, T&E/Sensitive Species, Riparian/Wetlands
Nancy Williams	Wildlife Biologist	Wildlife, T&E/Sensitive Species, Riparian/Wetlands
Benjamin Noyes	Wild Horse and Burro Specialist	Wild Horses
Mark D'Aversa	Hydrologist	Soil, Water, Floodplains
Shawn Gibson	Archeologist	Cultural/Paleontological/Historical Res.
Melanie Peterson	Environmental Protection Spec.	Hazardous Materials, Safety
Mindy Seal	Natural Resource Specialist	Noxious and Invasive Weeds
Dave Jacobson	Wilderness Planner	Wilderness Values, Special Designations
Elvis Wall	Tribal Coordinator	Native American Religious Concerns
Brenda Linnell	Realty Specialist	Lands and Realty Uses
Dave Davis	Geologist	Minerals
Liz Townley	Recreation Specialist	Recreation, VRM
Cody Coombs	Supervisory Natural Resource Specialist	Fuels
Rob Frisk	RX Fire/Fuels Specialist	Fuels/Prescribed Fire
Craig Hoover	Range Management Specialist	Livestock Grazing
Brett Covlin	Range Management Specialist	Livestock Grazing

6.2 Tribal Coordination

On September 17, 2009 the Kern Mountain Landscape Restoration proposal was presented at a Tribal coordination meeting at the Ely BLM District Office. No concerns were identified during this meeting.

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8.0 APPENDICES

8.1 Weed Risk Assessment

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

Blue Mass/Kerns Mtns Landscape Restoration SNPLMA project

White Pine County, Nevada

On April 5, 2010 a Noxious & Invasive Weed Risk Assessment was completed for the Blue Mass/Kerns Mountains Landscape Restoration SNPLMA project. The proposal is to reduce tree densities within the project area to move current vegetative conditions in a path towards reaching a Fire Regime Condition Class 1 in treated areas. Additional proposals of treatments within the project boundaries are to improve the health of aspen stands occurring in the Kern Mountain Range. A variety of treatments would be accomplished through the following potential methods:

- Tree thinning
- Chaining
- Tebuthiuron treatments
- Weed prevention and treatment
- Prescribed fire in Mallory Canyon
- Aspen restoration
- Seeding

Each proposed treatment is further described below including areas in which the treatment would likely be used, to be determined through adaptive management.

The thinning treatments would be conducted by manual methods (chainsaw) and/or mechanical methods such as a bull hog, feller-buncher or similar piece of equipment that masticates trees. Slash/biomass removal would depend on the type of method used. Slash/biomass created from manual methods or equipment which provides whole tree cutting methods would be consolidated into piles and disposed of later through prescribed burning or hauled off site for use as biomass. Slash/biomass created from mastication equipment would be left on site to degrade by natural means. Biomass, including fuelwood, would be made available for public use through sales to the greatest extent possible.

Chaining would be accomplished using the Ely Anchor Chain (Navy ship anchor chain with 18 inch railroad iron welded perpendicular to the chain link). Chaining could occur anytime but would generally occur in the late fall or winter months.

Prescribed Fire operations would target 1,500 acres of public land in the Deep Creek watershed of the Kern Mountain Range. General locations include areas to the south and west of the Pleasant Valley/Tippetts Road including areas located north and west of the 2001 Mallory Fire and south of the Blue Mass Scenic Area. Target areas chosen have similar characteristics of the 2001 Mallory Fire where positive natural re-establishment of native grasses and favorable establishment of seeded grasses occurred. Non-native invasive plant species establishment on

the Mallory Fire site was minimal, suggesting that adjacent areas would be good locations for prescribed fire.

Various research institutes involved in gathering data to determine soil burn severity following natural and prescribed fires have expressed interest in gathering scientific data prior to, during and following the prescribed burn. In general, research operations that have a potential to cause ground disturbance are listed in the EA.

The BLM proposes to manage noxious and invasive weeds within the project area. Management of weeds will include best management practices to prevent spread and early detection; and treatments to control current populations and any new weed populations discovered during the life of the project. Treatments could include biological controls, targeted grazing, mechanical controls and herbicide. For biological controls only the release of USDA - Animal and Plant Health Inspection Service approved insects or pathogens would be used and would be accompanied by a BLM Biological Control Agent Release Proposal. For targeted grazing the type of animal selected would be matched appropriately with the target species and to adequately meet the desired prescription of the area. The animals would be closely observed to control the intensity and duration of the grazing to avoid grazing impacts on desirable species. No sheep or goat grazing treatments would be conducted in occupied bighorn sheep habitat. Mechanical treatments may include hand pulling, mowing, cutting using hand or chainsaw, and prescribed burns. Herbicide treatments would require a Pesticide Use Report submitted to the BLM Nevada State Office prior to implementation. Herbicide treatments for weeds would include the potential use of all BLM approved herbicides and surfactants, both in the BLM Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement and Record of Decision (BLM 2007) and any herbicides approved in the future using the protocol for identifying, evaluating, and using new herbicides as described in that EIS. Depending on chemical, size of the area and acceptable amount of drift; applications of treatments could include backpack application, pack animal tank application, ATV/UTV tank application, truck tank application, and aerial application.

Chemical treatments using a pellet form of the herbicide Tebuthiuron (trade name Spike 20P) would occur in areas where pinyon and juniper trees have become established on sagebrush ecological sites. This treatments would be generally used in areas where chaining or thinning is unreasonable due to terrain or site specific conditions.

Tebuthiuron is an herbicide that primarily affects woody species (e.g., pinyon, juniper, sagebrush and other shrubs). The herbicide would be applied using aerial (helicopter or airplane) resources. The pilot would be required to have a pesticide applicator's license and the aircraft would need to be equipped to precisely dispense the herbicide. A Pesticide Use Proposal (PUP) would be completed and authorized prior to completing the treatment. Standards and guidelines for storage facilities, posting and handling, accountability and transportation as listed in BLM Handbook 9011 (Pesticide Storage, Transportation, Spills and Disposal) Section II would be followed. Items listed in the Material Safety Data Sheet provided for Spike 20P would also be adhered to.

Application rates and procedures would follow directions as listed on the herbicide specimen label for sagebrush, pinyon and juniper. Target areas for herbicide treatment would be those areas where pinyon and juniper have established on sagebrush ecological sites and sites where older, decadent, even-aged stands of sagebrush exist. Any areas containing stands of antelope bitterbrush would be avoided to the extent possible.

The preferred time of application would be during the fall prior to the first snow fall, however, the herbicide could be applied during any time as long as the ground is not frozen, water saturated or snow covered. The project would be conducted during calm weather conditions to avoid herbicide (pellet) drift. The project design would include a "no application" buffer zone of at least 100 feet from drainage bottoms and 300 feet around springs and perennial water sources.

Aspen Restoration would take place through a combination of hand-felling of conifers and fencing of aspen stands to reduce herbivory of the aspen by ungulates. All aspen stands within the Kern Mountain would be targeted for treatment, which is estimated at approximately 1,300 acres.

Seeding would occur in areas where the interdisciplinary team determines that existing understory vegetation is not sufficient (generally in areas with less than 10% relative cover of perennial grass and forb species). Seeding would be conducted on the treated sites during the fall or early winter months, preferably prior to snow fall. Seeded species would include perennial species which are able to successfully compete with invasive annuals (e.g., cheatgrass) and are adapted to site characteristics. Native species would be preferred, but non-native species may be used depending on availability and funding. Seeding would occur through aerial application on the thinning and chaining treatments and broadcasted by tractor or ATVs on the chemical treatment area. Bitterbrush (*Purshia tridentata*) seed if used in the chaining area would be applied using dribblers attached to the dozer.

Stipulations identified in the Weed Risk Assessment would be implemented as part of the proposed action for phase 1 of the project. Subsequent treatments or changes in treatment methods will require an additional weed risk assessment and those stipulations will also be implemented.

No new roads would be constructed or created during project implementation. Off-road travel with dozers and other heavy equipment would occur during chaining and thinning activities. Loading and unloading any equipment would occur on existing roads to minimize off-road disturbances and impacts.

Progress towards meeting vegetation objectives would be measured from selected monitoring sites using random density 9.6 square foot plots. Monitoring sites would be established within one year following treatment completion and measured annually. The livestock grazing closure period may be extended pending the rate of progress towards meeting treatment objectives. No new fencing is being proposed in order to prevent livestock from entering the treated areas, except at small scales around treated quaking aspen stands.

The treatment areas would be inventoried for weeds and monitored to ensure noxious weeds and non native invasive species infestations are controlled. Noxious weed infestations would be reported to the Ely District Office Weed Coordinator in order to be evaluated and determine treatment needed.

The Alternative Action is to treat the same locations, without chaining or applying Tebuthiuron. Mechanical tree removal would be used in place of chaining and Tebuthiuron treatments. Locations, other treatment techniques and all other design features of the proposed action would be the same. Mechanical tree removal would be the primary treatment for Phase 1 of the project and adaptive management techniques would be used to determine treatment types for subsequent phases of the project. Costs of treatments would be expected to rise as a result of removing chaining from the list of potential treatment options.

The No Action Alternative is the current management situation. Under the No Action Alternative, there would be no treatments implemented within the proposed project areas.

No field weed surveys were completed for this project. Instead the Ely District weed inventory data was consulted. The following species are found within the project area:

<i>Acroptilon repens</i>	Russian knapweed
<i>Carduus nutans</i>	musk thistle
<i>Cirsium arvense</i>	Canada thistle
<i>Cirsium vulgare</i>	bull thistle
<i>Hyoscyamus niger</i>	black henbane
<i>Lepidium draba</i>	hoary cress

The following species along with the above species are found along roads and drainages leading to the area:

<i>Acroptilon repens</i>	salt cedar
<i>Carduus nutans</i>	Scotch thistle

There is also probably cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomeratus*), and Russian thistle (*Salsola kali*) scattered along roads in the area. The area was last inventoried for noxious weeds from 2004 through 2008.

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 average factor rates as Moderate (6) at the present time. This project has a range of ratings for this factor depending on the treatment method selected. The hand removal

method has a Low (3) rating due to the minimal amount of ground disturbance associated with those treatments. The fencing and having the public access the area to retrieved fuel wood has a Moderate (5) rating due to the amount of ground disturbance and the possibility of transporting weed seeds on the vehicle tracks. The chaining, use of heavy equipment and prescribed burn methods have a High (8) rating due the weed infestation that already exist within the project area.

Treatment of thistles within the project area will minimize spread. Also since there are very few occurrence of black henbane and Russian knapweed currently documented, early detection and rapid response to control these two species will benefit the project. Also, due to the amount of riparian areas near the project area early detection and treatment of salt cedar is essential.

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 (6) at the present time. Since the existing thistle infestations occur in past burns, it is probable that more of these infestations could occur. If new infestations establish within the project area this could adversely impact those native plant communities. Also, an increase of cheatgrass could alter the fire regime in the area. However the proposed action is designed to improve native plant communities with an extensive weed prevention and treatment process included in the proposed action.

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 (48). This indicates that the project can proceed as planned as long as the following measures are followed:

- Prior to entering public lands, the contractor will provide information and training regarding noxious weed management and identification to all personnel who will be affiliated with the implementation and maintenance phases of the project. The importance of preventing the spread of weeds to uninfested areas and importance of controlling existing populations of weeds will be explained.

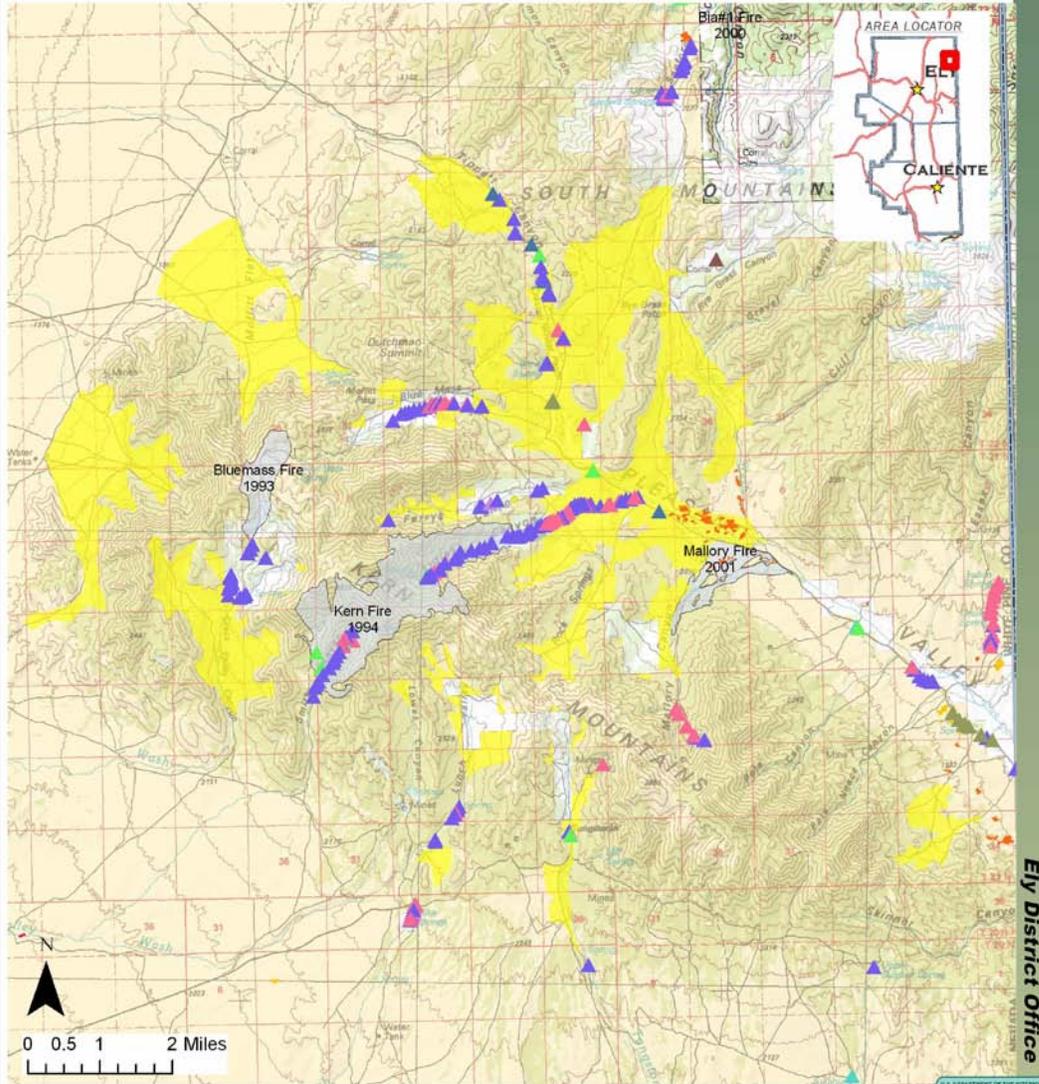
- To eliminate the transport of vehicle-borne weed seeds, roots, or rhizomes all vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; or for authorized off-road driving will be free of soil and debris capable of transporting weed propagules. All such vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Cleaning efforts will concentrate on tracks, feet and tires, and on the undercarriage. Special emphasis will be applied to axels, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning sites will be recorded using global positioning systems or other mutually acceptable equipment and provided to the Field Office Weed Coordinator or designated contact person.
- Reclamation would normally be accomplished with native seeds only. These would be representative of the indigenous species present in the adjacent habitat. Rationale for potential seeding with selected nonnative species would be documented. Possible exceptions would include use of non-native species for a temporary cover crop to out-compete weeds. Where large acreages are burned by fires and seeding is required for erosion control, all native species could be cost prohibitive and/or unavailable.
- If additional areas are identified a review of the Ely District weed inventory data will need to be completed for these additional locations.

Reviewed by: /s/Mindy Seal
Mindy Seal
Natural Resource Specialist

4/30/2010
Date

BLUE MASS VEGETATION TREATMENT PROJECT INVENTORIED NOXIOUS AND NON NATIVE INVASIVE WEEDS

BLM



Ely District Office

- | | | | |
|---|------------------------|---------------------------------------|---------------------------|
| Legend | | | |
| bluemassproject_area | ▲ MUSK THISTLE | Invasive Annual and Biennial Forbland | BLM |
| Ely Dist. Noxious Weed Inventory | ▲ RUSSIAN KNAPWEED | Invasive Annual Grassland | Forest Service |
| Commonname | ▲ SALT CEDAR | Invasive Perennial Grassland | Great Basin National Park |
| ▲ BLACK HENBANE | ▲ SCOTCH THISTLE | Past Large Fires | State of Nevada |
| ▲ BULL THISTLE | ▲ WHITETOP/HOARY CRESS | | Private |
| ▲ CANADA THISTLE | | | |

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.
 Inventoried 2004-2008
 Map Produced by: EYDO Weed Staff
 4/5/2010



8.2 Migratory Bird Species

The following data reflect survey blocks and/or incidental sightings of bird species within the allotments boundaries from the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). These data represent birds that were confirmed, probably, or possibly breeding within or near the project boundaries. The list also includes Species of Conservation Concern that have a high probability of inhabiting the project area. These data are not comprehensive, and additional species not listed here may be present within the project boundary.

Common Name	Scientific Name	Species of Conservation Concern	Breeding Block
American robin	<i>Turdus migratorius</i>		X
Black-throated gray warbler	<i>Dendroica nigrescens</i>	X	
Brewer's sparrow	<i>Spizella breweri</i>	X	X
Bushtit	<i>Psaltriparus minimus</i>		X
Calliope hummingbird	<i>Stellula calliope</i>		X
Cassin's finch	<i>Carpodacus cassinii</i>		X
Chipping sparrow	<i>Spizella passerina</i>		X
Clark's nutcracker	<i>Nucifraga columbiana</i>		X
Common raven	<i>Corvus corax</i>		X
Cooper's hawk	<i>Accipiter cooperii</i>		X
Dark-eyed junco	<i>Junco hyemalis</i>		X
Ferruginous hawk	<i>Buteo regalis</i>	X	
Golden eagle	<i>Aquila chrysaetos</i>	X	X
Gray vireo	<i>Lireo vicinior</i>	X	
Greater sage-grouse	<i>Centrocercus urophasianus</i>	X	
Green-tailed towhee	<i>Pipilo chlorurus</i>		X
Hairy woodpecker	<i>Picoides villosus</i>		X
House wren	<i>Troglodytes aedon</i>		X
Juniper titmouse	<i>Baeolophus ridgwayi</i>	X	
Lazuli bunting	<i>Passerina amoena</i>		X
Lewis's woodpecker	<i>Melanerpes lewis</i>	X	
Loggerhead shrike	<i>Lanius ludovicianus</i>	X	
Mountain bluebird	<i>Sialia currucoides</i>		X
Mountain chickadee	<i>Poecile gambeli</i>		X
Mourning dove	<i>Zenaida macroura</i>		X
Northern goshawk	<i>Accipiter gentilis</i>	X	
Northern harrier	<i>Circus cyaneus</i>	X	
Olive-sided flycatcher	<i>Centerpus cooperi</i>	X	
Peregrine falcon	<i>Falco peregrinus</i>	X	
Pinyon Jay	<i>Gymnorhinus</i>	X	x

	<i>cyanocephalus</i>		
Plumbeous vireo	<i>Vireo plumbeus</i>		X
Prairie falcon	<i>Falco mexicanus</i>	X	
Red-naped sapsucker	<i>Sphyrapicus nuchalis</i>	X	X
Rock wren	<i>Salpinctes obsoletus</i>		X
Sage sparrow	<i>Amphispiza belli</i>	X	
Song sparrow	<i>Melospiza melodia</i>		X
Spotted towhee	<i>Pipilo maculatus</i>		X
Townsend's solitaire	<i>Myadestes townsendi</i>		X
Tree swallow	<i>Tachycineta bicolor</i>		X
Virginia's warbler	<i>Vermivora virginiae</i>	X	
Warbling vireo	<i>Vireo gilvus</i>		X
Western scrub-jay	<i>Aphelocoma californica</i>		X
Western tanager	<i>Piranga ludoviciana</i>		X