



United States Department of the Interior  
BUREAU OF LAND MANAGEMENT

Ely District  
702 North Industrial Way, HR 33 Box 33500  
Ely, NV 89301  
[http://www.blm.gov/nv/st/en/fo/ely\\_field\\_office.html](http://www.blm.gov/nv/st/en/fo/ely_field_office.html)



In Reply Refer To:  
9210 (NVL0044)

Dear Interested Public,

The Bureau of Land Management (BLM) is proposing to conduct a sagebrush restoration project on three areas within the Clover Mountains. The project areas are located approximately twelve miles southeast of Caliente, Nevada in Lincoln County. The objective of this project is to improve the overall understory vegetative composition and improve the health, vigor and production of perennial grass, forb and shrub species within the sagebrush ecological sites. The project areas total approximately 900 acres in size however; an estimated 60 to 70 percent would be targeted for treatment. The areas are all public lands administered by the BLM District.

Enclosed is a preliminary environmental assessment (EA) that has been completed to analyze the effects of this project from two action alternatives, and the no action alternative (not completing the project). Currently, the preferred action is the proposed action. The public is being provided an opportunity to review and comment on the preliminary EA. Please provide comments by July 13, 2009 to the attention of Kyle Teel at the BLM Caliente Field Office, P.O. Box 237, Caliente, NV 89008.

If you have any questions, please contact Kyle Teel, Fire Ecologist at (775) 726-8117. If you would like to receive the final EA and decision please notify Kyle by the above date. Thank you for participating in the planning process for this project. I look forward to working with you in the future.

Sincerely,

Tye Petersen  
Fire Management Officer  
Ely District Office

Enclosure

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

---

**Preliminary Environmental Assessment  
DOI-BLM-NV-L000-2009-0000-EA  
June 16, 2009**

**Stokes Flat, Fife Flat and Pine Wash  
Sagebrush Restoration Project**

U.S. Department of the Interior  
Bureau of Land Management  
Caliente Field Office  
Phone: (775) 726-8100  
Fax: (775) 726-8111



# TABLE OF CONTENTS

1.0 BACKGROUND.....	2
1.1 Introduction.....	2
1.2 Need for the Proposal.....	4
1.3 Relationship to Planning.....	6
1.4 Issues.....	8
2.0 DESCRIPTION of PROPOSED ACTION and ALTERNATIVES .....	8
2.1 Proposed Action.....	8
2.2 Alternative Action.....	12
2.3 No Action Alternative.....	13
2.4 Alternatives Considered but Eliminated from Detailed Analysis.....	13
3.0 DESCRIPTION of the AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES and CUMULATIVE IMPACTS.....	14
3.1 General Description.....	14
3.2 Vegetation.....	16
3.3 Soils.....	19
3.4 Cultural and Historical Resource Values.....	21
3.5 Fire and Hazardous Fuels.....	22
3.6 Invasive, Non-Native Species (Including Noxious Weeds).....	24
4.0 PROPOSED MITIGATION MEASURES.....	27
5.0 SUGGESTED MONITORING.....	27
6.0 CONSULTATION and COORDINATION.....	27
7.0 REFERENCES.....	29
8.0 APPENDICES.....	30

## 1.0 BACKGROUND

### 1.1 Introduction

The project areas analyzed in this environmental assessment (EA) are located in the Clover Mountains, Lincoln County, Nevada (Map1). The primary vegetation within the project area consists of sagebrush (*Artemisia spp.*) communities with encroaching stands of pinyon (*Pinus monophylla*) and juniper (*Juniperus osteosperma*). Perennial grasses and forbs occur at levels under site potential on a majority of the project areas. The total project area parameter includes approximately 900 acres, in three different locations. All of the lands within the project area parameter are public lands administered by the BLM.

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

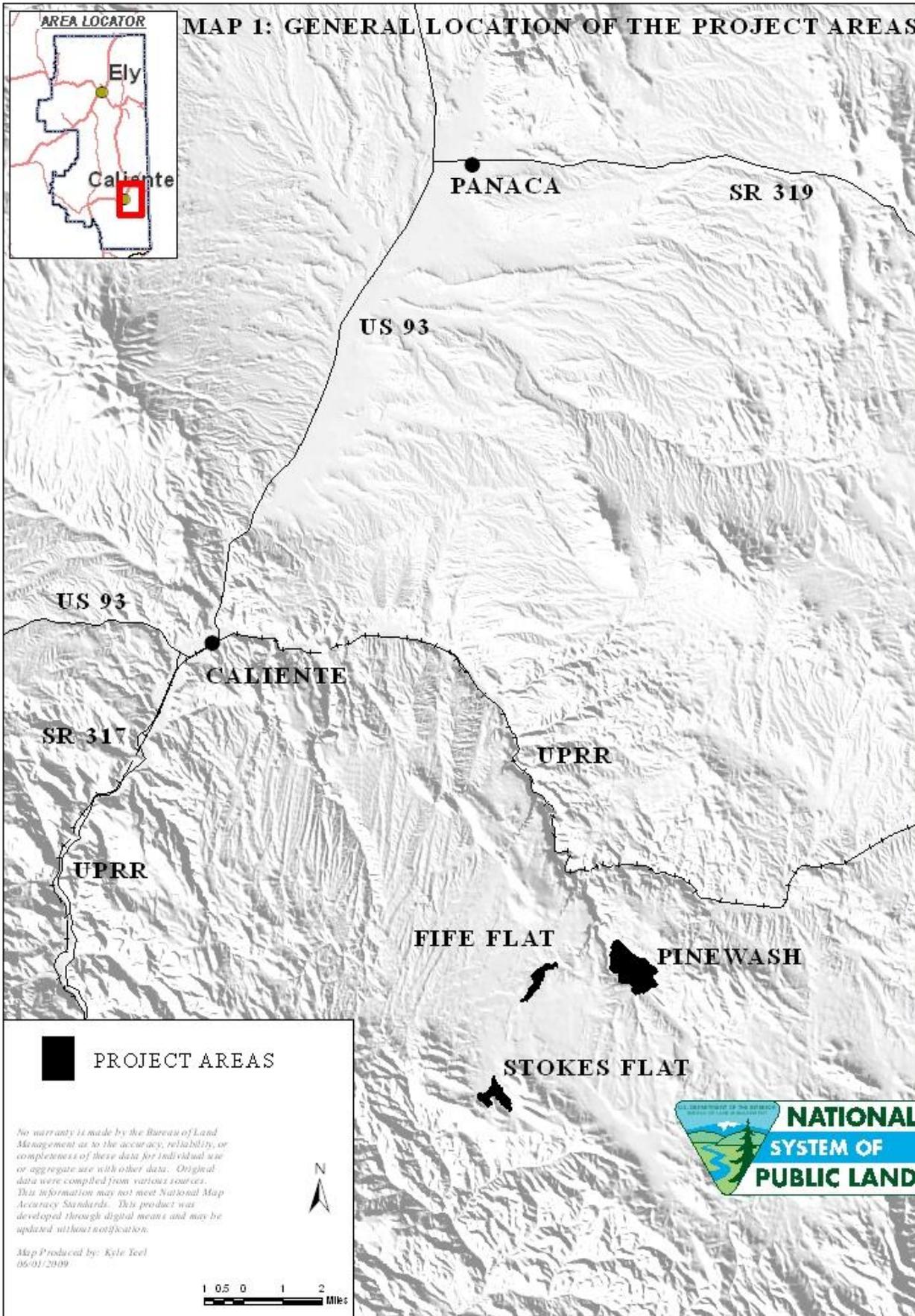
- *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, Ten-Year Comprehensive Strategy* was a policy developed in 2001 that placed emphasis on reducing risk to communities and the environment by managing wildland fire, hazardous fuels and ecosystem restoration 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 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 Stokes Flat, Fife Flat and Pine Wash Sagebrush Restoration Project responds to the fuels reduction element of the Cohesive Strategy.

MAP 1: GENERAL LOCATION OF THE PROJECT AREAS.



Ely District Office

## 1.2 Purpose and Need for Action

The purpose of the project is to:

- Improve the overall understory vegetative composition to ecological site potential and increase the health, vigor and production of perennial grass, forb and shrub species.
- Improve the available habitat for neighboring mule deer populations.
- Reduce the risk of large, uncontrolled wild fires by reducing fuel loading and continuity within the Clover Creek South watershed by facilitating FRCC 1 for the area.
- Restore the historic disturbance regime within the project area.

Resource management objectives include the following:

Short Term (immediately post treatment)

- Remove encroaching single-leaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) on at least 80 - 90 percent (720 – 810 acres) of the sagebrush ecological sites within the approximately 900 acre project areas.
- Reduce shrub density and shrub cover on an estimated 60 to 70 percent (approximately 540 – 630 acres) of the approximate 900 acres project areas.

Long Term (5 to 10 years post treatment)

- Increase the percent composition of perennial grasses and forbs to a minimum of 75 percent of the ecological site potential on sagebrush ecological sites within 5 to 10 years following completion of the proposed treatments
- Increase the percent composition of sagebrush species to a minimum of 50 percent of the ecological site potential on sagebrush ecological sites within 5 to 10 years following completion of the proposed treatments

The need for the project is indicated by the declining understory, heavy fuel loading of shrubs and trees, encroachment of pinyon and juniper trees, and lack of natural disturbance within the project area. Further information on the need for the project is described below.

Pinyon and juniper trees throughout the Great Basin and other geographic regions are expanding onto habitats historically dominated by perennial grasses, sagebrush and other native shrubs (Tausch, 1999; Brockway, et. al, 2002; West, et. al, 1998). In some areas, long-term fire suppression efforts, excessive grazing impacts or inappropriate grazing strategies (i.e. continuous early spring grazing) and drought related conditions have led to the conversion of sagebrush/grass communities to areas dominated by homogenous stands of sagebrush, with declining, remnant populations of native perennial forbs and grasses. In some areas, the establishment of pinyon and juniper on sagebrush/grass sites has not only resulted in the loss of the grass and forb component, but in the decadence and low vigor of important shrub species such as antelope bitterbrush. When valuable grass, forb and shrub species decline, excessive surface runoff and soil erosion, reduced soil moisture and decreased groundwater recharge may occur (Bedell, 1993; Thurow, 2005). There is a need to restore these ecological site conditions in order to improve a wide array of watershed values.

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 dominant over story vegetation. The primary vegetative community (inter-mountain basins sagebrush shrub land) within the project area is in Fire Regime Groups IV (LANDFIRE Biophysical Setting Models, 2006). This vegetation community consists primarily of Wyoming sagebrush (*Artemisia tridentata* ssp. *Wyomingensis*), Indian ricegrass (*Oryzopsis hymenoides*), and bottlebrush squirreltail (*Elymus elymoides*) with encroaching pinyon (*Pinus monophylla*) and juniper (*Juniperus osteosperma*) trees.

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 FRCC1 community have been developed for most major vegetation types. Reference conditions are compared to actual conditions for purposes of determining current FRCC classes.

The proposed project areas have been rated at FRCC 2. This indicates that fire regimes have been moderately altered from their historical range. Fire frequencies are departed from historical frequencies by multiple return intervals. Risk of losing key ecosystem components is moderate. Vegetation attributes have been moderately altered from their historical range. There is a need to assure each fuel type with the project area is within the natural regime. The goal is to meet FRCC 1 for the proposed project area.

### **1.3 Relationship to Planning**

The Proposed Action is in conformance with, and tiers to the analysis completed for the following Land Use Plan:

#### Ely District Resource Management Plan (RMP) and Record of Decision

- **Vegetation Resources**

##### **Goal**

Manage vegetation resources to achieve or maintain resistant and resilient ecological conditions while providing for sustainable multiple uses and options for the future across the landscape.

##### **Objectives**

To manage for resistant and resilient ecological conditions including healthy, productive, and diverse populations of native or desirable nonnative plant species appropriate to the site characteristics.

##### **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.

**Parameter – Sagebrush (basin big sagebrush, Wyoming big sagebrush, mountain big sagebrush, and black sagebrush)**

**VEG-17:** Integrate treatments to: 1. Establish and maintain the desired herbaceous state or early shrub state where sagebrush is present along with a robust understory of perennial species. 2. Prioritize treatments toward restoration of sagebrush communities on areas with deeper soils and higher precipitation.

- **Fire**

**Goals**

Provide an appropriate management response to all wildland fires, with emphasis on firefighter and public safety, consistent with overall management objectives. Return fire to its natural role in the ecological system and implement fuels treatments, where applicable, to aid in returning fire to the ecological system. Establish a community education program that includes fuels reduction within the wildland urban interface to create fire-safe communities.

**Objectives**

To manage wildland and prescribed fires as one of the tools in the treatment of vegetation communities and watersheds to achieve the desired range of condition for vegetation, watersheds, and other resource programs (e.g., livestock, wild horses, soils, etc.).

**Management Actions**

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

- The Lincoln County Elk Management Plan (July 1999) 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, hunting guides, Lincoln County Public Lands Committee, Farm Bureau 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 231, which was identified as a maintenance area for project development for habitat improvement projects to improve habitat and promote growth of the elk herd. The estimated population of elk within Management Unit 231 was 330 animals in 1998, and long term goals were to have 900 animals within this unit.

## **1.4 Issues**

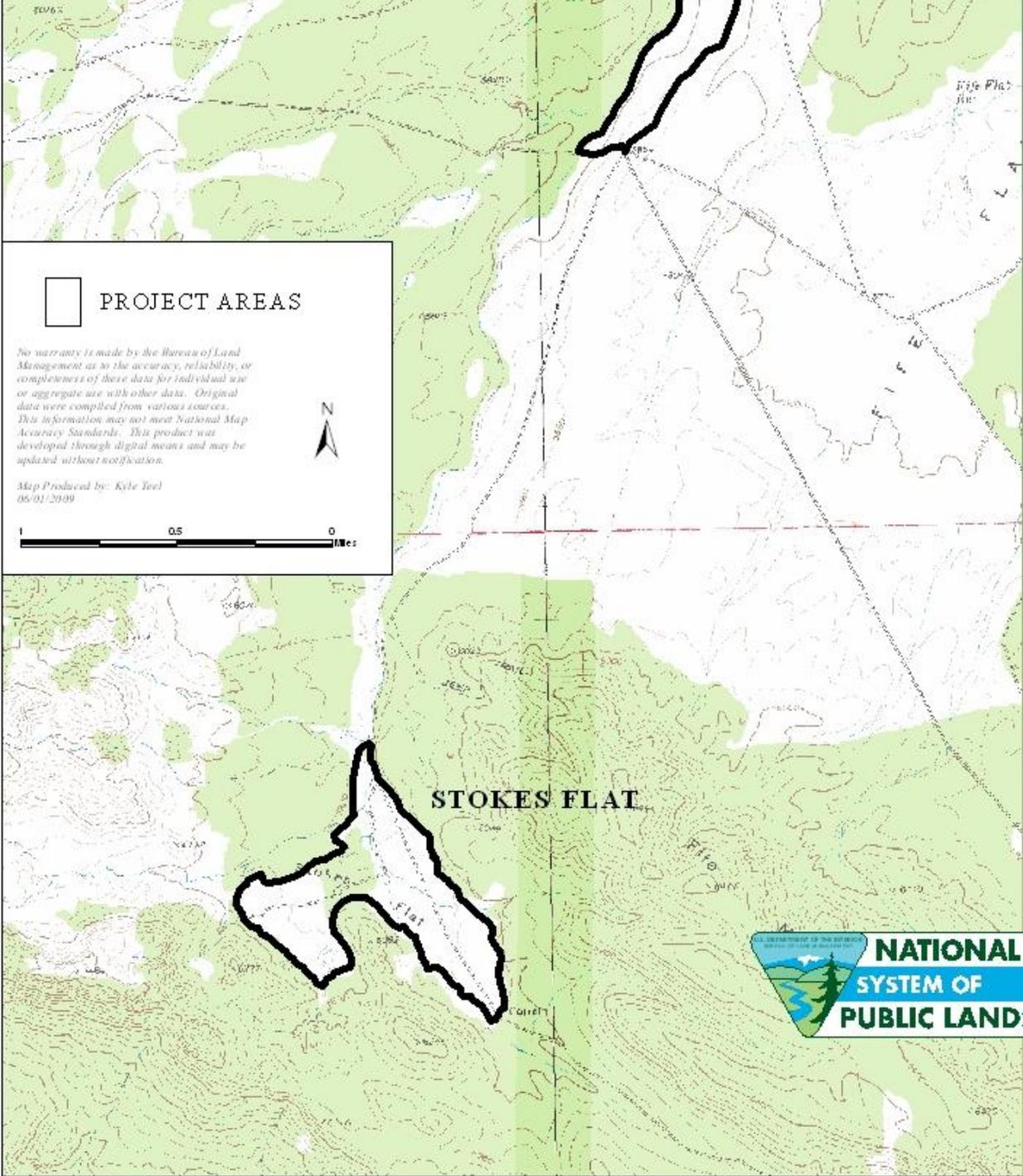
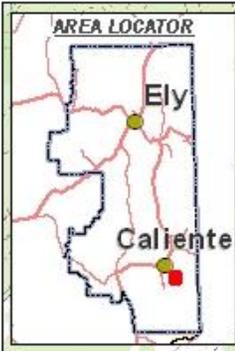
Issues are impacts or potential impacts to the human environment. The identification of issues for this environmental assessment was accomplished by considering the resources that could be affected by implementation of the Proposed Action or any of the alternatives, as well as through involvement with the public and input from an interdisciplinary team. The issues identified were in regards to soils disturbance, vegetation, noxious weeds and invasive species infestations, cultural resources, and fire management.

## **2.0 DESCRIPTION of PROPOSED ACTION and ALTERNATIVES**

### **2.1 Proposed Action**

The Ely District BLM proposes to restore sagebrush ecological sites on three sites (Stokes and Fife Flats and Pine Wash) (Maps 2 & 3) in the Clover Mountains using a combination of manual and mechanical treatments with seeding. The proposed restoration sites have high restoration potential, and were chosen due to factors including decadent sagebrush, the amount of perennial grasses and forbs in the understory, and pinyon and juniper trees encroaching onto the site. Project implementation is proposed for the late summer to early winter.

# MAP 2: STOKES AND FIFE FLATS PROJECT AREAS.



 PROJECT AREAS

*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. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.*

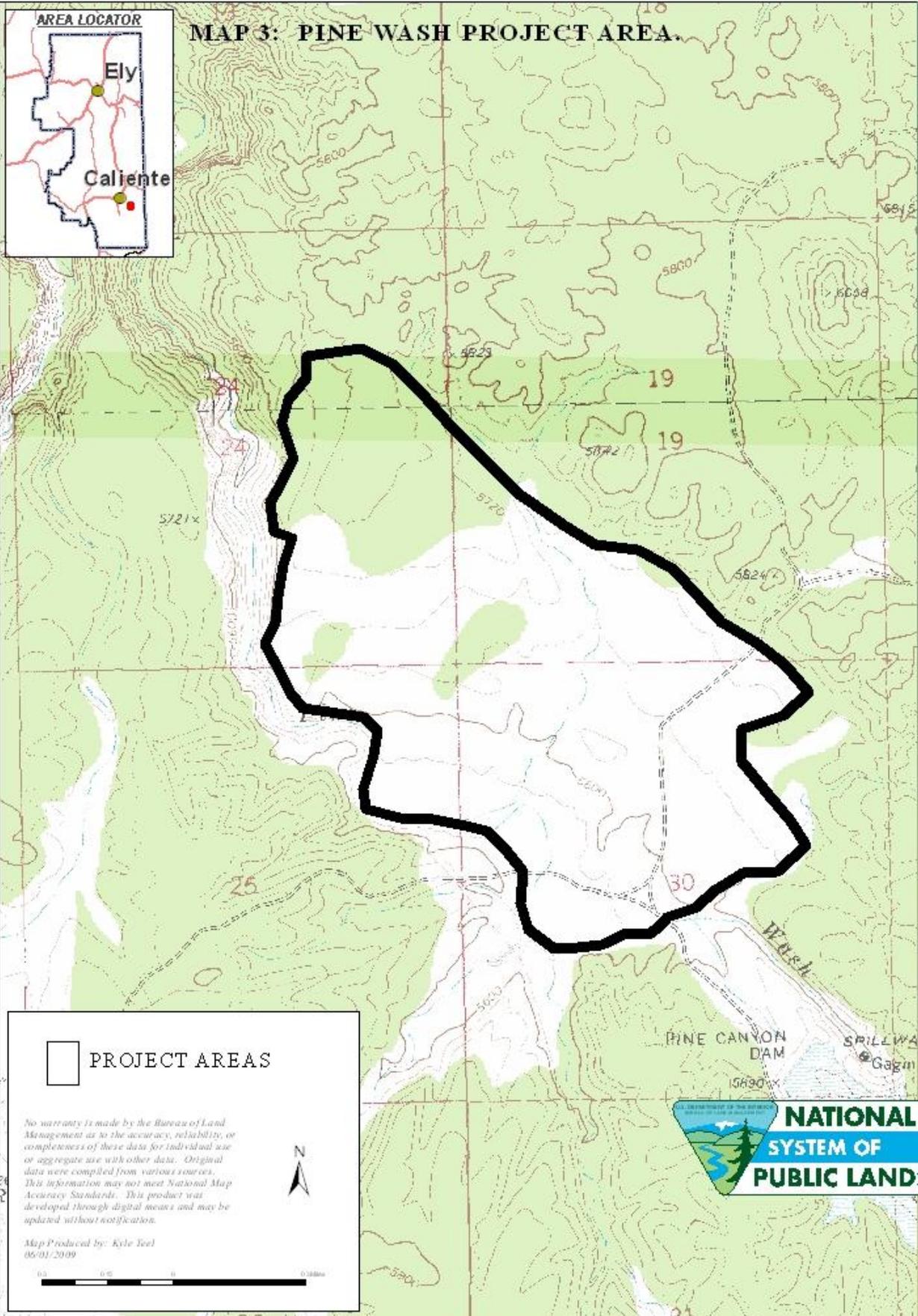
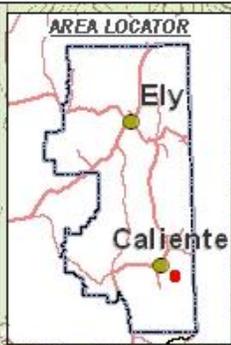
Map Produced by: Kyle Teel  
06/01/2009



Ely District Office



# MAP 3: PINE WASH PROJECT AREA.



 PROJECT AREAS

*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. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.*

Map Produced by: Kyle Teel  
06/01/2009



Two treatments would take place in the project areas: 1) Pinyon and juniper trees within the sagebrush ecological sites would be removed with manual methods (chainsaw) and/or mechanical methods such as a bull hog, feller buncher or similar piece of equipment that masticates (i.e. chews up, shreds) trees. Slash/biomass removal would depend on the type of method used. On areas where tree densities are high, 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 and/or hauled off site for use as biomass. In areas where the tree density is lower slash/biomass created from manual methods or equipment which provides whole tree cutting methods would be scattered and left on site to degrade by natural means. Slash/biomass created by mastication equipment would be left on site to degrade by natural means. 2) Sagebrush on 60 to 70 percent (approximately 540 – 630 acres) of the approximate 900 acre project areas would be treated with a roller chopper/aerator. A roller chopper/aerator is a large hollow drum with triangular wedges welded onto the outside surface and pulled behind a tractor. Varying amounts of water would be added to the drum to adjusting the weight and the degree of sagebrush reduction. A seeder attached to the roller chopper would spread seed during treatment. This method reduces shrub density and shrub cover by crushing vegetation and releasing the existing understory, while retaining some of the existing sagebrush. It also prepares soil for seed application by creating some moderate soil disturbance. Soil disturbance increases water infiltration and retains runoff encouraging seed establishment. The seed mixture would include perennial grass and forb species adapted to the ecological site. Species that could be used include, but are not limited to: Indian ricegrass (*Achnatherum hymenoides*), Sandberg and/or canby bluegrass (*Poa secunda*), western wheatgrass (*Pascopyrum smithii*), small burnet (*Sanguisorba minor*), and blue flax (*Linum perenne*).

All treatments that create surface disturbance would be inventoried for cultural resources to identify eligible (Historic Properties) and sensitive sites prior to implementing treatments. Identified cultural resource sites 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 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 during treatment 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.

The Ely District Noxious Weed Prevention Schedule would be adhered to during all phases of project implementation. Mitigation measures identified in the Noxious and Invasive Weeds Risk Assessment (Appendix A) would be implemented as part of the proposed action.

Raptor nesting sites would be identified and protected in areas of the proposed vegetative manipulation. To minimize effects to migratory birds, project implementation would occur outside of the breeding/nesting period.

No new roads would be constructed or created during project implementation. Off-road travel with the tractor and roller crusher and tree removal would occur during treatment activities. Loading and unloading any equipment would occur on existing roads to minimize off-road disturbances and impacts.

Cattle have not grazed the allotment where the Fife and Stokes Flat projects occur for several years. An agreement to exclude grazing until objectives are met on the portion of the allotment within the Pine Reservoir Project would be established with the grazing permittee.

The treatment areas would be monitored before and after project implementation to determine success towards meeting resource management objectives. All monitoring techniques would follow BLM approved methods. The treatment areas would be monitored to ensure any potential noxious weeds and undesirable species infestations are controlled. If noxious weeds are found, they would be reported to the Ely District Office Weed Coordinator to be included on the treatment schedule as soon as possible.

## **2.2 Alternative Action**

The Alternative Action is to conduct chemical treatments using a pellet form of the herbicide Tebuthiuron (trade name Spike 20P) on 60 to 70 percent (approximately 540 – 630 acres) of the approximate 900 acre project areas.

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 current Nevada 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. All standard operating procedures and mitigation measures outlined in the *Final Programmatic Environmental Report for Vegetation Treatments on BLM Lands in 17 Western States* (2007) would be followed. 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. All directions for use on the label and 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.

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. Mitigation measures outlined on pages 2-41 and 2-42 of the *Final Programmatic Environmental Impact Statement – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007)* would be followed during all stages of the project.

Herbicide effectiveness of Tebuthiuron depends on the soil depth and texture and the amount of clay and organic matter content of the soil. Information from the most current soil survey would be utilized, or 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.

Vegetative monitoring, in order to determine treatment effectiveness, would be conducted in the same manner as identified under the Proposed Action.

No new roads would be constructed or created during project implementation. No off-road travel would occur during herbicide application (aerial application). Loading and unloading any equipment would occur on existing roads to minimize off-road disturbances and impacts. If determined necessary, signs would 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.

The Ely District Noxious Weed Prevention Schedule and mitigation measures identified in the Noxious and Invasive Weeds Risk Assessment would be adhered to during all phases of project implementation.

Aerial seeding would occur following treatment. The seed mixture would include perennial grass and forb species adapted to the ecological site. Species that could be used include, but are not limited to: Indian ricegrass (*Achnatherum hymenoides*), Sandberg and/or canby bluegrass (*Poa secunda*), western wheatgrass (*Pascopyrum smithii*), small burnet (*Sanguisorba minor*), and blue flax (*Linum perenne*).

### **2.3 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.

### **2.4 Alternatives Considered but Eliminated from Detailed Analysis**

Prescribed burning was considered but eliminated from detailed analysis because of the difficulty in keeping fire within the targeted treatment area (i.e. only where trees have encroached or in areas targeted for sagebrush density reduction) and the inability to prevent the burning of the existing shrub and grass understory, therefore, it would not meet the identified needs of the proposal.

### 3.0 DESCRIPTION of the AFFECTED ENVIRONMENT, POTENTIAL ENVIRONMENTAL CONSEQUENCES and CUMULATIVE EFFECTS

#### 3.1 General Description

The three proposed project areas occur within the Clover Creek South Watershed within the Clover Mountains: the Fife Flat project area is located within Township 5 South, Range 68 East, Sections 22, 23, and 24; the Stokes Flat project area is located within Township 6 South, Range 68 East, Sections 4 and 9 and the Pine Wash project area is located within Township 5 South, Range 68 East, Sections 24 and 25 and Township 5 South, Range 69 East, Sections 19 and 30; Mount Diablo Base and Meridian (Map 2 & 3). Elevations range from approximately 5,700 to 6,200 feet and slopes range from an estimated 2 to 10 percent. Annual precipitation levels average from approximately 12 to 14 inches. The primary vegetation within the project area consists of a sagebrush community with encroaching pinyon and juniper trees.

The following items have been evaluated for the potential for significant impacts to occur, either directly, indirectly or cumulatively, due to implementation of the proposed action. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely BLM in particular.

Resource/Concern	Issue(s) Analyzed ? (Y/N)	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Air Quality	N	Short-term increase in dust during implementation would not affect current air quality.
Cultural Resources	Y	The treatment areas would be inventoried and eligible cultural resources would be avoided or impacts mitigated.
Forest and Rangeland Health	N	The Mojave/Southern Great Basin Resource Advisory Council set the standards and guidelines for this resource. The Proposed Action does not conflict with this guidance. The project would assist with meeting the standards by restoring sagebrush communities.
Migratory Birds	N	Migratory Birds are present within the Clover Creek South Watershed. However, project implementation would occur outside of the breeding/nesting period.
Native American Religious Concerns	N	None present

FWS Listed or proposed for listing Threatened or Endangered Species or critical habitat.	N	None present
Wastes, Hazardous or Solid	N	No wastes are anticipated
Water Quality, Drinking/Ground	N	There are no water crossings or drinking water sources within the project. If tebuthiuron is applied (Alt. Action) it would take place with dry soil conditions and with no precipitation events forecasted in the near future to insure that the tebuthiuron stays in place.
Wilderness	N	Not within any wilderness area.
Environmental Justice	N	Not affected as no minority or low income populations are identified near or within the project vicinity.
Floodplains	N	There are no flood plains within the project areas.
Wetlands/Riparian Zones	N	None present.
Invasive Non-native Species	Y	Potential for the spread of weeds.
Special Status Animal Species, other than those listed or proposed by the FWS as Threatened or Endangered	N	None present
Wild Horses	N	Not within a herd management area.
Fish and Wildlife	N	Short-term displacement during project implementation is the only anticipated impact.
Vegetation	Y	Short term impacts, until next growing season or until seeded species become established.
Soils	Y	Short term impacts, until next growing season or until seeded species become established.
Special Designations other than Designated Wilderness	N	None present
VRM	N	Within Class 3 & 4 - the proposed action is in conformance with goals and objectives for VRM Class 3 & 4.
Grazing Uses	N	Cattle have not grazed the allotment where the Fife and Stokes Flat projects occur for several years. An agreement to exclude grazing until objectives are met on the portion of the allotment within the Pine Reservoir Project would be established with the grazing permittee.
Land Uses	N	Would not change existing land uses within the project areas.

Recreation Uses	N	Would not alter recreational uses in the area.
Paleontological Resources	N	None present
Water Resources (Water Rights)	N	None present
Mineral Resources	N	No mining claims are present.
Vegetative Resources (Forest or Seed Products)	N	Would not affect. Forest or Seed Products are also available outside of the project areas.

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

### 3.2 Vegetation

#### Affected Environment

The primary vegetation within the project area consists of a Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) community. Perennial grasses within the project area include species such as Indian ricegrass, needle and thread (*Stipa comata*), and bottlebrush squirreltail (*Sitanion hystrix*). Some cheatgrass (*Bromus tectorum*) does occur within the project area. Native shrubs include Wyoming big sagebrush, antelope bitterbrush (*Purshia tridentata*), and rabbitbrush (*Chrysothamnus sp.*). 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 single-leaf pinyon pine and Utah juniper. Pinyon and juniper is becoming established on sagebrush habitats within the proposed treatment area which are, historically comprised of native shrubs and grasses.

Tree density monitoring data was collected within the project area. Tree density measurements included all age classes of pinyon and juniper and averaged 14.5 trees per acre.

The proposed project area lies primarily within Ecological Site 029XY006NV, Loamy, 8-10 inch precipitation zone (ARTRW/ORHY-STCO4) (USDA, 1999). The potential vegetative composition of this ecological site is approximately 50 percent grasses, 5 percent forbs and 45 percent shrubs. Data collected on the sites averaged the following:

Existing Vegetative Composition*			Potential Vegetative Composition		
Grasses	Forbs	Shrubs	Grasses	Forbs	Shrubs
.4%	.19%	28%	50%	5%	45%

\*Based on cover.

## Potential Environmental Consequences

### Proposed Action

Reducing pinyon and juniper trees within the sagebrush ecological sites and crushing of the sagebrush should improve the health, vigor, recruitment and production of the sagebrush community, while also improving the health and vigor of the herbaceous understory. Summers (2005) reported that crushing Wyoming big sagebrush using a Lawson aerator in northern Utah reduced sagebrush canopy cover from 20% to 5%. Yet, two years post treatment, sagebrush leader lengths and seed stalk lengths were greater on treated sites than untreated sites indicating increased sagebrush vigor in response to crushing. Yeo (2009) indicated that Wyoming big sagebrush appears to be only briefly impacted by shrub crushing, cover was reduced about 3-fold by crushing, yet within four growing seasons post-treatment sagebrush cover was increasing.

The proposed treatments would help the project area meet FRCC 1 by reducing fuel loading and continuity, and establishing more perennial grass and forb species within the ecological site potential. Residual woody vegetation which would consist of slash/biomass created from aeration/crushing would provide protection to regenerating grasses and sagebrush. The decomposition of woody plant material would also provide nutrients that would decompose within the soil, and become available for understory and existing shrub species. This nutrient availability would assist with the recruitment, establishment and long-term viability of the grass and shrub community, as well as provide protection to the soil resource. Organic matter would minimize the opening of mineral cycles (particularly nitrogen) which promote the establishment and perpetuation of introduced annuals such as cheatgrass.

### Alternative Action

The primary difference between the Proposed Action and the Alternative Action is that vegetative response may occur at a slower rate due to the time required for the herbicide effects to occur. More standing woody vegetation is expected to remain under the Alternative Action for an undetermined period of time. The affected woody plants are expected to remain standing following the effects of the herbicide, until such time that standing dead plant material degrades and falls naturally. The residual woody vegetation would continue to provide some protective cover for wildlife species. Once the affected woody vegetation degrades and is no longer standing, some protection would be provided from grazing and browsing to the existing grasses and shrubs. As mentioned under the Proposed Action, the decomposition of woody plant material would also provide nutrients that would decompose within the soil, and become available for understory and existing shrub species. The Alternative Action would not provide protection for intense wildfire behavior for the short term, as dead needles would be present for approximately three to five years. Once needles drop, the potential for intense fire behavior would be reduced by eliminating the chance for crown fires. Fuel types which consist of standing tree canopy present a unique fire hazard with the potential for crown fires. Crown fires typically burn at higher wind speeds and are more difficult to control. Under dry

conditions and at high wind speeds, the possibility of total vegetative loss from intense wildfire is greater.

There is also a high probability of mortality to sagebrush and other shrubs as a result of effects of the herbicide. Mortality on sagebrush is generally high following the application of Spike. Mortality on deeper rooted shrubs such as antelope bitterbrush is generally much lower. Sagebrush is an important component of the primary ecological site within the project area and the use of Spike would likely result in a high mortality rate on sagebrush species. Sagebrush is also important for assisting with snow retention which reduces evaporation, increases overall ground water infiltration and aids in retaining more water for herbaceous species.

### 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 native perennial grasses and native shrubs would decline in the long-term due to a combination of factors including competition for nutrients, sunlight and water with older, decadent shrubs and the establishment of pinyon and juniper. 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.

### Cumulative Effects

Cumulative effects 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. The cumulative effect area for Vegetation would be the 147,876 acre Clover Creek South watershed. Past actions effecting vegetation resources include approximately 4,900 acres of wildfire, approximately 13,800 acres of habitat improvements, approximately 1,100 acres of wildfire rehabilitation, along with livestock, wild horse, wildlife use, land actions, and recreation activities. These activities have created varying ecological conditions. Implementing the Proposed Action, combined with past actions, could result in ecological conditions that meet site potential and mimic the natural disturbance regime. This would provide a mosaic of differing ecological conditions which would increase the vegetative communities' resiliency to future disturbances while reducing and minimizing cumulative effects associated with disturbances. The potential exists for future wildfire events and wildland fire use for resource benefits to occur, although it cannot be determined at this time how many could occur and acres that could be effected. With foreseeable wildfires, rehabilitation of these areas could also occur, although it cannot be determined at this time how many could occur and acres that could be effected. Presently, there is an additional 3,500 acres of fuels treatments/habitat improvement activities being considered that would affect vegetation within the watershed. The overall cumulative effects from all past, present

and future actions are expected to move the vegetation communities to a more natural range of variability.

### **3.3 Soils**

#### Affected Environment

The project areas occur in three different soil mapping units. The Stokes Flat project area occurs primarily in the Patter-Heist and Turba-Acti associations. The Fife Flat and the majority of the Pine Wash project areas occur primarily in the Acoma-Decan-Cath association. The Pine Wash project also occurs in the Brier-Acoma-Bellehelen association (USDA - NRCS, 2005).

The Patter-Heist association occurs from 5,200 to 6,000 feet in elevation and within the 10 inch precipitation zone. These soils occur on slopes from 0 to 8 percent and the soil association is comprised of loam and sandy loams that are well drained.

The Turba-Acti association occurs from 4,800 to 7,000 feet in elevation and within the 15 inch precipitation zone. These soils occur on slopes from 30 to 50 percent and the soil association is comprised of very gravelly sandy loam and very gravelly loam that are well drained.

The Acoma-Decan-Cath association occurs from 5,000 to 6,600 feet in elevation and within the 12 – 14 inch precipitation zone. These soils occur on slopes from 2 to 15 percent and the soil association is comprised of gravelly sandy loam and gravelly clay sandy loams that are well drained.

The Brier-Acoma-Bellehelen association occurs from 5,000 to 7,500 feet in elevation and within the 12 – 14 inch precipitation zone. These soils occur on slopes from 2 to 75 percent. The soil association is comprised of very stony loam, gravelly sandy loam and very stony loams that are well drained.

The project area is within Major Land Resource Area (MLRA) 29. The physiographic, climatic, soils and vegetative characteristics of these sites are outlined in USDA – NRCS (1999).

#### Potential Environmental Consequences

##### Proposed Action

There would be minimal soil erosion expected from implementation of the aeration treatment. Under the treatment, minimal to no impacts are expected to the existing grass and younger shrub communities which would remain on the site and provide for soil protection and stability. 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 the treatment would further promote soil health over the long term. Short term soils impacts from cross country travel during aeration operations would be limited due to the existing grass, younger shrubs and scattered material providing soil protection and stability. Soil compaction is also expected to be minimal because the aerator would break up the majority of any compaction that may occur. No new roads would be constructed or created during the treatments; therefore, future soil disturbance from vehicular travel should be limited.

### Alternative Action

Erosion potential would increase as the effects from the herbicide occur, as live vegetation foliage would not be able to intercept raindrop or overland flow impact. However, dead material would still be available to intercept raindrop or overland flow within the project area. Erosion impact potential should be minimal for the first few years, as live foliar vegetation would be removed at a slow rate over a period of time. 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.

### No Action Alternative

As trees continue to establish on sagebrush ecological sites, the perennial grass, forb, and shrub component would continue to diminish. Soils would be more vulnerable to erosion due to the absence of desirable, perennial grasses and native shrubs which provide much greater protection to soil. If a high intensity wildfire event occurs in the area, the soils would be more exposed and vulnerable to erosion in the short-term. In the long term, the regeneration of desired vegetation (perennial shrubs, grasses, and forbs) could be minimal due to the site being less resilient to this type of event resulting in continued erosion potential.

### Cumulative Effects

The cumulative effect area for Soils would be the 147,876 acre Clover Creek South Watershed. Past actions, effecting soil resources include approximately 4,900 acres of wildfire, approximately 1,100 acres of wildfire rehabilitation, and 13,800 acres of habitat improvements and other land use activities may have increased soil erosion on areas outside the proposed project area. Implementing the Proposed Action, could aid in reducing soil erosion through the improvement of the overall condition of vegetative communities, their resiliency to future disturbance and provide a mosaic of differing ecological conditions which would reduce and minimize cumulative impacts. The potential exists for future wildfire events and wildland fire use for resource benefits to occur, although it cannot be determined at this time how many could occur and acres that could be effected. With foreseeable wildfires, rehabilitation of these areas could also occur, although it cannot be determined at this time how many could occur and acres that could be effected. Presently, there is an additional 3,500 acres of fuels treatments/habitat improvement activities being considered that would affect vegetation within the

watershed. The overall cumulative impacts from all past, present and future actions are expected to be minimal.

### **3.4 Cultural and Historical Resource Values**

#### Affected Environment

Cultural resources sensitivity for the Project Area based on the sensitivity model (Drews and Ingbar, 2004) shows the project area to be mostly in the moderate range with areas of high and low cultural sensitivity.

#### Potential Environmental Consequences

##### Proposed Action

Cultural resources could be affected. There is a possible risk that mechanical equipment could damage or destroy some resources. However, this risk would be minimal as eligible sites would be avoided or mitigation measures would be implemented prior to conducting the proposed treatments to minimize the potential for impacts to eligible cultural resources and historic structures.

##### Alternative Action

Radiocarbon dating issues and concerns have risen from other consultation efforts regarding the effects of Tebuthiuron on cultural resources. Based on previous discussions and research for similar projects conducted by BLM Ely Field Office personnel, it has been determined that radiocarbon dating associated with rangeland treatment of Tebuthiuron on cultural resources had minimal affects. For the Alternative Action, there would be no cultural inventory conducted. However, Historic Properties and cultural sites would continue to be at high risk of wildfire, maybe more so as the vegetation changes occur following treatment over approximately a four-year period. Extensive dead, woody vegetation would be available and be susceptible to natural fire events with a potential higher than normal fire intensity during the first few years

##### No Action Alternative

There would be no immediate impacts to cultural properties. However, in the long term, the vulnerability for impacts with potential disastrous results to these resources could result. Historic properties and cultural resources could be destroyed by future wildfire due to a continued increase in dense vegetation.

##### Cumulative Effects

The cumulative effect area for Cultural and Historical Resource Values would be the 147,876 acre Clover Creek South Watershed. Past actions include approximately 4,900 acres of wildfire, 13,800 acres of habitat improvements and approximately 1,100 acres of

burn area rehabilitation and other land use activities. The inevitable vegetative changes could adversely impact cultural resources on a site-specific basis as pinyon and juniper increases and sagebrush/grass communities are reduced. The potential exists for future wildfire events to occur, although it cannot be determined at this time how many could occur and acres that could be effected. These wildfires tend to produce effects on fire sensitive cultural features over larger areas. The potential also exists for wildland fire use for resource benefits to occur although, it cannot be determined at this time how many could occur and acres that could be effected. Wildland fire use for resource benefits, if applied in thoughtful consideration of the known historical resource, could prolong the existence of most of these resources. Presently, there is an additional 3,500 acres of fuels treatments/habitat improvement activities being considered that would affect vegetation within the watershed. The overall cumulative impacts from all past, present and future actions are expected to be minimal.

### **3.5 Fire and Hazardous Fuels**

#### Affected Environment

The project areas are located within the Caliente Watershed & WUI Fire Management Unit (FMU) as described in the 2004 Ely District Fire Management Plan.

Historically, the Clover Mountain area and adjacent mountains were fire adapted. Fire played a regular disturbance role in the ecosystem. Fire exclusion has occurred throughout the west since Europeans arrived, which is thought to have affected the natural role of fire. Vegetation volume has increased, and vegetative composition has changed as a result of this natural disturbance alteration resulting in mature sagebrush with increasing dead to live woody material and decreasing understory grasses and forbs. Fires prior to European settlement once carried through fine fuels and created structural and age class diversity in sagebrush sites. According to Miller and Tausch (2001), infrequent fires in the past 130 years have allowed pinyon and juniper to establish on sagebrush sites. This fuel type presents a unique fire hazard as the potential for crown fire is higher. Crown fires typically burn at higher wind speeds and are more difficult to control. When this occurs, fires are usually stand replacing with crown fire domination. When fires occur with little wind, as when a high pressure system is in place over the area, fires will typically burn minimal trees.

Fire history and fire effects in the Great Basin are a vital component of resource health. There is evidence to support the existence of repeated wildland fires in eastern Nevada. It is not uncommon to find thin lines of charcoal exposed in arroyo cuts, marking episodes of prehistoric burning. Often, more than one episode is visible in the exposure. In the pinyon and juniper woodlands, ancient burned-out stumps can sometimes be found among mature stands of trees. The typical burn cycles for pinyon, juniper and sagebrush vegetation types vary from 15 to 50 years. The current burn cycle is about a 125 years. This has led to an accumulation of fuel loadings, increased stand densities and pushed the project area into higher fire regime condition classes.

## Potential Environmental Consequences

### Proposed Action

Fire behavior would be decreased as a result of reduced fuel loading and continuity. Future natural fires would be less extensive and smaller in size. Smaller wildfires would be easier to manage, reducing the risk to multiple natural resources, private lands, private withholdings, physical structures associated with Right-of-Ways and aesthetic values. The danger of large, uncontrolled wildfires would be reduced under this alternative. Implementation of the proposed project should bring the FRCC in the project area within the natural (historic) range.

### Alternative Action

The herbicide treatment would increase the amount of standing dead material and decrease the quantity of live fuel for the short-term. The increase in the quantity of standing dead material could potentially result in higher intensity burns in the area. The risk associated with this type of treatment would be the highest during the period prior to needle fall on the pinyon and juniper trees. The risk would be the lowest following needle fall and after a majority of the dead shrub branches have come in contact with the soil surface from physical forces and decomposition factors. The Alternative Action would result in higher fuel loads and higher intensity fires (if ignited) than the Proposed Action for at least a short-term period. In the long-term, impacts to fire behavior and fuel loading would be similar to that described under the Proposed Action.

Under the No Action Alternative, fuels would continue to increase which would also increase the burn intensity potential. The risk of a large, uncontrolled wildfire would remain much greater. If a wildfire does occur in the area, fuel loading and the associated fire intensity would be reduced. In comparison to the Proposed Action the No Action Alternative would result in the highest fuel loading and fire intensity potential in the long-term.

### Cumulative Effects

The cumulative effect area for Fire and Hazardous Fuels would be the 147,876 acre Clover Creek South Watershed. Past actions include approximately 4,900 acres of wildfire, approximately 13,800 acres of habitat improvements, and approximately 1,100 acres of wildfire rehabilitation have altered FRCC within the watershed. Implementation of the Proposed Action along with future wildfire events, wildland fire use for resource benefits, and fire rehabilitation would aid in achieving FRCC 1 within the watershed. Although, future wildfire events, wildland fire use for resource benefits, and fire rehabilitation are foreseeable it cannot be determined at this time how many could occur and acres that could be effected. Presently, there is an additional 3,500 acres of fuels treatments/habitat improvement activities being considered that would affect vegetation within the watershed. The overall cumulative impacts from all past, present and future actions are expected to be minimal.

### 3.6 Invasive, Non-Native Species (Including Noxious Weeds)

#### Affected Environment

The BLM defines a weed as a non-native plant that disrupts or has the potential to disrupt or alter the natural ecosystem function, composition and diversity of the site it occupies. A weed's presence deteriorates the health of the site, it makes efficient use of natural resources difficult and it may interfere with management objectives for that site. It is an invasive species that requires a concerted effort (manpower and resources) to remove from its current location, if it can be removed at all. "Noxious" weeds refer to those plant species which have been legally designated as unwanted or undesirable. This includes national, state, county and local designations.

For the Pine Wash project area, no field weed surveys were completed for this area. Instead the Ely District weed inventory data was consulted. While there are currently no known noxious weeds within the project area, the following species are found along some roads in the area:

<i>Acroptilon repens</i>	Russian knapweed
<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Lepidium draba</i>	Hoary cress
<i>Lepidium latifolium</i>	Tall whitetop
<i>Onopordum acanthium</i>	Scotch thistle
<i>Tamarix spp.</i>	Salt cedar

There is also probably red brome (*Bromus rubens*), 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 in 2004.

For the Stokes Flat project area, no field weed surveys were completed for this area. Instead the Ely District weed inventory data was consulted. While there are currently no known noxious weeds within the project area, the following species are found along some roads in the area:

<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Lepidium draba</i>	Hoary cress
<i>Lepidium latifolium</i>	Tall whitetop
<i>Onopordum acanthium</i>	Scotch thistle
<i>Tamarix spp.</i>	Salt cedar

There is also probably red brome (*Bromus rubens*), 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 in 2004.

For the Fife Flat project area, no field weed surveys were completed for this area. Instead the Ely District weed inventory data was consulted. While there are currently no known noxious weeds within the project area, the following species are found along some roads in the area:

<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Lepidium draba</i>	Hoary cress
<i>Lepidium latifolium</i>	Tall whitetop
<i>Onopordum acanthium</i>	Scotch thistle
<i>Tamarix spp.</i>	Salt cedar

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

### Potential Environmental Consequences

A Risk Assessment for Noxious and Invasive Weeds was completed for this Proposed Action and the risk rating for each area has currently been identified as Moderate which means that preventative management measures should be developed for the proposed project to reduce the risk of introduction or spread of noxious weeds into the area.

### Proposed Action

Noxious and non-native, invasive weeds which have been identified outside the proposed project area could become established or increase within the area. In areas with reduced levels of existing perennial grasses and forbs, cheatgrass or non-native, invasive species could establish or increase prior to the increase in desirable, perennial grasses, forbs and shrubs. New species could be introduced to the area as a result of vehicles, heavy equipment and activities associated with the use of the vehicles and equipment, even with the SOP which requires machinery is washed down prior to entering the site. However, conformance with the Ely District Noxious Weed Prevention Schedule and mitigation measures identified in the Risk Assessment for Noxious and Invasive Weeds would reduce the risk of noxious weeds and non-native, invasive species establishment.

### Alternative Action

There would be minimal to no surface disturbing activities which would reduce the potential for the spread of noxious and non-native, invasive weed species. Seeding would not be conducted until most of the treatment effects were realized. If minimal desirable, perennial grasses and forbs exist on areas which respond quickly to the herbicide application, this could potentially allow for the establishment of noxious weeds and invasive species weeds to establish. Areas with a rapid herbicide response and a delay in seeding could become vulnerable for noxious weed and invasive species establishment due to the exposed soil surface. However, it is expected that a majority of the treatment area would respond to the chemical in a timely manner and on an even scale which would allow for seeding to be conducted prior to the establishment of any noxious

weeds and most invasive species. The cheatgrass communities would likely make it more difficult for desirable, perennial herbaceous and shrub species to establish resulting in a continued decline in soil protection, wildlife habitat, ecological conditions and other resource values.

### No Action Alternative

Noxious weeds may eventually increase within the targeted treatment area, particularly along traveled roads. Declining understory species in sagebrush and woodland sites would increase the risk of noxious weeds and invasive species establishment following a natural disturbance (e.g., wildfire) due to the lack of competition from desirable, perennial grasses and forbs. Increasing the density of woodlands would also increase the size and effect of a potential wildfire, which indirectly would provide large areas for noxious weeds and undesirable species to establish following a wildfire event.

### Cumulative Effects

The cumulative effects area for Invasive, Non-Native Species (Including Noxious Weeds) would be the 147,876 acre Clover Creek South Watershed. Past actions include approximately 4,900 acres of wildfire, approximately 13,800 acres of habitat improvements, approximately 1,100 acres of wildfire rehabilitation, livestock and wild horse use; road construction and maintenance; recreation activities including off-highway travel, camping and hunting; fence construction; and rights-of-way construction. These activities have possibly resulted in unforeseen, yet undetected stands of noxious weeds. However, most past and all present and future actions within the cumulative effects area have and would have noxious and invasive weed prevention measures associated with them. In addition, these projects also have monitoring and weed treatment requirements. Once weed infestations are discovered, control actions have been initiated. Implementation of the proposed action along with the past activities which are expected to continue to some degree in the future could result in new stands of noxious weeds establishing. Once discovered control actions would be initiated on the stand. Implementing the Proposed Action would also improve the ability of the natural vegetation community to compete with and prevent noxious weed and invasive species establishment through the development of a more vigorous, diverse and productive perennial vegetative community. Monitoring activities associated with the proposed action could allow for early detection of weed species, which would improve treatment ability. Presently, there is an additional 3,500 acres of fuels treatments/habitat improvement activities being considered that would affect vegetation within the watershed. The overall cumulative impacts from all past, present and future actions are expected to be minimal.

## **4.0 PROPOSED MITIGATION MEASURES**

Design features have been incorporated into the Proposed Action and the Alternative Action; therefore no mitigation measures are necessary. Design features include considerations for cultural resources; noxious weeds and invasive species; and mining claims.

## **5.0 SUGGESTED MONITORING**

Monitoring has been incorporated into the Proposed Action. Monitoring has been implemented to establish baseline conditions and to measure the effects of the proposed treatments over a period of time. Monitoring information would be collected, analyzed and interpreted using BLM approved methods. Monitoring data would be available for review at the BLM Caliente Field Office.

## **6.0 CONSULTATION and COORDINATION**

### **A. Public Interest**

On December 19, 2007, a letter indicating the BLM's intent on initiating the planning process was mailed to individuals/groups who have expressed interest in participating in hazardous fuels reduction projects as well as state, county and federal agencies. An article was also placed in the Lincoln County Record (local newspaper) on January 3, 2008 soliciting input on the proposed project. The project was presented at the Native American Coordination meeting on March 19, 2009 with no concerns expressed.

Comments in the form of letters and e-mails were received from four individual/groups. One individual was soliciting further information about the project and another expressed to avoid chaining as a treatment option in Nevada. The proposed project does not suggest chaining as an option. One organization supported the proposed project and suggested the treated area be given at least two growing seasons without livestock use. Presently, due to current livestock management, fences, waters, and preferred forage areas livestock only use the Pine Wash treatment area. An agreement with the livestock permittee to defer grazing for at least two years would be included as part of the project design. Comments received from the final organization were generally related to other land uses not within the scope of the purpose and need for this project. Comments provided that were considered substantive included conducting surveys for all important and special status/sensitive species and vegetative description of the proposed project area. Information was included in this environmental assessment to address these comments.

**B. Internal District Review**

<u>Name</u>	<u>Title</u>	<u>Resources</u>
Kyle Teel	Fire Ecologist	Fire, Fuels, Vegetation
Alicia Styles	Wildlife Biologist	Wildlife, T&E/Sensitive species, Migratory Birds
Shirley Johnson	Rangeland Management Spec.	Livestock Grazing
Ben Noyes	Wild Horse and Burro Spec.	Wild Horses
Mark D'Aversa	Hydrologist	Soil, Water, Air, Riparian Floodplains
Kurt Braun	Archeologist	Cultural/Paleontological /Historical Res.
Bonnie Million	Noxious and Invasive Weeds Coordinator	Noxious Weeds, Invasive Species
Zach Peterson	Forester	Forest Resources,
Dave Jacobson	Wilderness Planner	Wilderness, Special Designations
Chris Linehan	Outdoor Recreation Planner	Recreation, VRM
Joe David	NEPA	Air Quality, Environmental Coordination
Elvis Wall	Native American Coordinator	Native American Religious Concerns & Tribal Coordination
Alan Kunze	Geologist	Minerals

## 7.0 REFERENCES

- Bedell, T. E., L. E. Eddleman, T. Deboodt, C. Jacks. 1993. Western Juniper: its impacts and management in Oregon rangelands. Oregon State University Extension Service. EC1417. 15 pp.
- Brockway, D. G. R. G. Gatewood and R. B. Paris. 2002. Restoring grassland savannas from degraded pinyon-juniper woodlands: effects of mechanical overstory reduction and slash treatment alternatives. *Journal of Environmental Management*. 74:179-197.
- Drews, Michael and Eric Ingbar. 2004. Technical Report: Cultural Resources Analysis and Probability Model for the Bureau of Land Management, Ely District. Gnomon, Inc. On file with the BLM, Ely District Office, Ely, Nevada.
- Miller, R.F.; Tausch, R.J. 2001. The role of fire in pinyon and juniper woodlands: a descriptive analysis. In: Galley, K.E.M.; Wilson, T.P., eds. Proceedings of the invasive species workshop: the role of fire in the control and spread of invasive species. Fire Conference 2000: the first national congress on fire ecology, prevention, and management. Miscellaneous Publication No. 11. Tallahassee, FL: Tall Timbers Research Station: 15-30.
- Summers, D.D. 2005. Vegetation response of a Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) community to six mechanical treatments in Rich County, Utah. M.S. Thesis, Brigham Young University, Provo, UT.
- Tausch, R.J. 1999. Historic Pinyon and Juniper Woodland Development. In: Proceedings: Ecology and Management of Pinyon/Juniper Communities Within the Interior West. Monsen, S.B. and Stevens, R. comps.
- Thurow, T. L. and J.W. Hester. 2005. How an increase or reduction in juniper cover alters rangeland hydrology. <http://texnat.tamu.edu/symposia/juniper/TOM2.htm>
- West, N.E. R. J. Tausch, P.I.T. Tueller. 1998. Management-oriented classification of pinyonjuniper woodlands of the Great Basin. U.S. Department of Agriculture, U.S. Forest Service. RMRS GTR-12.
- UDSA-NRCS, 1999. Major Land Resource Areas 29, Southern Nevada Basin and Range, Nevada Site Descriptions.
- UDSA-NRCS, 2005. Soil Survey of Lincoln County, Nevada, South Part.
- Yeo, 2009. Short-term Effects of Mechanical Shrub Treatment and Livestock Grazing Exclusion on Vegetation in a Native Wyoming Big Sagebrush Community, East-Central Idaho Technical Bulletin 2009-2, Bureau of Land Management.

## 8.0 Appendices

### **RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS**

#### **Stokes Flat Restoration Project Lincoln County, Nevada**

On March 24<sup>th</sup>, 2008 a Noxious & Invasive Weed Risk Assessment was completed for the Stokes Flat restoration project located on the eastern edge of the Clover Mountains in Lincoln County, Nevada. This 145 acre sagebrush area is located at Stokes Flat. The sagebrush is basically one age structure with limited understory. The proposed project would be to treat up to 80 percent of the area by pulling a roller chopper with a tractor over the sagebrush area in a mosaic pattern. The area would also be seeded at the same time the roller chopper is being utilized.

No field weed surveys were completed for this project. Instead the Ely District weed inventory data was consulted. While there are currently no known noxious weeds within the project area, the following species are found along some roads in the area:

<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Lepidium draba</i>	Hoary cress
<i>Lepidium latifolium</i>	Tall whitetop
<i>Onopordum acanthium</i>	Scotch thistle
<i>Tamarix spp.</i>	Salt cedar

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

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

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

For this project, the factor rates as Moderate (5) at the present time. Due to the heavy machinery use associated with this project, it is likely that the project activities will result in new weed infestations to the area, especially of non-native, invasive weeds such as cheatgrass.

**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.

Both options of this project rate as High (9) at the present time. If new infestations establish within the project area this could adversely impact those native plant communities since the proposed treatment areas are currently considered to be weed-free. Also, any increase of cheatgrass could alter the fire regime in the area.

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

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

For this project, the Risk Rating is Moderate (45). This indicates that the project can proceed as planned as long as the following measures are followed:

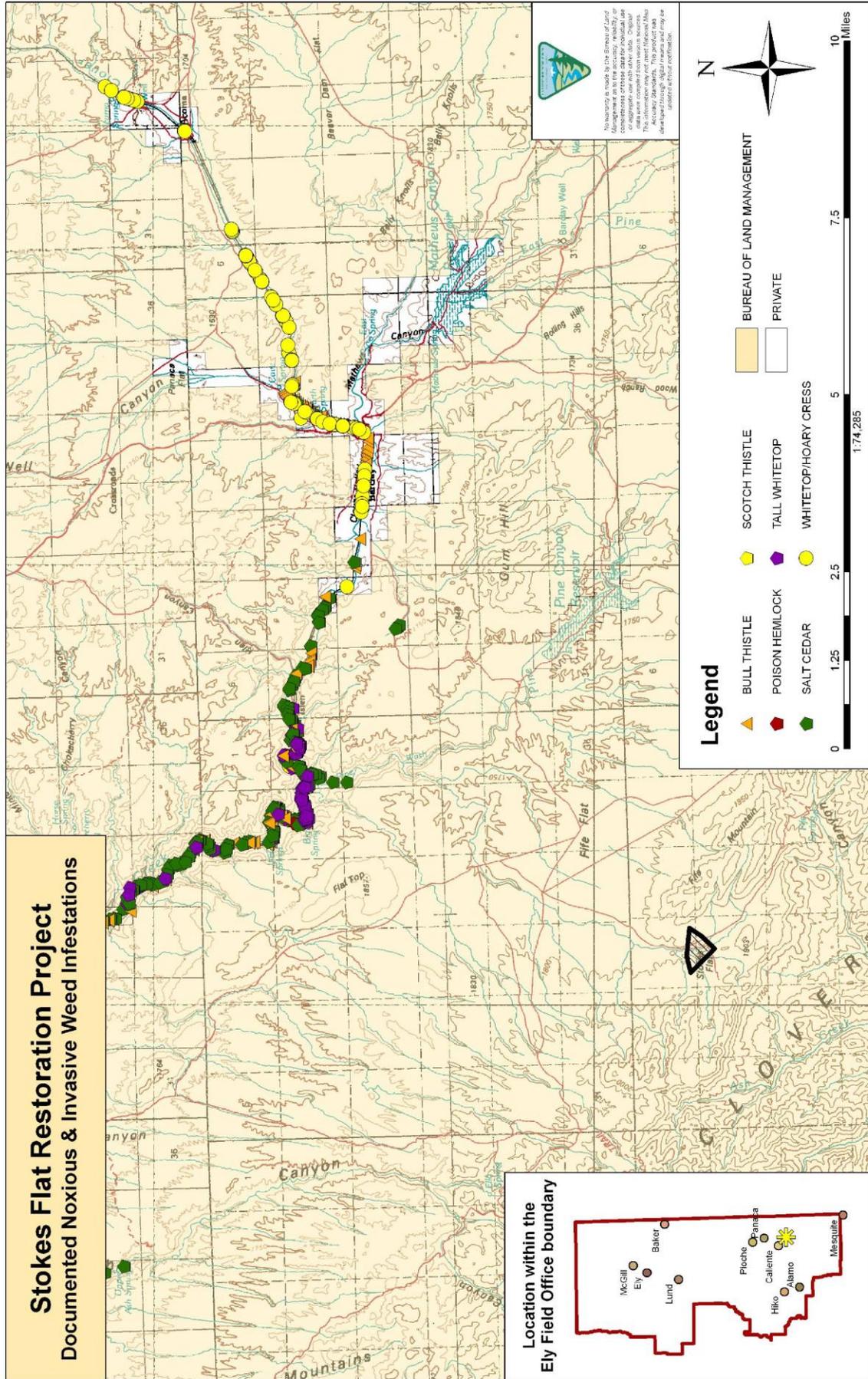
- Monitoring will be conducted for a period no shorter than three years and the spread of noxious weeds is noted, appropriated weed control procedures will be determined in consultation with BLM personnel and will be in compliance with the appropriate BLM handbook sections and applicable laws and regulations.
- 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.

- Removal and disturbance of vegetation would be kept to a minimum through construction site management (e.g. using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.)

Reviewed by: \_\_\_\_\_  
Bonnie Waggoner  
Ely District Noxious & Invasive Weeds Coordinator

\_\_\_\_\_  
3/25/2008  
Date

# Stokes Flat Restoration Project Documented Noxious & Invasive Weed Infestations



Location within the Ely Field Office boundary

# **RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS**

## **Fife Flat Restoration Project Lincoln County, Nevada**

On June 1, 2009 a Noxious & Invasive Weed Risk Assessment was completed for the Fife Flat restoration project located just below from the Pine Canyon Dam in Lincoln County, Nevada. This 145 acre sagebrush area is located at Stokes Flat. The sagebrush is basically one age structure with limited understory. The proposed project would be to treat up to 80 percent of the area by pulling a roller chopper with a tractor over the sagebrush area in a mosaic pattern. The area would also be seeded at the same time the roller chopper is being utilized.

No field weed surveys were completed for this project. Instead the Ely District weed inventory data was consulted. While there are currently no known noxious weeds within the project area, the following species are found along some roads in the area:

<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Lepidium draba</i>	Hoary cress
<i>Lepidium latifolium</i>	Tall whitetop
<i>Onopordum acanthium</i>	Scotch thistle
<i>Tamarix spp.</i>	Salt cedar

There is also probably red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomerus*), and Russian thistle (*Salsola kali*) scattered along roads in the area. The area was last inventoried for noxious weeds in 2003.

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

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

For this project, the factor rates as Moderate (5) at the present time. Due to the heavy machinery use associated with this project, it is likely that the project activities will result in new weed infestations to the area, especially of non-native, invasive weeds such as cheatgrass.

**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.

Both options of this project rate as High (9) at the present time. If new infestations establish within the project area this could adversely impact those native plant communities since the proposed treatment areas are currently considered to be weed-free. Also, any increase of cheatgrass could alter the fire regime in the area.

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

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

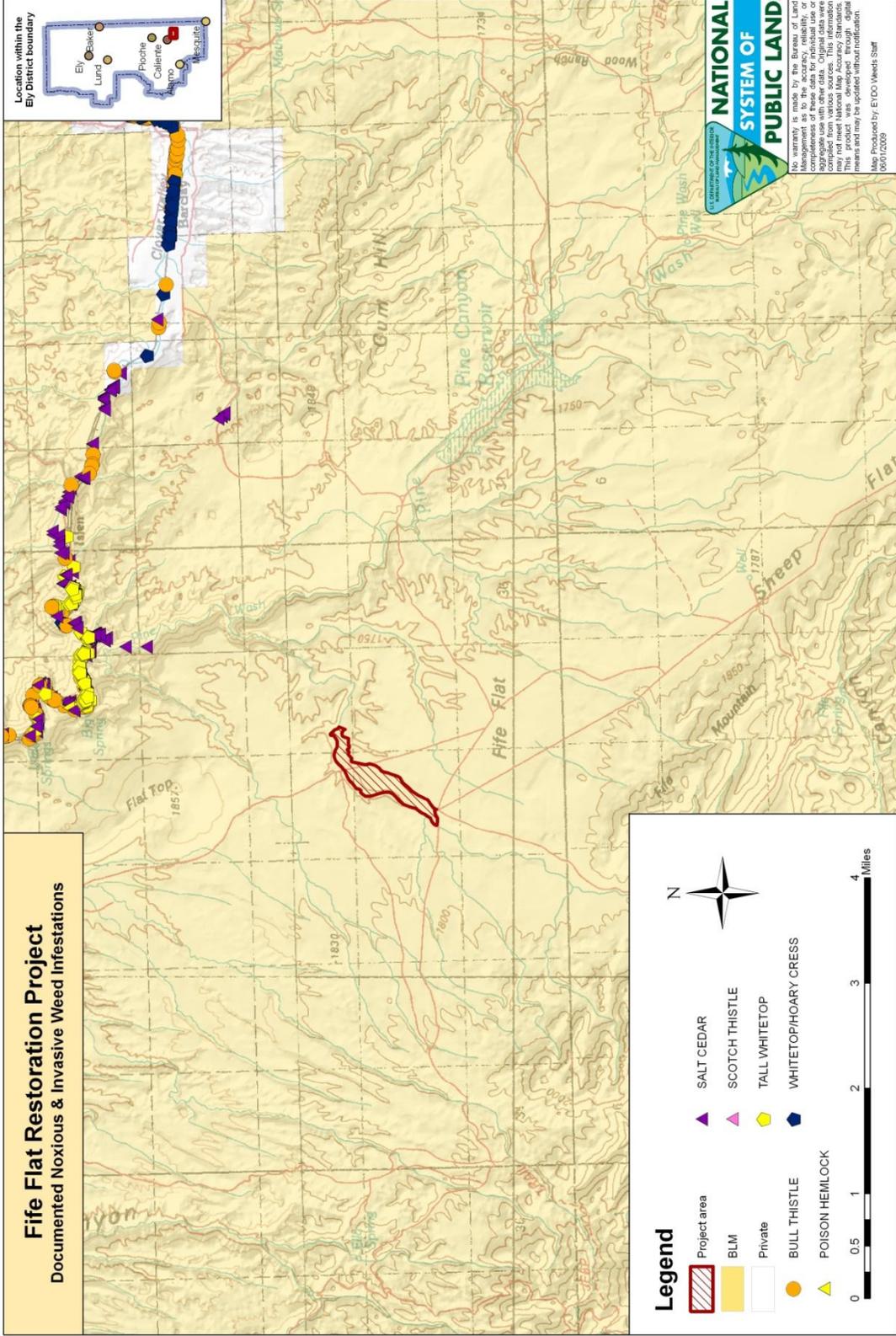
For this project, the Risk Rating is Moderate (45). This indicates that the project can proceed as planned as long as the following measures are followed:

- Monitoring will be conducted for a period no shorter than three years and the spread of noxious weeds is noted, appropriated weed control procedures will be determined in consultation with BLM personnel and will be in compliance with the appropriate BLM handbook sections and applicable laws and regulations.
- 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.

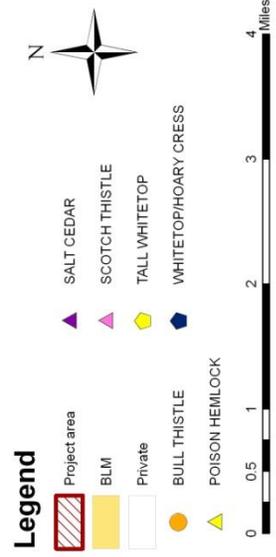
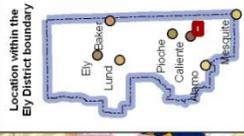
- Removal and disturbance of vegetation would be kept to a minimum through construction site management (e.g. using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.)

Reviewed by: \_\_\_\_\_  
Bonnie M. Million  
Ely District Noxious & Invasive Weeds Coordinator

06/01/2009  
Date



**Fife Flat Restoration Project**  
 Documented Noxious & Invasive Weed Infestations



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or aggregate use with other data. Original data were provided by the National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

Map Produced by: Ely DDO Weeds Staff  
 06/07/2009

# RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

## Pine Wash Restoration Project Lincoln County, Nevada

On March 24<sup>th</sup>, 2008 a Noxious & Invasive Weed Risk Assessment was completed for the Pine Wash restoration project located just below from the Pine Canyon Dam in Lincoln County, Nevada. This is a 600 acre sagebrush area where pinyon/juniper trees are beginning to move into the sagebrush from the surrounding area and the sagebrush is basically one age structure with limited understory. The proposed project would be to treat up to 80 percent of the area by removing the encroaching pinyon/juniper trees through mechanical and/or manual methods (chainsaw). The sagebrush would be treated by pulling a roller chopper with a tractor over the sagebrush area in a mosaic pattern. The area would also be seeded at the same time the roller chopper is being utilized.

No field weed surveys were completed for this project. Instead the Ely District weed inventory data was consulted. While there are currently no known noxious weeds within the project area, the following species are found along some roads in the area:

<i>Acroptilon repens</i>	Russian knapweed
<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Lepidium draba</i>	Hoary cress
<i>Lepidium latifolium</i>	Tall whitetop
<i>Onopordum acanthium</i>	Scotch thistle
<i>Tamarix spp.</i>	Salt cedar

There is also probably red brome (*Bromus rubens*), 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 in 2004.

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

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

For this project, the factor rates as Moderate (5) at the present time. Due to the heavy machinery use associated with this project, it is likely that the project activities will result in new weed infestations to the area, especially of non-native, invasive weeds such as cheatgrass.

**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.

Both options of this project rate as High (9) at the present time. If new infestations establish within the project area this could adversely impact those native plant communities since the proposed treatment areas are currently considered to be weed-free. Also, any increase of cheatgrass could alter the fire regime in the area.

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

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

For this project, the Risk Rating is Moderate (45). This indicates that the project can proceed as planned as long as the following measures are followed:

- Monitoring will be conducted for a period no shorter than three years and the spread of noxious weeds is noted, appropriated weed control procedures will be determined in consultation with BLM personnel and will be in compliance with the appropriate BLM handbook sections and applicable laws and regulations.
- 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.

- Removal and disturbance of vegetation would be kept to a minimum through construction site management (e.g. using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.)

Reviewed by: \_\_\_\_\_  
Bonnie Waggoner  
Ely District Noxious & Invasive Weeds Coordinator

\_\_\_\_\_  
3/24/2008  
Date

