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

Environmental Assessment NV-040-08-020
May 2008

Smith Valley Habitat Improvement and Fuels Reduction Project

Township 18 North, Range 62 East
Sections 23, 26, 27, 34, 35 and 36
Mount Diablo Meridian
White Pine County, Nevada

U.S. Department of the Interior
Bureau of Land Management
Ely District Office
Phone: (775) 289-1800
Fax: (775) 289-1910

TABLE OF CONTENTS

TABLE OF CONTENTS 2
1.0 BACKGROUND 3
1.1 Introduction 3
1.2 Need for the Proposal 4
1.4 Issues 9
2.0 DESCRIPTION of PROPOSED ACTION and ALTERNATIVES 9
2.1 Proposed Action 9
2.2 Alternative Action 11
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 13
3.1 General Description 13
3.2 Vegetation 13
3.3 Soils 16
3.4 Wildlife; Migratory Birds; Special Status Species (Federally Listed, Proposed or Candidate Threatened and Endangered Species); State Protected Species; BLM Sensitive Species 18
3.5 Riparian and Wetland Areas 20
3.6 Wild Horses and Burros 21
3.7 Livestock Grazing 21
3.8 Wilderness Values, Visual Resource Management and Recreation 23
3.9 Cultural, Paleontological and Historical Resource Values 25
3.10 Fire and Hazardous Fuels 26
3.11 Invasive, Non-Native Species (Including Noxious Weeds) 28
3.12 Water Quality 30
3.13 Air Quality 31
3.14 Land and Realty Uses 32
3.15 Commercial Products 33
3.16 Native American and Religious Concerns 34
4.0 PROPOSED MITIGATION MEASURES 35
5.0 SUGGESTED MONITORING 35
6.0 CONSULTATION and COORDINATION 35
7.0 REFERENCES 36

1.0 BACKGROUND

1.1 Introduction

The project area analyzed in this environmental assessment (EA) is located along the foothill benches along the west side of Smith Valley within the Smith Valley Watershed. The project area is located in Township 18 North and Range 62 East; Sections 23, 26, 27, 34, 35 and 36; Mount Diablo Meridian (MDM); White Pine County, Nevada (Map 1). The primary vegetation within the project area consists of sagebrush communities and established stands of pinyon and juniper. Perennial grasses occur at levels under site potential on a majority of the project area. The total project area perimeter includes approximately 1,318 acres, although only an estimated 60 to 70 percent of the total acreage (approximately 800 to 925 acres) within the boundary is targeted for treatment. 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 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 Smith Valley Habitat Improvement and Fuels Reduction Project responds to the fuels reduction element of the Cohesive Strategy.

1.2 Need for the Proposal

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 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). Reduced soil moisture and the competition of woody species for light, nutrients and moisture has resulted in reduced forage for wildlife, livestock and wild horses. Critical winter habitat and structural plant diversity needed by mule deer and other wildlife, continues to decline (Thurow, 2005; USGS, 2005). Additionally, on many woodland ecological sites, the natural diversity of successional stages has been changed toward a preponderance of mature even-aged stands which do not support a natural diversity of grasses, forbs and shrubs. Proper functioning ecological sites have a diversity of grasses, forbs, shrubs and trees and are essential to watershed integrity by stabilizing soils, promoting water infiltration and providing sufficient soil cover. A decline in the ecological condition of these plant communities adversely affects rangeland health, wildlife habitat, soil stability and other watershed values over the long-term. There is a need to restore ecological site conditions in order to improve a wide array of watershed values.

Key components of sage grouse habitat include adequate canopy cover of tall grasses and medium height shrubs for nesting, abundant forbs and insects for brood rearing and availability of riparian herbaceous species for late growing season forage (USDI-BLM, 2004). Management recommendations for the improvement and enhancement of sage grouse habitat include the control of pinyon and juniper establishment on sagebrush habitats with prescribed fire or mechanical methods (Commons et al. 1999, Miller and Rose 1999, USDI-BLM et al. 2000). There is a need to reduce the shrub and tree component and increase the herbaceous, understory species to meet sage grouse and other wildlife species habitat needs.

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 fuels (sagebrush semi-desert and pinyon/juniper woodlands) within the Smith Valley project area are in Fire Regime Groups II (LANDFIRE Biophysical Setting Models, 2006).

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.

Primarily all of the proposed project area has been rated at FRCC 3. 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. 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 each fuel type within the project area.

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

- Reduce pinyon and juniper establishment on sagebrush ecological sites in order to improve the overall vegetative composition within the ecological site potential and improve the health, vigor and production of perennial grass, forb and shrub species

- Improve the available habitat for neighboring sage grouse, mule deer and elk populations

- Reduce the risk of large, uncontrolled wild fires by reducing fuel loading and continuity within the Smith Valley Watershed and meet FRCC 1

- Restore the historic disturbance regime within the project area

Resource management objectives include the following:

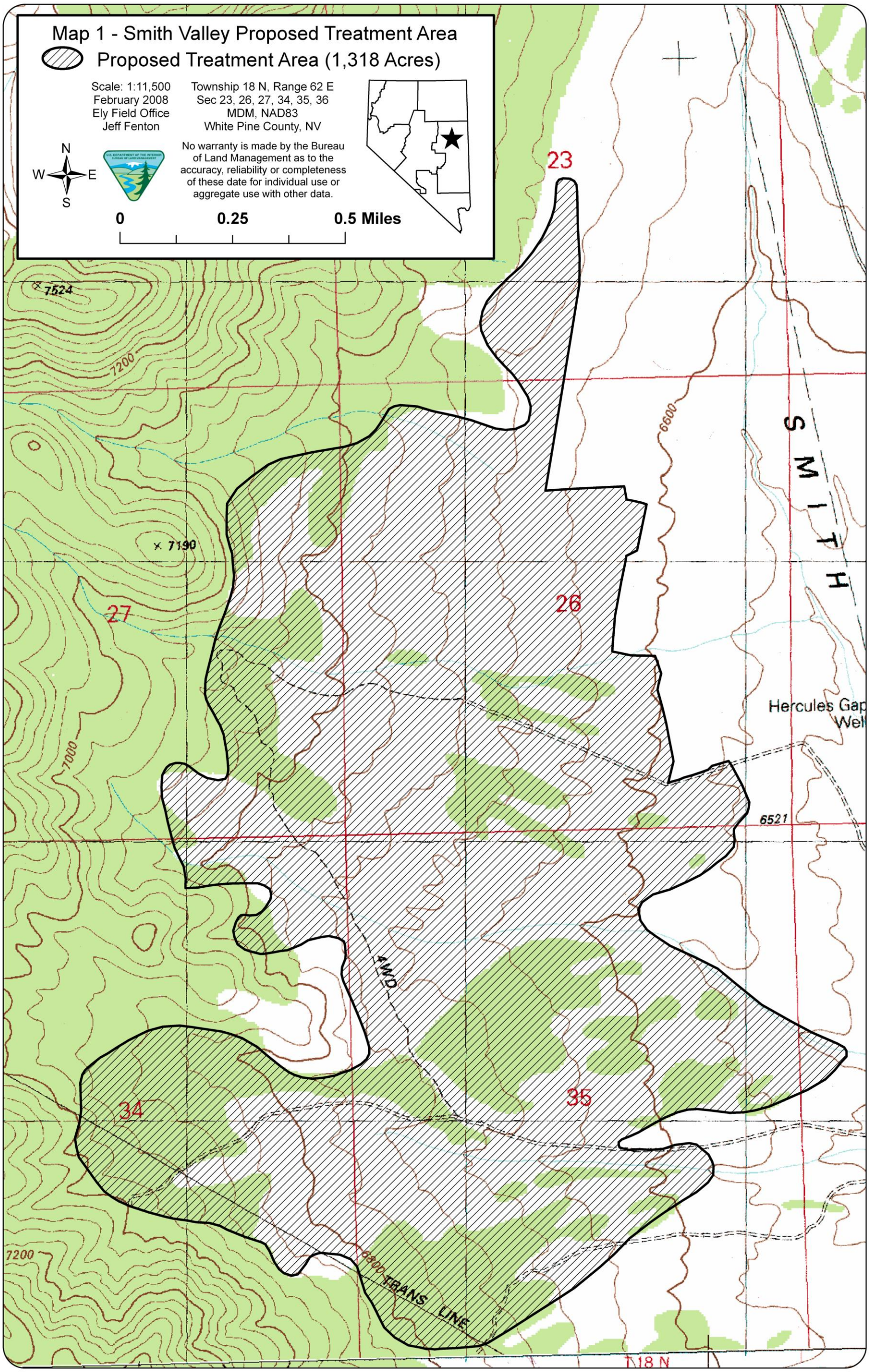
Short Term (immediately post treatment)

- Reduce the canopy cover of single-leaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) by at least 75 percent on black sagebrush (*Artemisia nova*) ecological sites on an estimated 60 to 70 percent (approximately 800 – 925 acres) of the 1,318 acre project area parameter

Long Term (5 to 10 years post treatment)

- Increase the percent composition by weight (lbs/acre) of perennial grasses to a minimum of 75 percent of the ecological site potential on black sagebrush ecological sites within 5 to 10 years following completion of the proposed treatments

The targeted areas for treatment would include those areas identified in the Smith Valley Watershed Evaluation conducted in 2005 where pinyon and juniper trees have become established on sagebrush ecological sites. The project would be completed when funding and resources become available.


Map 1 - Smith Valley Proposed Treatment Area
Proposed Treatment Area (1,318 Acres)
Scale: 1:11,500
February 2008
Ely Field Office
Jeff Fenton
Township 18 N, Range 62 E
Sec 23, 26, 27, 34, 35, 36
MDM, NAD83
White Pine County, NV
No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these date for individual use or aggregate use with other data.
N
W
E
S
0
0.25
0.5 Miles
23
26
27
34
35
7524
7200
7190
7000
6600
6521
SMITH
Hercules Gap
Well
4WD
6800 TRANS LINE
T18 N

1.3 Relationship to Planning

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

Egan Resource Management Plan (RMP) Record of Decision (ROD) (February 1987)

- Rangeland Management Resource Decision 5 (page 19) which states, "All vegetation will be managed for those successional stages which would best meet the objective of this proposed plan."

- Wildlife Resource Decision 1 (page 30) which states, "Habitat will be managed for reasonable numbers of wildlife species as determined by the Nevada Division of Wildlife."

- Wildlife Resource Decision 4 (page 30) which states, "Forage will be provided for reasonable numbers of big game as determined by the Nevada Division of Wildlife."

- Fire Management Resource Decision 1 (page 38) which states, "A resource area-wide fire management plan would be developed which allows a broad spectrum of uses …"

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

- Ely District Managed Natural and Prescribed Fire Plan (2000) Page 13 of the *Programmatic EA for the Ely District Managed Natural and Prescribed Fire Plan (2000)* states that the management goals are to reintroduce fire using managed natural and prescribed fire, to allow fire to resume a more natural ecological role within the Ely District in designated areas and to reduce wildfire suppression costs and acres requiring rehabilitation. Pages 13 and 14 also state that the vegetation management objectives are to manage for the desired plant community for each vegetative type. The proposed project area is within the Egan/Schell Watershed WUI Fire Management Units (FMU). The Proposed Action and Alternative Action are consistent with the resource objectives for these FMUs in that they support the use of prescribed fire and other treatments in order to enhance and improve rangeland health, forest health, habitat conditions and other watershed values through vegetative regeneration, establishment, species diversity and age-class diversity.

- 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 PEIS – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007). "Selection Criteria for Treatment Methods" identified in the Record of Decision for

Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (page 2-1) states in part, "The BLM will approve and use in 17 western states 14 herbicide active ingredients previous approved for use in BLM RODs (including Tebuthiuron) and for which an analysis of risks to humans and non-target plants and animals was conducted."

- Page 8 of the White Pine County Public Land Use Plan (May 1998) states, "Identify habitat needs for wildlife species, such as adequate forage, water, cover, etc. and provide for those needs so as to, in time, attain appropriate population levels compatible with other multiple uses as determined by public involvement."

- The White Pine County Elk Management Plan (March 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 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 121.

- Standards and Guidelines for Nevada's Northeastern Great Basin Area The Nevada Northeastern Great Basin Resource Advisory Council (RAC), as chartered by the Department of the Interior to promote healthy rangelands, has developed Guidelines for vegetation management on approximately 16.2 million acres of public lands administered by the Bureau of Land Management within the designated geographic area of the Northeastern Great Basin within the State of Nevada.

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 the resource conditions of soils, vegetation, wildlife habitat, noxious weeds and invasive species infestations, cultural resources and other land uses in the area.

2.0 DESCRIPTION of PROPOSED ACTION and ALTERNATIVES

2.1 Proposed Action

The proposal is to conduct tree thinning on selected areas along the west side of Smith Valley (Map 2). The targeted areas for treatment would include areas identified in the Smith Valley Watershed Analysis where pinyon and juniper trees have become established on sagebrush ecological sites. The total project area would include approximately 1,318 acres. An estimated 60 to 70 percent (approximately 800 to 925 acres) would be targeted for treatment.

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.

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 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 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 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.

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

If any mining sites or dumps are discovered within the project area, thinning operations would avoid these sites in order to minimize risk from hazardous materials.

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

Raptor nesting sites would be identified and protected in areas of the proposed vegetative manipulation. Treatment designs that would minimize impact to any occupied pygmy rabbit habitat would be incorporated. All treatment actions would comply with the *Ely District Policy Management Actions for the Conservation of Migratory Birds* (Instruction Memorandum NV-040-2008-050) or the most current policy at the time of the treatments.

No new roads would be constructed or created during project implementation. Off-road travel with heavy equipment would occur during tree thinning activities. 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.

Livestock grazing would not be scheduled within the treatment areas during thinning practices but could resume grazing once the thinning treatments were complete.

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 and point intercept for cover, belt transect with a macro-plot for density and photographs. The treatment areas would be monitored to ensure any potential noxious weeds and undesirable species infestations are controlled. If noxious weeds are found, suppression measures would be taken. The noxious weed infestations would be reported to the Ely Field Office Weed Coordinator in order to be included on the treatment schedule as soon as possible.

The only existing project which occurs within the proposed project area is the Romeo Allotment Fence. The Romeo Seeding occurs immediately adjacent to the proposed project area along the northeast portion and the Hercules Gap Well and a cattle guard occur outside the proposed project area to the east. Projects within the proposed treatment area would be inspected and repaired if damaged during implementation of the proposed treatments.

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 selected areas along the west side of Smith Valley (Map 3). The targeted areas for treatment would include areas identified in the Smith Valley Watershed Analysis where pinyon and juniper trees have become established on sagebrush ecological sites. The total project area would include approximately 1,318 acres. An estimated 60 to 70 percent (approximately 800 to 925 acres) would be targeted for treatment.

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 mitigation measures outlined in the *Final PEIS – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007)* will 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. 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 typically include a "no application" buffer zone of at least 100 feet from drainage bottoms and 300 feet around springs and perennial water sources, however, no water sources occur within the proposed project area.

Project design features as listed on pages 1-33 to 1-34 in the *Final Environmental Impact Statement for Vegetation Treatment on BLM Lands in Thirteen Western States* would be incorporated. The standard operating procedures and project design features adopted in the *Record of Decision for Vegetation Treatment on BLM Lands in Thirteen Western States* would be incorporated as additional project design features. The above incorporated project design features provide prescriptions for herbicide treatment along with appropriate mitigating measures. Mitigation measures outlined in the *Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States* would also 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 Field Office Noxious Weed Prevention Schedule and mitigation measures identified in the Risk Assessment for Noxious and Invasive Weeds would be adhered to during all phases of project implementation.

Following application, livestock grazing would be allowed to occur.

The project area would be inspected prior to the chemical treatment 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 in the same manner as identified under the Proposed Action.

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

One alternative considered was prescribed burning to thin or remove pinyon and juniper which has established on sagebrush sites. This alternative was eliminated from detailed analysis because of the difficulty in keeping fire within the targeted treatment area 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. Prescribed burning is an alternative which preferably would be utilized in situations where treatment areas occur on higher elevation north slopes.

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

3.1 General Description

The proposed project area occurs within the Smith Valley Watershed. The area is located in Township 18 North and Range 62 East; Sections 23, 26, 27, 34, 35 and 36; Mount Diablo Meridian (MDM); White Pine County, Nevada. The area is located along the mid and lower benches on the west side of Smith Valley. Elevations range from approximately 6,000 to 6,500 feet and slopes range from an estimated 2 to 15 percent. Annual precipitation levels average from approximately 10 to 14 inches. The primary vegetation within the project area consists of pinyon and juniper and sagebrush communities.

No wilderness areas, floodplains, waste (hazardous or solid), areas of critical environmental concern, wild and scenic rivers or prime or unique farmlands occur within the project area. No lower income or minority populations (environmental justice) would be disproportionately affected by the Proposed Action or any of the alternatives.

The affected environment is described below followed by the environmental consequences for each resource. Refer to the Smith Valley Watershed Evaluation (2005) for other resource information relevant to the project area.

3.2 Vegetation

<u>Affected Environment</u>

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

Native, perennial, cool-season [1] grasses within the project area include species such as Indian ricegrass (*Achnatherum hymenoides*), needle and thread (*Hesperostipa comata*), bottlebrush squirreltail (*Elymus elymoides*), sandberg bluegrass (*Poa secunda*) and bluebunch wheatgrass (*Pseudoroegneria spicata*). Warm-season [2] grasses are not common within the project area. 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*), rabbitbrush (*Chrysothamnus sp.*) and Nevada tea (*Ephedra nevadensis*). The primary tree species are single-leaf pinyon pine (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*).

There has been an overall reduction in the production and vigor of perennial, cool-season grasses within the proposed treatment areas. Pinyon and juniper is becoming established on sagebrush habitats within the proposed treatment area which are comprised of native shrubs and grasses.

Tree density monitoring data was collected at 3 sites within the project area boundary during March of 2008. Tree densities measurements included all age classes of pinyon and juniper and were recorded as follows:

Plot Number	Plot Location	Plot size	Tree Count	Trees/Acre
SV-1	T18N, R62E, Section 35	.34 acre	136	400
SV-2	T18N, R62E, Section 35	.47 acre	135	287
SV-3	T18N, R62E, Section 26	.81 acre	94	116

The proposed project area lies primarily within Ecological Site 028BY006NV (ARNO4/PSSP-ACHY) which is in a shallow, calcareous loam soil association in the 10 to 14 inch precipitation zone. The potential vegetative composition of this ecological site is approximately 60 percent grasses, 5 percent forbs and 35 percent shrubs and trees. Data collected during the Smith Valley Watershed Analysis (2005) within the proposed project area at Township 18 North, Range 62 East, Section 34 and Section 35 indicates the following:

	Existing Vegetative Composition			Potential Vegetative Composition		
Location	Grasses	Forbs	Shrubs/Trees	Grasses	Forbs	Shrubs/Trees
T18NR62E Section 34	6% (-54%)	9% (+4%)	85% (+50%)	60%	5%	35%
T18NR62E Section 35	15% (-45%)	11% (+6%)	74% (+39%)	60%	5%	35%

[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 (*Oryzopsis hymenoides*), crested wheatgrass (*Agropyron cristatum*), needle and thread (*Stipa comata*), bottlebrush squirreltail (*Sitanion hystrix*), 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 (*Hilaria jamesii*), blue grama (*Bouteloua gracilis*), bush muhly (*Muhlenbergia porteri*)] (American Society for Range Management, 1964).

Impacts

Under the Proposed Action, vegetative 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 to provide a more palatable and nutritional source of forage for livestock and wildlife and also protect the soil resource and other associated watershed values. Reducing the establishment of pinyon and juniper on sagebrush ecological sites would assist in improving ecological conditions 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 [3] native wildlife needs when at ecological site potential. 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 succession [4]. 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 scattered trees from felling would provide protection to regenerating grasses. Felled and scattered trees 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 Smith Valley Watershed in conforming with 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 Alternative Action, the primary difference is that vegetative response may occur at a slower rate than the proposed action 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 grasses and shrubs which have established. As mentioned under the Proposed Action, 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 Alternative Action would not provide protection for intense wildfire behavior for the short term, as dead needles would be present for approximately 3 to

[3] endemic restricted or peculiar to a locality or region
[4] succession change in the vegetative composition of an ecosystem due to plant response from human-induced impacts and natural changes in the environment

5 years. Once the 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.

Conformance with the Standards and Guidelines for Nevada's Northeastern Great Basin and the Fundamentals of Rangeland Health (Title 43 CFR 4180) would be expected within the treatment areas under the Alternative Action.

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 native and non-native, perennial grasses and native shrubs would decline in the long-term due to a combination of factors including potential overgrazing 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. The No Action Alternative may also eventually prevent portions of the allotments within the project area from conforming with the Standards and Guidelines for Nevada's Northeastern Great Basin and the Fundamentals of Rangeland Health (Title 43 CFR 4180).

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 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. Implementing the Proposed Action, Alternative Action or a combination thereof, combined with present and future actions, would improve 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.

3.3 Soils

Affected Environment

The primary soil mapping units within the project area include the Cassiro-Fax-Belmill Association and the Palinor-Urmafot-Palinor, Steep Association (USDA - NRCS, 1997).

The Cassiro-Fax-Belmill Association occurs from 6,200 to 7,500 feet in elevation and within the 10 to 12 inch precipitation zone (PZ). These soils occur on slopes from 2 to 8 percent. The soil association is comprised of stony loams, very cobbly coarse sandy loams and gravelly sandy loams. These soils have moderate to moderately slow permeability [5] and have medium runoff potential.

The Palinor-Urmafot-Palinor, Steep Association occurs from 6,500 to 7,500 feet in elevation and within the 10 to 12 inch PZ. These soils occur on slopes from 4 to 50 percent. The soil association is comprised of gravelly loams to very gravelly loams. These soils have moderate permeability and have medium to rapid runoff potential.

The project area is within Major Land Resource Area (MLRA) 28B. 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 minimal soil erosion expected from implementation of the thinning treatments. The thinning treatments would target pinyon and juniper trees which have established on sagebrush ecological sites. Under the thinning treatment, 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. The recruitment and establishment of perennial grasses and native shrubs following both the thinning treatments would further promote soil health over the long term along with assisting the ecological sites in achieving site potential. Over the long term, standing plant density is expected to increase and plant biomass or litter is expected to increase which will stabilize and protect the soil resource. No new roads would be constructed or created during the treatments, therefore, future soil disturbance from vehicular travel should be limited.

Under the Alternative Action, erosion potential would increase as the effects from the herbicide occur, as vegetation would not be able to intercept raindrop or overland flow impact. Erosion impact potential should be minimal for the first few years, as vegetation would be removed at a slower 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. Once perennial grasses and native shrubs have increased on the treated sites, erosion and runoff potential is expected to be minimal.

Under the No Action Alternative, current erosion rates would continue until such time that an uncontrolled wildfire occurs. If trees continue to establish on sagebrush ecological sites, the perennial grass and shrub component would continue to be reduced. Following an uncontrolled wildfire event which removes a majority of the vegetation on site, the soils would be more exposed and vulnerable to water events. Grasses and shrubs regenerate at a much faster rate than tree species. If the grass and shrub component continues to be reduced over time and a high intensity wildfire event occurs in the area, regeneration from vegetation would be minimal after a fire and the likelihood of cheatgrass establishment becomes much greater. Soils would be more vulnerable to erosion due to the absence of desirable, perennial grasses and native shrubs which provide much greater protection to soils than undesirable annuals due to root depth and longevity. Higher erosion rates would occur and increased

[5] permeability The movement of water and air through the soil which is affected by all soil characteristics such as texture, structure and consistence (Land Judging in Oklahoma, 1979).

potential for gully formation. Sedimentation in lower drainage areas is expected to occur under such a situation.

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 would persist. 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.

3.4 Wildlife; Migratory Birds; Special Status Species (Federally Listed, Proposed or Candidate Threatened and Endangered Species); State Protected Species; BLM Sensitive Species

Affected Environment

The Smith Valley Watershed is within the Butte Valley Sage Grouse Population Management Unit (PMU) and has 4 known sage grouse leks. None of the leks are located within the proposed project area. There are 28,000 acres of nesting habitat; 36,996 acres of summer habitat and 27,945 acres of winter habitat within the Smith Valley Watershed.

There are 501 acres of pronghorn antelope habitat within the Smith Valley Watershed, none of which are crucial habitat.

There are a total of 35,573 acres of elk habitat within the Smith Valley Watershed, none of which are crucial habitat.

There are 21,004 acres of mule deer habitat in the Smith Valley Watershed, none of which are crucial habitats.

Migratory bird species of concern in sagebrush habitat include sage thrasher, Brewer's sparrow and sage sparrow. All of these species are common in Nevada and have a probability of being found within the proposed project area. Large expanses of sagebrush communities in good condition are favored by all three species, but especially the sage thrasher. Migratory bird species of concern in pinyon/juniper habitat include pinyon jay, juniper titmouse, black-throated gray warbler and gray vireo. All of these species are common in Nevada and have a probability of being found within the proposed project area. The pinyon jay, juniper titmouse and black-throated gray warbler prefer dense stands of pinyon/juniper woodlands. The gray vireo prefers open pinyon/juniper woodlands.

There are no federally listed, proposed or candidate threatened or endangered species found within the proposed project area. No known raptor nesting sites are located within the proposed project area. The sage grouse is a BLM sensitive species that may utilize sagebrush habitat within the proposed project area.

Impacts

Under the Proposed Action, there would be an overall net benefit to mule deer, elk, pronghorn antelope and sage grouse populations within the project area by improving vegetative production, regeneration, diversity and vigor. Reducing pinyon and juniper trees on sagebrush sites, improving the production of perennial grasses and improving the vigor of forbs and shrubs would favor the sage thrasher, Brewer's sparrow and sage sparrow. There would be little to no effect on pinyon jay, juniper titmouse and black-throated gray warbler populations since the proposed treatments would occur on sagebrush ecological sites and there are many acres of dense pinyon/juniper woodlands in the mountains adjacent to the proposed project area. The proposed action would benefit the gray vireo since it prefers open pinyon/juniper woodlands. Ecological conditions should be improved and progress towards the potential natural community. There would be a net overall increase in perennial grasses and regeneration in the existing forb and 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 benefit wildlife populations by allowing for greater vegetative diversity, diverse age-class distribution and a patchiness effect which provides thermal and protective cover.

Implementation of the Proposed Action is expected to benefit wildlife populations, the associated habitat conditions and assist the Smith Valley Watershed 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, there would also be an overall net benefit to mule deer, elk, pronghorn antelope and sage grouse populations within the project area by improving vegetative production, regeneration, diversity and vigor as mentioned under the Proposed Action. There would be a net overall increase in perennial grasses and regeneration in the existing forb and 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 potential natural community should be achieved.

Progress towards meeting the objectives is expected to occur at a less rapid rate than under the Proposed Action.

Implementation of the Alternative Action is also expected to benefit wildlife populations, the associated habitat conditions and assist the Smith Valley Watershed in conforming with Rangeland Health Standard 3 (Habitat) as mentioned above 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 a 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. The desired range of conditions suggests that approximately 22 percent of these communities should be in the shrub dominant state and 72 percent in the herbaceous dominant state. This type of condition would afford habitat resilience and meet habitat needs for sagebrush obligates. Under the No Action Alternative, conformance with Rangeland Health Standard 3 is not expected to be met over the long-term within the proposed project area.

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; uncontrolled wildfire and rights-of-way construction 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 species such as sage grouse; raptors; pygmy rabbits; migratory birds and threatened, endangered and special status species would help to reduce overall impacts to the species.

3.5 Riparian and Wetland Areas

No known water sources are located within the proposed project area.

3.6 Wild Horses and Burros

The proposed project area is not within a wild horse Herd Management Area (HMA).

3.7 Livestock Grazing

Affected Environment

The project area lies within portions of the Georgetown Ranch No. 00422 and Heusser Mountain No. 00416 grazing allotments. The permitted grazing use on these allotments is as follows:

Georgetown Ranch Allotment No. 00422

Livestock	Season of Use	Scheduled AUMs	Preference (AUMs)		
			Active	Suspended	Total
Cattle	3/1-5/31 10/1-11/30	1,675	1,675	0	1,675

Heusser Mountain Allotment No. 00416

Livestock	Season of Use	Scheduled AUMs	Preference (AUMs)		
			Active	Suspended	Total
Cattle	3/1-3/31 5/1-2/28	1,486	1,486	447	1,933

The permittee on the Georgetown Ranch Allotment is William Hayward. The primary use on the allotment is spring and fall cattle use.

The permittee on the Heusser Mountain Allotment is WCSD Corporation. The primary use on the allotment is yearlong except for the month of April.

The only existing range improvement project which occurs within the proposed project area is the Romeo Allotment Fence. The Romeo Seeding occurs immediately adjacent to the proposed project area along the northeast portion and the Hercules Gap Well and a cattle guard occur outside the proposed project area to the east.

Impacts

Under the Proposed Action, rangeland conditions are expected to improve following implementation of the proposed vegetation treatment. 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 thinning of established pinyon and juniper trees on sagebrush ecological sites would assist in improving ecological conditions 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 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 potential natural community. 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.

Implementation of the Proposed Action would eventually improve overall livestock distribution throughout the allotment due to an increase in the quantity and quality of grasses and other herbaceous forage which are important to livestock grazing. The Georgetown Ranch and Heusser Mountain allotments support a traditional and historical lifestyle for livestock permittees in the Smith Valley Watershed. The permittees are dependent on these allotments to help generate a portion of their annual income. Livestock would not be allowed within the proposed project area while thinning treatments were being conducted, however, livestock grazing use would be allowed to resume once the thinning treatment was completed. The treatment area only comprises 953 acres or 3 percent of the 29,455 acre Georgetown Ranch Allotment and 365 acres or 1 percent of the 36,614 acre Heusser Mountain Allotment, therefore, impacts to the permittees' grazing systems should have minimal to no effects. Implementation of the Proposed Action should assist in mitigating any potential future conflicts among livestock and wildlife.

Under the Alternative Action, livestock grazing distribution would be improved very similar to those impacts described above under the Proposed Action. As mentioned under the Proposed Action, no reduction or increase in livestock permitted use would occur as a result of increased forage availability from the project. The potential for meeting vegetation objectives through herbicide application (Alternative Action) is expected to be similar to the thinning treatment (Proposed Action). The short term impacts and long term resource benefits are also expected to be very similar.

Impacts to the permittees' grazing schedules would be very minimal under the Alternative Action. The period of time in which livestock would not be allowed on the proposed treatment area would only be estimated at one day, as the aerial application of Spike is not expected to take more than one day. Livestock grazing could resume as soon as the Spike pellets are applied.

Under the No Action Alternative, there would be no short term impacts to the current livestock grazing on the Georgetown Ranch and Heusser Mountain 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 and wildlife 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. With continued forage decline, adjustments to the permitted grazing use would likely be required which would financially impact the grazing permittees over the long term. Conformance with Standard No. 1 of the Standards

and Guidelines for Nevada's Northeastern Great Basin Area and the Fundamentals of Rangeland Health (Title 43 CFR 4180) would likely not be met due to the continued declines in the quantity and quality of herbaceous vegetation and preventing those ecological sites from achieving the potential natural community.

The No Action Alternative is expected to eventually reduce overall livestock grazing distribution and affect the economic stability to some degree of the permittees due to a reduction in the quantity and quality of grasses and other herbaceous forage which are important to livestock and wildlife. With a reduction in the production and vigor of herbaceous plant communities, the forage base may not eventually adequately support the existing herd sizes. The Georgetown Ranch and Heusser Mountain allotments support a traditional and historical lifestyle for the permittees in Smith Valley. The permittees are dependent on the allotments to help generate a portion of their annual income. There would be no impacts to the permittees' grazing schedules under the No Action Alternative. It is expected that forage availability within the proposed project area would decline over the long term.

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, if any.

3.8 Wilderness Values, Visual Resource Management and Recreation

Affected Environment

No special wilderness designations occur within the proposed project area. Recreational opportunities within the area include hunting, wildlife viewing, off-highway vehicle use, permitted motorcycle races and horseback riding. Recreation use is moderate and is primarily associated with dispersed use from the adjacent local communities of Ely and Cross Timbers. Disturbances in the area include primary roads, primitive roads, trails, powerlines and disturbances associated with mining and mineral exploration. The project area occurs within Visual Resource Management (VRM) Class III and Class

IV zones. A VRM Class III zone includes areas where contrasts to the basic elements caused by a management activity may be evident, but should remain subordinate to the existing landscape. A VRM Class IV zones includes areas where contrasts may attract attention and be a dominant feature of the landscape in terms of scale, but should repeat the form, line, color and texture of the characteristic landscape (BLM 2003).

Impacts

Under the Proposed Action, there would be no adverse impacts anticipated to visual resources from the thinning activities. All actions under the Proposed Action would comply with BLM VRM Design Procedures in BLM Manual 8400. In the long term, restoration to proper functioning ecological sites would improve visual resources within the project area. Recreation opportunities may be limited for the short term during the treatment phase. There would be an increase in vehicular traffic in the area during the treatment phase possibly resulting in more encounters with other groups during a typical recreational outing. This would be for a short time period and temporary in nature. Thinning activities may lead to future cross country travel by reducing vegetation barriers to vehicles and providing easily obtainable firewood. Posting signs along roads within or adjacent to the treatment areas in regards to travel restrictions would assist in mitigating impacts from future cross country travel. Once desirable vegetation has re-established, hunting opportunities and wildlife viewing opportunities would be improved due to the increase in palatable forage for wildlife species such as mule deer, elk and sage grouse. Sufficient vegetation for thermal cover and protection would remain around the parameter of the proposed thinning treatment area.

Under the Alternative Action, direct impacts to visual resources would include stands of dead sagebrush and pinyon and juniper as the result of the herbicide application. All actions under the Alternative Action would comply with BLM VRM Design Procedures in BLM Manual 8400. The application of herbicides would not result in temporary or long term limitations on recreation opportunities within the project area. There would be an increase in vehicular traffic in the area during the treatment phase possibly resulting in more encounters with other groups during a typical recreational outing. This would be for a short time period and temporary in nature. It is not anticipated that increases in cross country travel would occur over the short term. Over the long term, the potential for cross country travel may increase once dead woody plant material decomposes or is removed through the use of biomass. However, posting signs along roads within or adjacent to the treatment areas in regards to travel restrictions would assist in mitigating impacts from future cross country travel. Over the long term, hunting opportunities and wildlife viewing opportunities for mule deer, elk and sage grouse would be improved due to an overall improvement in habitat conditions.

Under the No Action Alternative, the failure to restore the proposed treatment area to proper functioning ecological sites would impact visual resources over the long term. Impacts to recreational opportunities such as hunting and wildlife viewing would be impacted in the long term due to declining habitat conditions for mule deer, elk and sage grouse. The potential also exists for impacts to visual resources and other recreational opportunities within the proposed project area in the long term if an uncontrolled wildfire were to occur. There would be no increase in personnel or vehicular traffic in the area associated with the project. The No Action Alternative would reduce the potential for an increase in cross country travel within the area.

Cumulative Impacts

Cross country vehicular travel within the proposed project area does not appear to be an issue from the past. The Proposed Action and Alternative Action may contribute to impacts of future cross country vehicular travel by allowing for easier access by removing existing vegetative barriers. Future actions such as implementation of the new Ely District Resource Management Plan (RMP) followed by the development of travel management plans would help eliminate cross country vehicular travel. Recreational opportunities such as hunting and wildlife viewing have also occurred within the project area for several years. Present vegetation treatments combined with future vegetation treatments would improve overall habitat conditions for wildlife and promote better hunting and wildlife viewing opportunities over the long term.

3.9 Cultural, Paleontological and Historical Resource Values

Affected Environment

Limited historical documentation is known to exist within the proposed project area which suggests that the area may not have been a historically important development of eastern Nevada except for possible agricultural purposes such as livestock grazing.

Impacts

Under the Proposed Action, cultural and historic resources could be affected, however, due to the necessary cultural clearances and reporting requirements, it is unlikely these resources would be impacted if discovered during thinning operations. There would still be some possible risk that mechanical equipment could damage or destroy some resources, however, this risk would be minimal as mitigation measures would be implemented prior to conducting the proposed thinning treatment in order to minimize the potential for impacts to eligible cultural resources and historic structures. Since there would be no prescribed burning, fire sensitive resources would not be at risk. As aforementioned, all eligible cultural resources would be avoided or impacts mitigated as necessary before the surface disturbing mechanical thinning treatments were initiated.

Under the 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. Since there would be no prescribed burning, fire sensitive resources would not be at risk. 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.

Under the 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. In addition, the increase of dense vegetation such as sagebrush and pinyon and juniper trees reduces the understory species and impacts cultural sites by increasing their vulnerability to erosion during heavy rain events.

The Proposed Action and Alternative Action would conform with Rangeland Health Standard 4 (Cultural Resources) which states the following:

"Land use plans will recognize cultural resources within the context of multiple use."

Cumulative Impacts

Extreme wildfires threaten the entire complex of cultural resources (fire sensitive and non-fire sensitive type sites) for an area. Future fuels treatments for resource benefits, if applied in thoughtful consideration of the known historical resources, could prolong the existence of most of these resources. The inevitable vegetative changes in Smith Valley could adversely impact cultural resources on a site-specific basis as pinyon and juniper increases and sagebrush/grass communities are reduced. Planned activities such as fuels treatments have overall beneficial effect on cultural resources by protecting the resources before a large, uncontrolled wildfire or erosion events occur. A wildfire proposes the opposite side of the spectrum in its unplanned randomness and tendency to produce effects on fire sensitive cultural features over larger areas.

3.10 Fire and Hazardous Fuels

Affected Environment

The proposed project area is within the Egan/Schell Watershed WUI Fire Management Unit (FMU).

Historically, the Smith Valley 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.

Impacts

Under the Proposed Action, fire behavior would be decreased as a result of reduced fuel loading. Future natural fires within the proposed project area 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 ROWs and aesthetic values. The danger of large, uncontrolled wildfires would be reduced under this alternative. Under the Proposed Action, the FRCC should be within the natural (historic) range. Studies have shown that fuels treatments conducted prior to a large, uncontrolled fire event reduce fire burn severity and extreme fire behavior. These treatments modify stand structure and extreme wildfire behavior. In a report written by the Apache-Sitgreaves National Forest in 2002 titled, "Rodeo-Chediski Fire Effects Report", studies showed the lessening of burn severity on treated areas prior to a wildfire burning through the area.

Under the 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, fuel conditions would continue to increase and accumulate beyond levels representative of the natural (historic) fire regime which would 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 and Alternative Actions, the No Action Alternative would result in the highest fuel loading and fire intensity potential in the long-term.

Cumulative Impacts

The potential exists for future wildfire events in the area, as does additional habitat and fuels management activities. With planned disturbances such as future habitat improvement and fuels reduction projects through chemical, mechanical and prescribed fire opportunities for reducing the risks of large, uncontrolled wildfire will be possible. Overall, cumulative impacts from all past, present and future actions would be minimal and FRCC I would be achieved over the long term.

3.11 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.

There are currently no noxious weed infestations documented within the project area boundary. Species which have been document outside the project boundary are primarily to the east along the county road and include bull thistle (*Cirsium vulgare*), musk thistle (*Carduus nutans*) and whitetop/hoary cress (*Lepidium draba*). Although not yet mapped, cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomerus*), bur buttercup (*Ranunculus testiculatus*) and Russian thistle (*Salsola kali*) are non-native, invasive species which also occur within and around the proposed project area.

Impacts

Under the 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 other noxious 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. 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. If sufficient, desirable, perennial understory vegetation exists, then these desirable species should become established and out-compete any potential noxious weeds or invasive species.

A Risk Assessment for Noxious and Invasive Weeds was completed for this Proposed Action and the risk rating has currently been identified as a 45 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. Preventative management measures should include seeding the project area to occupy disturbed sites with desirable species. The project area should be monitored for at least 3 consecutive years in order to provide for the control of newly established populations of noxious weeds and implement follow-up treatment for previously treated infestations.

Under the 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 some isolated areas which respond quickly to the herbicide application, this could potentially allow for the establishment of noxious and non-native, invasive weeds to establish due to a

delay in desirable species establishment and 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 the progression and increase of the existing, perennial, understory species prior to the establishment of any noxious weeds and most invasive species. Conformance with the Ely District Noxious Weed Prevention Schedule and mitigation measures identified in the Risk Assessment for Noxious and Invasive Weeds and outlined in the *Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States* would reduce the risk of noxious and non-native, invasive weed establishment.

A Risk Assessment for Noxious and Invasive Weeds was completed for this Alternative Action and the risk rating has currently been identified as a 27 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. Preventative management measures should include seeding the project area to occupy disturbed sites with desirable species. The project area should be monitored for at least 3 consecutive years in order to provide for the control of newly established populations of noxious weeds and implement follow-up treatment for previously treated infestations.

Under the No Action Alternative, noxious and non-native, invasive weeds may eventually increase into the targeted treatment area, particularly along traveled roads. Declining understory species in sagebrush and woodland sites would increase the risk of weed 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 and non-native, invasive weeds to establish following a wildfire event.

Cumulative Impacts

The possibility of future wildfire in the area is expected, as is additional fuels management activities and possibly wildland fire use for resource benefit. Following past wildfires, unforeseen situations have been discovered. Undetected stands of noxious weeds within the fire scar have been discovered and control actions have been initiated. This effect could be expected in the Smith Valley area following proposed or future unplanned disturbances due to nearby detected infestations outside the proposed project area. With planned disturbances such as mechanical treatments or other treatment methods, opportunities for detecting additional noxious weed infestations prior to disturbance would occur. Implementing the Proposed action, Alternative Action or a combination thereof would improve the ability of the vegetation community to compete with and prevent noxious and non-native, invasive weed establishment through the development of a more vigorous, diverse and productive community. Completing additional treatments in patches over time, followed by seeding if necessary, would reduce the potential of invasions from weed species over a large area. All past, present and future treatments would make the areas more resistant to noxious and non-native, invasive species invasion and establishment by increasing the density and composition of perennial understory species which compete with the undesirable species. The overall cumulative impacts from all past, present and future actions are expected to be minimal.

3.12 Water Quality

Affected Environment

It is expected that the current water quality within the proposed project area or in areas adjacent to the proposed project area is meeting State standards except during those periods of time during spring runoff, flash floods and other natural events. During these events, water quality may not be meeting State standards over a short term period.

Impacts

Under the Proposed Action, there is a possibility intense precipitation events related to soil erosion could result in short-term impacts to water quality. It is anticipated that the impacts would be short duration, not lasting long after the initial sediment influx or the initial high water flow. Over time, the Smith Valley Watershed has had periods in the past of degraded water quality resulting from precipitation events or rapid snowmelt. Any potential runoff events resulting from implementation of the Proposed Action would not be expected to increase the frequency or intensity of events above historical occurrence.

Under the Alternative Action, impacts to water quality are expected to be minimal. Tebuthiuron binds tightly to clay particles in the soil. Soils with high clay content reduce the chance of overland flow of Tebuthiuron pellets, as those pellets would be bound to clay particles and transported only if soil movement occurred. In soils with low clay content, infrequent, high-intensity precipitation events could be the most important potential factor that would transport Tebuthiuron pellets into surface or ground waters. Tebuthiuron is water soluble, so it would be dispersed into the soil or carried over the surface and dispersed in another location when saturated with water.

Leaching and a shallow water table are factors which influence the movement of Tebuthiuron to ground water. Tebuthiuron typically does not leach below the top 24 inches of the soil surface (Information Ventures, 1995). Most water tables are much deeper than 24 inches, so impacts should not occur to ground water sources. Due to break-down factors, Tebuthiuron usually does not persist in the soil past a 15 month period (Information Ventures, 1995). The possibility of chemicals entering the water table would be reduced by incorporating a "no-application" buffer of 100 feet from all drainage bottoms and 300 feet from springs when applicable. Also, mitigation measures outlined in the *Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States* would be followed in order to minimize the risks from herbicide use.

Under the No Action Alternative, there would be no effects anticipated to water quality over the short-term. Long-term impacts could result in reduced water quality as watershed stability would decrease through a decline in ecological conditions and accelerated soil erosion potential on each of the treatment sites. Future wildfires would likely be larger and more intense, resulting in more continuous areas void of vegetation cover which would increase the overall erosion potential. Runoff would likely occur for an extended period of time as rehabilitation would take a longer period of time due to decreased vegetative diversity and competition from undesirable annuals such as cheatgrass.

Cumulative Impacts

Past, present and reasonably foreseeable future actions would have minimal impact on water quality above the natural fluctuations resulting from seasonal events. Implementing the Proposed Action, the Alternative Action or a combination thereof would result in impacts similar to those already discussed in their respective sections. Future treatment actions combined with present actions should improve the overall watershed stability provided that the treatments are conducted in manageable acreages and in areas where ecological conditions are in a downward trend. Combining past, present and future treatments should minimize cumulative impacts to water quality by improving watershed stabilization and vegetation conditions. Improved vegetative conditions and overall resource and watershed stabilization should minimize the amount of sedimentation that could be deposited into riparian and wetland areas which would minimize the cumulative impacts to water quality.

3.13 Air Quality

Affected Environment

It is expected that the current air quality within the proposed project area is within acceptable limits and meets State standards. The proposed project area is in relatively close proximity to residential development and the Nevada State Prison. There are currently no activities occurring within the proposed project area which would affect air quality standards.

Impacts

The Proposed Action would only be expected to affect air quality for the short term. The use of heavy mastication equipment and/or chainsaws during the thinning treatment would result in both exhaust emissions and/or dust. The emissions are not expected to exceed Nevada and National Ambient Air Quality Standards. Air quality would be minimally impacted, as wind would sufficiently transport particles from the area and all State and National air quality standards are expected to be met. Failure to implement the treatments described under the Proposed Action is expected to eventually result in a further decline in perennial, herbaceous species which will result in more exposed bare soil. If more bare soil exists, then air quality will likely be affected on a periodic basis when high wind events are present and wind erosion occurs.

Under the Alternative Action, impacts from the aerial application of Tebuthiuron and seed should cause no long term impacts to air quality. The only anticipated impacts to air quality would be short term and would occur as a result of aircraft emissions.

Under the No Action Alternative, fuel loading would continue to increase which would increase the chance of an uncontrolled wildfire. In the event of a wildfire, uncontrollable emissions from smoke would be released into the atmosphere. Smoke sensitive areas, such as roadways and local or distant communities could be impacted in the short term. Periodic, short term impacts to air quality from soil erosion associated with wind events may occur as described under both the Proposed Action and Alternative Action.

Cumulative Impacts

There would be no cumulative impacts to air quality associated with the past, present and future habitat improvement and fuels reduction treatments as the duration associated with these treatments would be short term.

3.14 Land and Realty Uses

Affected Environment

Rights of Way (ROWs)

The only ROWs recorded within the proposed project area boundaries are above ground utility infrastructure. These ROWs include the following:

- NVN – 005253 Sierra Pacific Power Company Powerline
- NVN – 063162 Sierra Pacific Power Company Powerline

One other above ground utility infrastructure ROW occurs outside the project area to the east. This ROW is the following:

- NVN – 035513 Mount Wheeler Power Inc. Powerline

Public Water Reserves (PWRs)

Public Reserve No. 107 (April 17, 1926) (Amended the Pickett Act of 1912) states "every smallest legal subdivision of public land ..... which is vacant, un-appropriated, unreserved, public land and contains a spring or water holes, and all land within one quarter of a mile on every spring or water hole located on un-surveyed public lands be ..... withdrawn from settlement, location, sale or entry and reserved for public use in accordance with the provisions ....."

There are no known PWRs which occur within the boundaries of the proposed project area.

National Forest (BLM Withdrawn) Lands

There are no withdrawn public lands within the boundaries of the proposed project area boundaries (Nev-047860, Public Law 167, Public Land Order 1487, Withdrawal for the Humboldt National Forest).

Private Land (Excluding Mineral Patents)

Private land parcels were primarily granted under the Homestead Entry Act. There are no private lands which occur within the proposed project area boundaries.

Mining Claims

There no active or pending mining claims on record within the proposed project area.

Range Improvements

As previously mentioned under the Livestock Grazing Section, the only existing range improvement project which occurs within the proposed project area is the Romeo Allotment Fence. The Romeo Seeding occurs immediately adjacent to the proposed project area along the northeast portion and the Hercules Gap Well and a cattle guard occur outside the proposed project area to the east.

Impacts

Under the Proposed Action and Alternative Action, there are no underground utility lines which would be affected. Above ground utility infrastructure ROWs (Sierra Pacific Power Company Powerlines NVN – 005253 and NVN – 063162) could be avoided during thinning activities and during chemical application activities. The only range improvement project within the proposed project boundary is the Romeo Allotment Fence which could also be avoided during thinning activities and during chemical application activities. Two-track roads occur within the proposed project boundary. No impacts to the roads would be incurred as a result of implementation of the Proposed Action or Alternative Action. There are no PWRs, National Forest (BLM Withdrawn) Lands, private lands or active or pending mining claims within the proposed project area.

Under the No Action Alternative, none of the actions described under the Proposed Action or Alternative Action would be implemented (e.g., mechanical treatments, chemical treatments, etc.). No vegetative treatments would occur under the No Action Alternative. The possibility for future uncontrolled wildfires could potentially result in the loss of above ground utility infrastructure, range improvements and other physical structures which occur within the proposed treatment area and other physical structures outside the proposed treatment area. Private lands and withholdings and nearby Forest Service lands outside the proposed treatment area could also be adversely impacted as a result of a potential, uncontrolled wildfires. Under the No Action Alternative, the potential for adverse impacts to ROWs, PWRs, Federal lands under Forest Service jurisdiction, private lands, mining claims and range improvements will become greater over time in the event of uncontrolled wildfires.

Cumulative Impacts

Cumulative impacts to ROWs, PWRs, Federal lands under Forest Service jurisdiction, private lands, mining claims and range improvements should be negligible, if any, under the Proposed Action and Alternative Action. Cumulative impacts from past, present and foreseeable actions would reduce fuel continuity and loading and alter fire behavior. Past, present and future treatment actions would reduce the damage that could be caused by future uncontrolled wildfires.

3.15 Commercial Products

Affected Environment

There are specified areas in Smith Valley which are in close proximity to the proposed project area which serve as a fuel wood cutting areas.

Impacts

Under the Proposed Action and Alternative Action, impacts are expected to be minimal to the harvest of commercial products within the project area. By reducing the overall fuel loading within the area, there is a reduced chance of a large, uncontrolled wildfire occurring and destroying large tracts of land within and adjacent to the project area which could remove large acreages of trees and other vegetation. Areas adjacent to and within the general project area would remain available for the harvest of commercial products. Under the Proposed Action and Alternative Action, tree availability would be reduced within the immediate project area, although the potential for available fuelwood would be increased.

Under the No Action Alternative, the potential for a large, uncontrolled wildfire would increase over time which could result in large acreages of trees and other vegetation being removed within the project area, areas immediately adjacent to the project area and other areas within the Smith Valley Watershed.

Cumulative Impacts

A reduction in the overall fuel loading within the proposed project area would reduce the possibility of a large, uncontrolled wildfire occurring and destroying large tracts of land within and adjacent to the project area which could remove large acreages of trees and other vegetation. Since areas within the proposed project area, areas adjacent to the project area and areas within the Smith Valley Watershed would remain available for the harvest of commercial products, implementation of the Proposed Action, Alternative Action or a combination thereof combined with any past, present or future treatments is not expected to result in any cumulative impacts to the harvest of commercial products.

3.16 Native American and Religious Concerns

Affected Environment

Presently, there are no known traditional cultural properties identified within the proposed project area. On February 14, 2008, local Native American tribes were consulted with on the project proposal at a coordination meeting at the Ely Field Office. The goals and objectives of the project proposal and treatment options were discussed in accordance with BLM Manual Handbook H-8160-1. The purpose of the consultation was to identify any traditional or religious areas within the proposed project area and to receive comments and input from the tribes on the proposed project. Although consultation discussed the possibilities that the project area may be a cultural sensitive area, no additional comments were expressed or received which has indicated that no concerns exist for the proposed project.

Impacts

It is anticipated that no impacts would be incurred to Native American and religious concerns under the Proposed Action, Alternative Action or No Action alternatives. Cumulative impacts would be negligible, if any.

4.0 PROPOSED MITIGATION MEASURES

Appropriate mitigation measures have been incorporated into the Proposed Action and the Alternative Action and none are proposed in response to the anticipated impacts. Mitigation measures include considerations for sage grouse; migratory birds; livestock grazing; range improvement projects; historic and cultural resources; noxious weeds and invasive species; water quality; utility lines and other ROWs.

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 Field Office.

6.0 CONSULTATION and COORDINATION

1.	Curt Baughman	NDOW Game Biologist
2.	Thelora Kemp	Interested Public
3.	William Hayward	Georgetown Ranch Allotment Permittee
4.	WCSD Corporation	Heusser Mountain Allotment Permittee
5.	Krista Coulter	Nevada State Clearinghouse
6.	Chuck Petersen	USDA – NRCS (Elko, Nevada)
7.	Jaime Jasmine	USDA – NRCS (Elko, Nevada)
8.	Paul Blackburn	USDA – NRCS (Elko, Nevada)

Public involvement also consisted of the following:

1. a letter to all the identified public interests on March 19, 2008;
2. a Tribal coordination meeting conducted at the Ely Field Office on February 14, 2008;
3. a notice under "NEPA" on the Ely Field Office website located at http://www.blm.gov/nv/st/en/fo/ely_field_office.html in April of 2008;
4. coordination with the Heusser Mountain and Georgetown Ranch permittees;
5. and through consultation with partner agencies such as NDOW

B. Internal District Review

Name	Title	Resources
Jeff Fenton	Fire Planner	Fire, Fuels, Vegetation
Mindy Seal	Rangeland Technician	Livestock Grazing
Kari Harrison	Soil Scientist	Riparian/Wetlands/Floodplains; Soil/Water/Air
Marian Lichtler	Wildlife Biologist	Wildlife; Migratory Birds; Special Status Species
Bonnie Million	Noxious Weed Coordinator	Noxious Weeds, Invasive Species
Dave Jacobson	Wilderness Planner	Wilderness Values
Kalem Lenard	Outdoor Recreation Planner	VRM, Recreation
Kurt Braun	Archeologist	Cultural/Paleontological/Historical Res.
Melanie Peterson	Environmental Protection Spec.	Hazardous Materials
Elvis Wall	Native American Coordinator	Native American Religious Concerns; Tribal Coordination
Doris Metcalf	Realty Specialist	Lands and Realty Uses
Gina Jones	Ecologist/NEPA Coordinator	NEPA Compliance

7.0 REFERENCES

American Society for Range Management (1964). A Glossary of Terms Used in Range Management. Range Term Glossary Committee. Portland, Oregon. 32 pages.

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.
BLM. 2003. National Training Center. Visual Resource Management Manual – Course No. 8400-05.

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.

Commons, M.L., R.K. Baydack and C.E. Braun. 1999. Sage grouse response to pinyon/juniper management. Pages 238-239 in S.B. Monsen and R. Stevens, compilers. Proceedings of the Ecology and Management of Pinyon/Juniper Communities Symposium.

LANDFIRE Biophysical Setting Models (2006).

Miller, R., T. Svejcar and J. Rose. 1999. Conversion of shrub-steppe to juniper woodland. Pages 385-390 in S.B. Monsen, R. Stevens, R. J. Tausch, R. Miller and S. Goodrich, editors. Proceedings of the Ecology and Management of Pinyon/Juniper Communities within the Interior West Symposium. U.S. Department of Agriculture - Forest Service Proceedings RMRS-P-9. Rocky Mountain Research Station, Fort Collins, Colorado.

Stiegler, James H. (1979). Land Judging in Oklahoma. Cooperative Extension Service, Oklahoma State University. Stillwater, Oklahoma. 15 pages.

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. Available: http://texnat.tamu.edu\symposia\juniper\TOM2.htm

USDI-BLM, USDI-FWS, USDA-Forest Service, Oregon Department of Fish and Wildlife and Oregon Department of State Lands. 2000. Greater Sage Grouse and Sagebrush/Steppe Ecosystems: Management Guidelines. 21 pages plus appendices.

USDI-BLM, 2004. National Sage Grouse Habitat Conservation Strategy.

USDA-NRCS. 2003. Rangeland Ecological Site Descriptions.

USDA-NRCS. 1997. Soil Survey of White Pine County Nevada. Parts of White Pine and Eureka Counties. In cooperation with the USDI-BLM and the University of Nevada Agricultural Experiment Station.

USGS. 2005. Biology of the Great Basin-Mojave Desert Region. USGS.
Available: http://biology:usgs.gov/stt/SNT/noframe/gb150.htm

West, N.E. R. J. Tausch, P.I.T. Tueller. 1998. Management-oriented classification of pinyon-juniper woodlands of the Great Basin. U.S. Department of Agriculture, U.S. Forest Service. RMRS GTR-12.