



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Ely Field Office

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Ely, Nevada 89301-9408

<http://www.nv.blm.gov/ely>



In Reply Refer To:  
9214 (NV-044)

### **Finding of No Significant Impact and Decision Record North Spring Valley Habitat Improvement and Hazardous Fuels Reduction Project EA-NV-040-06-007**

#### **Finding of No Significant Impact**

Based on the environmental assessment (EA) for the proposed North Spring Valley Habitat Improvement and Hazardous Fuels Reduction Project (EA-NV-040-06-007), the BLM has determined that the proposed action will not significantly affect the quality of the human environment. All environmental effects for this determination have been discussed and disclosed in the EA, and the BLM has determined that implementation of its decision will not have a significant effect on the quality of the human environment. Therefore, the preparation of an Environmental Impact Statement (EIS) is not required prior to implementing treatments in the proposed project area.

This finding is based on consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), with regard to the context and the intensity of impacts described in the EA.

#### **Rationale**

The project area is located in North Spring Valley within Townships 23, 24 and 25 North and Ranges 65, 66 and 67 East; Mount Diablo Meridian (MDM); White Pine County, Nevada. The project area is located primarily along the mid and upper benches on the east side of the Schell Creek Range and the west side of the Antelope Range. The primary vegetation within the project area consists of pinyon and juniper, antelope bitterbrush and sagebrush communities. Perennial grasses and forbs are limited throughout a majority of the project area. The total project area parameter includes approximately 22,358 acres, although prescribed burning will be conducted on approximately 60 to 80% of the 8,350 acre target burn area and mowing will be conducted on approximately 40 to 60% of the 7,307 acre target mowing area.

The proposed action will include a prescribed burn which will be conducted along the mid and upper benches on the east side of the Schell Creek Range and west side of the Antelope Range. The prescribed burn along the Antelope Range bench will occur during the fall. The prescribed burn along the Schell Creek Range bench will occur during the spring. Target areas will include those areas where pinyon and juniper have established on sagebrush ecological sites and older,

dense, even-aged sagebrush stands occur. Aerial broadcast seeding will occur following the prescribed burn treatments.

Mechanical methods (mowing) will be implemented on sites where insufficient fuels exist to carry a prescribed fire. Drill seeding methods will occur following the treatments in areas with minimal to no understory vegetation to help ensure the establishment of desirable, perennial herbaceous species. All treatments will be conducted in a mosaic fashion. All of the lands within the project area parameter are public lands administered by the BLM.

The following mitigation measures are incorporated into the proposed action:

- All treatment areas will be inventoried for cultural resources to identify eligible (Historic Properties) and sensitive sites prior to implementing treatments. Identified cultural sites will be recorded and evaluated to determine eligibility for the National Register of Historic Places and a conclusion of the site's fire sensitivity will be determined. Eligible cultural resources will be avoided or impacts mitigated as necessary before treatments (i.e., burning, mowing or drill-seeding) are initiated.
- A survey for mining claim markers in documented active claim sites will be conducted prior to conducting treatments. All active mining claim marker locations and tag information will be recorded. Active mining claim markers that are destroyed by fire will be re-staked using a legal mining claim marker. The re-staking of mining claim markers will occur in coordination with the existing mining claimants to assure accurate, legal staking procedures that will minimize damage to claims.
- The Ely Field Office Noxious Weed Prevention Schedule will be adhered to during all phases of project implementation. Mitigation measures identified in the Weed Risk Assessment will be implemented as part of the proposed action. If possible, ignition strategies will attempt to create a 50 foot buffer of unburned vegetation from roadsides to mitigate possible noxious weed establishment from vehicular travel.
- If any mining sites or dumps are discovered within the project area, burning and mowing operations will avoid these sites in order to minimize risk from hazardous materials.
- All utility lines and other rights-of-way (ROW) structures will be avoided, cleared of vegetation or treated to prevent damage from prescribed burning. Above ground structures associated with buried utility lines will also be avoided in association with any proposed mechanical treatments. ROW holders will be notified as soon as possible prior to conducting any prescribed burning in the area.
- Suitable pygmy rabbit (*Brachylagus idahoensis*) habitat will be surveyed prior to conducting ground disturbing activities. Ignition and mowing pattern designs that will minimize impact to any occupied pygmy rabbit habitat will be incorporated. All treatment actions will comply with the *Ely District Policy Management Actions for the Conservation of Migratory Birds* (Instruction Memorandum NV-040-2001-02).

- The project area will be inspected prior to the prescribed burn and mechanical treatments to solidify those areas targeted for each specific treatment in order to achieve the desired resource management objectives. The areas with pinyon and juniper establishment and sufficient fuel loading will be identified for a fall burning treatment. The areas with pinyon and juniper establishment within antelope bitterbrush sites will be identified for a spring burning treatment. The areas with decadent, even-aged stands of sagebrush will be identified for mowing. The areas with scattered juniper establishment will be identified for hand cutting. The areas with insufficient understory vegetation and seed source will be identified for seeding.
- The treatment areas will be monitored following project implementation to determine success towards meeting resource management objectives. All monitoring techniques will follow BLM approved methods. Vegetative establishment will be monitored in order to promote soil protection, provide forage and protective cover and improve the overall ecological and watershed conditions. The treatment areas will be monitored to ensure any potential noxious weeds and undesirable species infestations are controlled. All vegetative trend monitoring site locations will be marked and recorded. Common methods which may be used include, but are not limited to, line and point intercept for cover, belt transects with a macroplot for density and photographs. A Remote Automated Weather Station (RAWS) will be established at the project site prior to project implementation in order to determine weather trends. During prescribed burning activities, areas of high fire intensity, weather conditions and smoke production and dispersal will be documented through notes and/or photos.
- Post-fire effects will be documented at monitoring locations with photos during the same year as the prescribed burn and mowing treatments. Beginning one year after the burn and continuing each year throughout the livestock closure period, pre-treatment monitoring points and others, as deemed appropriate, will be monitored. At each monitoring location, the response of understory species will be measured using a combination of line or point intercept and/or density transects, photos and documentation of general observations of plant response and vigor. Post-treatment monitoring of shrub and herbaceous species response will be monitored annually for a minimum of 3 years following implementation of the treatments. After the first 3 years, the project will be monitored at least once every 3 years. Any drainages will also be observed and/or monitored for erosion and sedimentation following the treatments. If observations and/or monitoring indicates that erosion and sedimentation are excessive, steps will be taken to mitigate the damage. Erosion control and sediment trapping structures (e.g., berms, straw bales, fiber matting, etc.) will be installed to mitigate any impacts to the drainage. Noxious weed detection will also be incorporated into all monitoring activities. If noxious weeds are found, measures will be taken to suppress the noxious weeds. The noxious weed infestations will be reported to the Ely Field Office Weed Coordinator in order to be included on the treatment schedule as soon as possible.
- Existing projects which occur within the proposed project area include the Middle Creek Pipeline, Sharp Creek Fence, Sharp Canyon Riparian Fence, North Creek Pasture Fence and a windmill. The Robison Henroid Fence is located adjacent to the proposed project

area. The existing fences, pipelines and the windmill will be inspected and repaired if damaged occur during implementation of the proposed treatments.

- The project area will be closed to livestock grazing for a minimum of two complete growing seasons or until vegetation management objectives have been met. The closure is necessary in order to ensure the establishment, protection and long-term viability of the vegetation enhancement project. The closure period may be extended pending the rate of progress towards vegetative establishment. No new fences will be constructed as a result of project implementation. Livestock grazing could resume as normally scheduled after the closure period, or when vegetation cover objectives have been met. An interdisciplinary team will conduct a review of resource monitoring data and objectives to determine if and when livestock grazing should be allowed to occur within the project area. If environmental factors prevent attainment of resource management objectives following the mandatory rest period, an interdisciplinary team will review resource monitoring data and determine an appropriate grazing regime with the permittee. Any terms and conditions specific to livestock grazing within the project area will also be discussed and included in any annual grazing authorization.
- No new roads will be constructed or created during project implementation. Some off-road travel will occur during mowing activities and possibly during burning practices. Loading and unloading any equipment will occur on existing roads to minimize off-road disturbances and impacts.

The primary fuels (sagebrush semi-desert and pinyon/juniper woodlands) within the North Spring Valley project area are in Fire Regime Groups IV (35-100+ year frequency; stand replacement severity) and V (200+ year frequency; stand replacement severity), respectively. The North Spring Valley and Antelope Valley Watershed Evaluation Report (July 2005) analyzed three main vegetation groups (salt desert shrub, sagebrush semi-desert and pinyon/juniper woodlands) using the FRCC methodology, available ecological site inventory, cover composition data and resource specialist input. The North Spring Valley watershed overall FRCC rating is 3 (highly departed). The primary vegetation types within the North Spring Valley project area are sagebrush semi-desert and pinyon/juniper woodlands. The sagebrush semi-desert and the pinyon/juniper woodlands within the watershed have a FRCC of 3. This indicates that fire regimes have been highly altered from their historical range. Fire frequencies are departed from historical frequencies by multiple return intervals. Risk of losing key ecosystem components is high. Vegetation attributes have been highly altered from their historical range. There is a need to assure each fuel type with the North Spring Valley project area is within the natural regime. The goal is to meet FRCC 1 for each fuel type within the project area.

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 project will improve habitat conditions for sage grouse and other wildlife species such as mule deer, pronghorn antelope and elk. The project will also improve habitat conditions for wild horses.

## **Intensity**

### **1. Impacts that may be both beneficial and adverse.**

The EA has considered both beneficial and adverse impacts of the hazardous fuels reduction project. Considering all impacts, the project will result in reduced fuel loads, improved ecological and habitat conditions and fire resiliency for the proposed project area. Reduced fuel loading will reduce the risk of damage from wildfire within the project area. Effects to overall habitat improvement, improved watershed stability and establishment of a more fire resilient ecological community are expected over time. A return of the natural fire regime and vegetative conditions is considered as merely improving the quality of the human environment through proactive treatments and fire management. Impacts that could be adverse include the potential for soil erosion in treatment areas that could occur with high intensity precipitation events in the short term following treatment. The project design of treating areas in a mosaic fashion should mitigate effects from soil erosion. Erosion control structures could be installed if monitoring data indicates excessive erosion has occurred.

### **2. The degree to which the proposed action affects public health or safety.**

The proposed action will result in improved public health and safety by reducing the existing fuel load and minimizing the risk of damage due to uncontrolled wildfires. Proposed treatment designs and mitigating measures will minimize impacts to public health and safety. A prescribed burn plan will be completed and a smoke permit will be attained to address public health and safety from burning. Public health and safety could be compromised if vegetation treatments are not implemented in the area. Vegetation, soils, wildlife habitat and other watershed values will be at substantial risk to wildfire due to heavy fuels accumulation and the frequency of summer lightning storms. Soils will be at immediate risk to wind and water erosion in the event a large, uncontrolled wildfire event occurred.

The proposed action will affect air quality with minimal emissions of smoke during the short duration of the burn. The emissions are not expected to exceed Nevada and National Ambient Air Quality Standards. In addition, it is expected that the emissions from smoke will not affect any Class I air quality areas or any smoke-sensitive areas. Ignition techniques will be utilized to minimize smoke emissions. Ignition of the burn will take place when atmospheric conditions allow smoke to be vented away from smoke-sensitive areas and disperse and dilute smoke before it accumulates in unacceptable concentrations. The anticipated smoke plume is expected to be in a direction away from communities and other development. Emissions from equipment will also occur, but air quality will not be affected beyond the current emission levels. Mowing and seeding activities will produce short term airborne dust. Air quality will be minimally impacted, as wind will sufficiently transport particles from the area. All State and National air quality standards are expected to be met.

**3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas.**

The project area is representative of the Great Basin in terms of vegetative condition and ecological functionality. Treatment design features and mitigating measures associated with the proposed action will ensure the protection of historic and cultural resources that occur within the project area. The project area does not contain any park lands, prime farmlands, wetlands or wild and scenic rivers. The area is not considered an ecologically critical area, but failure to take action to reduce the risk from wildfire could place the area at risk from erosion and/or the establishment of noxious or invasive weeds following a large wildfire. Failure to improve the ecological conditions will eventually result in a loss or significant loss in valuable wildlife habitat.

**4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.**

The treatment methods analyzed in the EA are well known and documented as successful tools for reducing hazardous fuels and improving habitat conditions. The treatments in the proposed action will allow for attainment of resource objectives. The treatment design features and mitigating measures associated with the treatments will minimize adverse impacts to the quality of the human environment. In the long term, benefits will be realized to the quality of the human environment as vegetative species diversity and distribution will increase, and wildfire sizes will decrease. The effects resulting from the proposed treatments are not likely to be highly controversial.

**5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.**

The treatment methods to be used are accepted standard practices, and the effects of the treatments do not involve unique or unknown risks. Mitigation measures have been included in the treatment designs to address known risks and uncertainties. Prescribed burning carries a level of uncertainty as local weather conditions could change at any moment. However, uncertainty will be eliminated or reduced to very low levels through development of a prescribed burn plan that will set the conditions allowed for burning. A Remote Automated Weather Station (RAWS) will be located at the project site to monitor climatic conditions prior to prescribed burning practices. Monitoring is also incorporated in the project design to address any uncertainty.

**6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.**

The actions associated with this project, and as identified in the EA do not establish a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration. While monitoring data from this project might be used to determine

appropriate actions in future similar type projects, those projects will be subject to environmental assessment standards and as independent decision-making processes.

**7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

All resources have been evaluated for cumulative impacts in the EA and no significant impacts were identified. Other fuels reduction and habitat improvement projects may be proposed in the future along the Schell Creek and Antelope Mountain Ranges. These projects seen together with anticipated future proposed land disturbing activities in the area will not result in cumulatively significant impacts at the local or watershed scale. Overall, future similar projects will improve vegetation and habitat diversity and protect watersheds from erosion and hazards from large wildfires. As standard procedure, future projects will be subject to cumulative impact analysis and reviewed on an area-specific case-by-case basis.

**8. The degree to which the action may adversely affect districts, sites, highways, structures or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural or historical resources.**

The proposed action will not adversely affect districts, sites, highways, structures or objects listed on or eligible for listing in the National Register of Historical Places, nor will it cause the loss or destruction of significant scientific, cultural or historical places. Mitigation measures associated with the actions address protection of eligible historic and cultural properties that occur in the project area. Identified cultural and historic properties will be avoided or mitigation actions completed prior to treatment to prevent adverse impacts.

**9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA of 1973.**

It has been determined that no federally listed threatened or endangered species occur within the proposed project area.

**10. Whether the action threatens a violation of Federal, State or local law or requirements imposed for the protection of the environment.**

The proposed action will not violate or threaten to violate any Federal, State or local law or requirement imposed for the protection of the environment. The proposed action is consistent to the maximum extent possible with Federal, State and local policies and plans.

**Decision**

Based on the analysis contained in the North Spring Valley Habitat Improvement and Hazardous Fuels Reduction Project EA-NV-040-06-007, it is the decision of the BLM to implement the project using the proposed action as presented in the EA. All actions, mitigation measures, standard operating procedures and monitoring as described in the proposed action will be incorporated.

## **Rationale**

The proposed action is also consistent with the Schell Grazing Environmental Impact Statement (EIS) ROD (July of 1983), Ely District Managed Natural and Prescribed Fire Plan (2000), Final EIS - Vegetation Treatments on BLM Lands in Thirteen Western States (1991), White Pine County Public Land Use Plan (May 1998), White Pine County Elk Management Plan (March 1999), Title 43 of the Code of Federal Regulations (CFR) Part 4190.1 (Effect of Wildfire Management Decisions), A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, Ten-Year Comprehensive Strategy (2001), The Standards and Guidelines for Nevada's Northeastern Great Basin, Healthy Forests Restoration Act (HFRA) (2003) and Healthy Forests Initiative for Wildfire Prevention and Stronger Communities (2002).

In addition, on July 29, 2005, the Ely Field Office, Bureau of Land Management began a 120 day public comment period for the Ely District Resource Management Plan and Environmental Impact Statement (Ely RMP/EIS). When complete, the Ely RMP/EIS will replace the Schell and Caliente Management Framework Plans and the Egan Resource Management Plan, approved in 1987. The proposed action is also in conformance with the Draft Ely RMP/EIS. The proposed action is also consistent to the maximum extent possible with Federal, State and local policies and plans.

It has been determined that a decline in ecological conditions has occurred within the project area based on ecological site inventory (ESI) data. A decline in ecological conditions adversely affects rangeland health, wildlife habitat, soil stability and other watershed values over the long-term. 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. There is a need to restore ecological site conditions in order to improve a wide array of watershed values.

The proposed action will promote an improvement in soil protection, soil stability, rangeland health, wildlife habitat and other watershed values over the long term. The proposed action will improve the health, vigor, recruitment and production of perennial grasses, forbs and shrubs. A mosaic pattern will allow for greater vegetative diversity, diverse age-class distribution and a patchiness effect which provides thermal and protective cover. The rejuvenation of decadent, even-aged stands of sagebrush and reducing the establishment of pinyon and juniper on sagebrush ecological sites will assist in improving the ecological condition of sites within the project area.

It has also been determined that resources within the project area are at substantial risk of wildfire due to heavy fuels buildup based on resource information analyzed in the North Spring Valley and Antelope Valley Watershed Evaluation Report (July 2005). The primary fuels (sagebrush semi-desert and pinyon/juniper woodlands) within the project area are in Fire Regime Group IV (35-100+ year frequency, stand replacement severity) and Fire Regime Group V (200+ year frequency, stand replacement severity), respectively. The overall FRCC rating for the North Spring Valley watershed is 3 (highly departed). The sagebrush semi-desert and the pinyon/juniper woodlands within the watershed have a FRCC of 3 which means that fire regimes

have been highly altered from their historical range and losing key ecosystem components is high.

The proposed action will decrease fire behavior of wildfires by reducing fuel loading and continuity. Future natural fires will be less extensive and smaller in size. Smaller wildfires will be easier to manage, reducing the risk to multiple natural resources, private lands, private withholdings, physical structures associated with right-of-ways and aesthetic values. The danger of large uncontrolled wildfires will be reduced. The FRCC will be reverted to within the natural (historic) range.

As a result of the analysis in the North Spring Valley Habitat Improvement and Hazardous Fuels Reduction EA, and the above Finding of No Significant Impact, the BLM has determined that the decision to implement the proposed action and associated mitigation measures will not result in unnecessary or undue degradation to public lands or cause significant impacts to public health and safety.

#### Persons and Agencies Consulted

A letter describing the project proposal was mailed to groups and individuals on December 15, 2005 who have expressed an interest in participating in habitat improvement and hazardous fuels reduction projects, as well as State and Federal wildlife agencies. The project proposal was posted on the Ely Field Office website under "NEPA Projects" at <http://www.nv.blm.gov/ely> and press releases were issued to local radio and newspaper media. Notices were published in the "Ely Times" on December 23, 2005 and in "BLM News" on December 30, 2005. A tribal coordination meeting was conducted at the Ely Field Office on February 23, 2006. Coordination occurred with the permittee affected by the project proposal. The Nevada Department of Wildlife (NDOW) stated they were supportive of the project through informal discussions and a field visit, but requested that the treatment design be conducted in a mosaic fashion to allow for diversity of sagebrush structure and age class distribution. During the preliminary scoping period, comments and questions were received from Western Watersheds Project. Many questions and comments were in regards to the resource conditions of soils, vegetation, woodland resources, riparian and wildlife habitat, other land uses in the area and projected cost of implementing the project. Questions and comments relevant to the proposed project were considered and incorporated into the development of the proposed action, as appropriate. Comments and questions were also received from Cory Venstura of West Point, Utah. Mr. Venstura has harvested Christmas trees in the area in the past and was concerned about removing all of the Christmas trees in the prescribed burn area. In response to Mr. Venstura's concerns, it is much anticipated that the prescribed burn will occur in a mosaic fashion due to the existing vegetation and fuels sources. Also, areas which are immediately adjacent to and within the general North Spring Valley area will remain available for the harvest of commercial products.

The preliminary EA was posted on the Ely Field Office website for a public comment period and mailed to interested public. The public review and comment on the preliminary EA ended on June 15, 2006. During the review and comment period, no further comments or questions were received and up to the date of this decision.

## **Appeal Procedures**

All of the documents supporting this decision are available for review by the public.

Appeal procedures for this decision are outlined in Title 43 CFR, Part 4.

In accordance with Title 43 CFR 4.410, any party to a case who is adversely affected by the decision of an officer of the Bureau of Land Management shall have a right to appeal to the Interior Board of Land Appeals (Board). In accordance with Title 43 CFR 4.411, a person who wishes to appeal the decision must file a notice that he wishes to appeal in the office of the authorized officer who made the decision. In accordance with Title 43 CFR 4.413, within 15 days of filing the notice of appeal and any petition for stay, the appellant also must serve a copy of the appeal and any petition for stay on any person named in the decision and on the Office of the Solicitor in the manner prescribed in Title 43 CFR 4.401(c). The office to file notice of appeal and a copy of the notice to appeal:

Bureau of Land Management  
Ely Field Office  
HC 33 Box 33500  
Ely, NV 89301

and a copy to

Office of the Regional Solicitor  
Pacific Southwest Region  
U.S. Department of the Interior  
2800 Cottage Way, Room E-2753  
Sacramento, CA 95825-1890

A person served with the decision being appealed must transmit the notice of appeal in time for it to be filed in the office where it is required to be filed within 30 days after the date of service. In accordance with Title 43 CFR 4.411 (b), the notice of appeal may include a statement of reasons for the appeal, a statement of standing if required by Title 43 CFR 4.412 (b), and any arguments the appellant wishes to make. In accordance with Title 43 CFR 4.412 (a), if the notice of appeal did not include a statement of reasons for the appeal or the appellant wishes to file additional statements of reasons, the appellant shall file such statements with the Board within 30 days after the appeal was filed. The address to file such statements to the Board is:

Board of Land Appeals  
Office of Hearings and Appeals  
801 North Quincy Street  
Arlington, VA 22203

If statement of reasons for appealing were filed with the "Notice of Appeal", no additional statement is necessary.

Pursuant to Title 43 CFR 4.21 (b), an appellant also may petition for a stay of the final decision pending appeal by filing a petition for stay along with the notice of appeal.

At the conclusion of any document that a party must serve, the party or its representative must sign a written statement certifying that service has been or will be made in accordance with the applicable rules and specifying the date and manner of such service (Title 43 CFR 4.422(c)(2)).

## **Approval**

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Tye Petersen  
Fire Management Officer

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Date

### **References Cited:**

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.

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.

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



**Environmental Assessment  
NV-040-06-007  
North Spring Valley Habitat Improvement  
and Hazardous Fuels Reduction Project**

**Location**

**North Spring Valley  
Townships 23, 24 and 25 North  
Ranges 65, 66 and 67 East  
White Pine County, Nevada**

**Prepared By**

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May 2006**

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## 1.0 BACKGROUND

### 1.1 Introduction

The project area analyzed in this environmental assessment (EA) is located in North Spring Valley within Townships 23, 24 and 25 North and Ranges 65, 66 and 67 East; Mount Diablo Meridian (MDM); White Pine County, Nevada (Map 1). The project area is located primarily along the mid and upper benches on the east side of the Schell Creek Range and the west side of the Antelope Range. The primary vegetation within the project area consists of pinyon and juniper, antelope bitterbrush and sagebrush communities. Perennial grasses and forbs are limited throughout a majority of the project area. The total project area parameter includes approximately 22,358 acres, although only approximately 70 percent of the total acreage 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:

- Title 43 of the Code of Federal Regulations Part 4190.1 (*Effect of Wildfire Management Decisions*) states in part, ".....when BLM determines that vegetation, soil or other resources on the public lands are at substantial risk of wildfire due to drought, fuels buildup or other reasons ..... the BLM may make a rangeland wildfire management decision which includes, but is not limited to, fuel reduction or fuel treatment such as prescribed burns, mechanical, chemical and biological thinning methods .....
- *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 North Spring Valley Habitat Improvement and Hazardous Fuels Reduction Project responds to the fuels reduction element of the Cohesive Strategy.

## **1.2 Need for the Proposal**

Pinyon and juniper woodlands 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, 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.

An Ecological Site Inventory (ESI) was conducted within the proposed project area in 1990. Vegetative data was collected from approximately 194 locations within 45 site write-up areas (SWAs). The resource management objectives outlined on page 7 are based on and supported by the ESI data and the associated ecological site potential. Overall, data indicates that there are minimal grasses and forbs and a large shrub and tree component in relation to the ecological site potential. Refer to the Vegetation Section 3.2 for a detailed comparison of ESI data and the associated ecological site potential.

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 includes 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. The following table outlines each fire regime group:

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

Frequency is the average number of years between fires. Severity is the effect of fire on the dominate over story vegetation. The primary fuels (sagebrush semi-desert and pinyon/juniper woodlands) within the North Spring Valley project area are in Fire Regime Groups IV and V, respectively.

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

The North Spring Valley and Antelope Valley Watershed Evaluation Report (July 2005) analyzed three main vegetation groups (salt desert shrub, sagebrush semi-desert and pinyon/juniper woodlands) using the FRCC methodology, available ecological site inventory, cover composition data and resource specialist input. The North Spring Valley watershed overall FRCC rating was 3 (highly departed). The primary vegetation types within the North Spring Valley project area are sagebrush semi-desert and pinyon/juniper woodlands. The sagebrush semi-desert and the pinyon/juniper woodlands within the watershed have a FRCC of 3. This indicates that fire regimes have been highly altered from their historical range. Fire frequencies are departed from historical frequencies by multiple return intervals. Risk of losing key ecosystem components is high. Vegetation attributes have been highly altered from their historical range. There is a need to assure each fuel type with the North Spring Valley project area is within the natural regime. The goal is to meet FRCC I for each fuel type within the project area.

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

- Reduce pinyon, juniper and sagebrush cover on sagebrush and mountain shrub ecological sites in order to (1) improve the overall vegetative composition within the ecological site potential; (2) promote the recovery and establishment of perennial grass and forb species; (3) improve the health, vigor and production of antelope bitterbrush communities and (4) improve the age-class distribution of even-aged sagebrush stands
- Improve the available habitat for neighboring sage grouse, mule deer and elk populations
- Reduce the risk of large catastrophic wild fires by reducing fuel loading and continuity within the North Spring Valley Watershed and meet FRCC I
- 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 Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) by approximately 50% and single-leaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) by approximately 75% on sagebrush ecological sites on an estimated 40-60% (approximately 8,950-13,400 acres) of the 22,358 acre project area parameter.

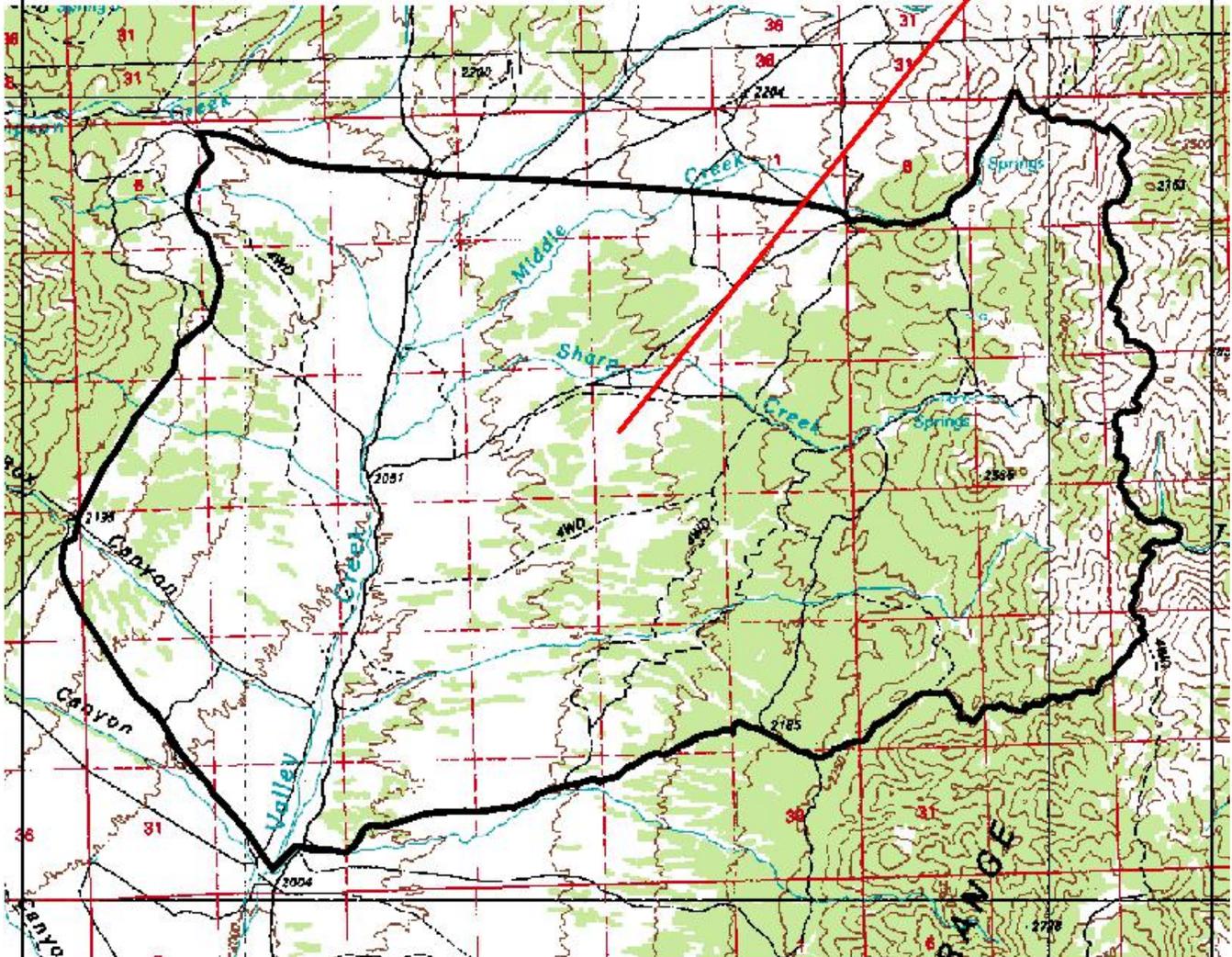
Long Term (5 to 10 years post treatment)

- Increase the percent composition by weight (lbs/acre) of perennial grasses and forbs to a minimum of 75% of the ecological site potential on sagebrush ecological sites within 5 to 10 years following completion of the proposed treatments. Refer to the Ecological Site Descriptions (Appendix 8.2 to Appendix 8.17).
- Increase antelope bitterbrush (*Purshia tridentata*) to a minimum of 35% of the composition by weight (lbs/acre) on Ecological Site 028BY035NV (PUTR2-ARAR8/PSSP) within 5 to 10 years following completion of the proposed treatments.

The east side of the valley (Antelope Range bench) could be treated as early as the fall of 2006. If time and funding permits, the west side of the valley (Schell Creek bench) would be treated during the spring of 2007 or another year. Otherwise, the remainder of the project area would be completed in future years when resources and funding are available.

# Map 1 - North Spring Valley General Project Area

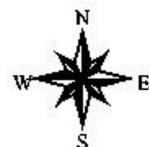
State of Nevada



Scale: 1:70,000  
Date: May 2006  
Ely Field Office

 NSV Project Area

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.



### 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:

- Schell Resource Area Management Framework Plan (MFP) and Record of Decision (ROD) (approved in June and July of 1983, respectively) The Proposed Action and Alternative Action are in conformance with the following specific objectives and decisions:
  - CR-1 Develop protective measures for specific significant sites within the resource area.
  - W-1 Reduce soil loss and sediment production in the resource area.
  - RM-6 Incorporate fire into range management for use as a management tool.
  - WL-2 Increase present forage production to meet wildlife demand.

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

- Schell Grazing Environmental Impact Statement (EIS) ROD (July of 1983)
- 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 Northern Mountains, Northern Benches and Schell Fire Management Units (FMUs). 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 also in conformance with priorities 1, 2 and 3 identified in the above document (page 4).
- 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. NDOW Management Unit 111 was identified as a maintenance area for project development because elk target numbers were effectively reached in 1998.

## 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, woodland resources, riparian and wildlife habitat, other land uses in the area, the projected cost of implementing the project and Christmas tree harvest opportunities.

## 2.0 DESCRIPTION of PROPOSED ACTION and ALTERNATIVES

### 2.1 Proposed Action

The proposal is to conduct prescribed burning on approximately 60 to 80% of the 8,350 acre target burn area and mowing on approximately 40 to 60% of the 7,307 acre target mowing area (Map 2). The prescribed burn would be conducted along the mid and upper benches on the east side of the Schell Creek Range and west side of the Antelope Range. The target areas for burning would include the benches where pinyon and juniper trees have established on sagebrush ecological sites. Mechanical methods such as mowing or hand cutting would be implemented on sites where insufficient fuels exist to carry a prescribed fire.

Management actions to consider include the following:

- Fall prescribed burn along the Antelope Range benches in areas with pinyon and juniper establishment; denser, even-aged sagebrush stands and sufficient residual herbaceous vegetation (higher intensity)
- Spring prescribed burn along the Schell Creek Range benches in areas with pinyon and juniper establishment; antelope bitterbrush communities and sufficient residual herbaceous vegetation (lower intensity)
- Mechanical treatments such as mowing or hand cutting in areas containing insufficient levels of understory fuels, young pinyon and juniper establishment and decadent, even-aged stands of sagebrush
- Reseeding through aerial or drill methods with desirable, perennial species in areas with minimal to no understory vegetative species and limited seed source; aerial seed in areas with trees and drill seed in areas with minimal or no trees

It is anticipated that the project would be completed in less than a period of one year from the initial start date, however, annual funding and climatic conditions could ultimately impact the ability to initiate and complete the project.

Prescribed burning treatments would be conducted when environmental conditions would allow for controlled burning conditions and are conducive to fire control. A burn plan would be prepared and a smoke permit would be acquired from the State of Nevada prior to conducting any prescribed burning treatments. Treatments would be conducted during periods of the year when favorable environmental conditions facilitate achievement of the project objectives. During normal years, favorable conditions for burning can occur during any season but are usually during the early spring, summer or fall months. Spring prescribed burning treatments would be implemented in areas containing antelope bitterbrush communities and perennial, herbaceous understory and where pinyon and juniper establishment is occurring outside of natural woodland sites. Fall prescribed burning treatments would be implemented on sagebrush ecological sites with pinyon and juniper and where sufficient understory vegetation (perennial grasses and shrubs) exists. The goal would be to conduct prescribed burns on areas with pinyon and juniper establishment which have soil potential characteristics that would facilitate the regeneration and establishment of perennial herbaceous cover and shrubs, either naturally or by seeding. Seeding would be conducted during the fall or early winter months, preferably prior to snow fall. Woodland ecological sites and curlleaf mountain mahogany sites which occur along the perimeters of the project area would not be deliberately ignited.

Prescribed burning would be initiated by ground or aerial ignition techniques. The firing pattern techniques would be managed to burn sagebrush ecological sites which contain pinyon/juniper and older, even-aged stands of sagebrush. Existing roads, natural barriers and changes in vegetative composition and density would be utilized as fire control breaks. A small amount of fire line construction is anticipated. Cutting vegetation and constructing hand or foam lines may also be conducted, if necessary, in order to improve fire lines for fire control. Lighting techniques that would minimize the chance of fire escape would be utilized at all times. Mop up of the fire perimeter would be conducted, as necessary, to ensure containment within the treatment area and for safety of personnel conducting the prescribed burn. Any hand constructed control lines would not be directly linked to roads used for control lines. Instead, a foam line would be used at least fifty feet from road intersections to discourage motorized travel and future development of trails from these lines.

After the prescribed burn is complete, and when safely practicable, any hand constructed fire lines would be rehabilitated. Fire line rehabilitation would be conducted to stabilize the soil, create physical barriers to discourage off-highway vehicle use and to conceal the fire line to reduce visible impacts for aesthetic purposes. The placement of signs which limit motorized travel to designated routes would be utilized to discourage unauthorized vehicular travel which would protect habitat restoration efforts. Fire control lines which are constructed on slopes in excess of 15 percent would require water bar construction or where there is evidence of major water flow. Maximum rehabilitation efforts would be undertaken to improve visual characteristics in areas directly visible from the roads and trails. In areas less visible from roads and trails, line rehabilitation would focus on soil stabilization and vegetative establishment.

Aerial seeding or drill seeding would be conducted on the proposed prescribed burn units that have limited seed sources and declining perennial understory species. Areas with greater than 60 percent

relative tree cover (tree cover/total vegetation cover) or with less than 10 percent cover of dominant, perennial, herbaceous understory would be seeded. Dominant, perennial, herbaceous species would be determined by using the appropriate Ecological Site Guides as developed by the USDA - Natural Resources Conservation Service (NRCS). Seeded species in the prescribed burn units would include perennial species which are able to successfully compete with invasive annuals (e.g., cheatgrass) and are adapted to site characteristics. The decision to seed based on the above criteria could be modified based on experience and future monitoring data.

Mechanical treatments would be conducted on those sites with less dense, older, even-aged stands of sagebrush or on sagebrush ecological sites containing pinyon and juniper saplings where insufficient fuels exist to effectively carry a prescribed fire. Any mechanical treatments on sagebrush sites would be conducted by creating strips to allow for grass and forb establishment while leaving some sagebrush for vegetative diversity and protective cover. Mowing would be conducted with a brush mower pulled by a rubber-wheeled tractor and seeding would be conducted using a rangeland drill pulled by a rubber-wheeled tractor. Mowing or other mechanical treatments would be conducted in a mosaic fashion by mowing strips and incorporating irregular (not straight) boundary lines. Favorable conditions for mowing are usually during the spring, summer and fall months. Seeded species in the proposed mechanical treatment area would include perennial species that are adapted to site characteristics.

All treatment areas 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 and a conclusion of the site's fire sensitivity would be determined. Eligible cultural resources would be avoided or impacts mitigated as necessary before treatments (i.e., burning, mowing or drill-seeding) are initiated.

A survey for mining claim markers in documented active claim sites would be conducted prior to conducting treatments. All active mining claim marker locations and tag information would be recorded. Active mining claim markers that are destroyed by fire 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 would be adhered to during all phases of project implementation. Mitigation measures identified in the Weed Risk Assessment (Appendix 8.1) would be implemented as part of the proposed action. If possible, ignition strategies would attempt to create a 50 foot buffer of unburned vegetation from roadsides to mitigate possible noxious weed establishment from vehicular travel.

If any mining sites or dumps are discovered within the project area, burning and mowing 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, cleared of vegetation or treated to prevent damage from prescribed burning. Above ground structures associated with buried utility lines would also be avoided in association with any proposed mechanical treatments. Right-of-way (ROW) holders would be notified as soon as possible prior to conducting any prescribed burning in the area.

Suitable pygmy rabbit (*Brachylagus idahoensis*) habitat would be surveyed prior to conducting ground disturbing activities. Ignition and mowing pattern 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-040-2001-02).

The project area would be inspected prior to the prescribed burn and mechanical treatments to solidify those areas targeted for each specific treatment in order to achieve the desired resource management objectives. The areas with pinyon and juniper establishment and sufficient fuel loading would be identified for a fall burning treatment. The areas with pinyon and juniper establishment within antelope bitterbrush sites would be identified for a spring burning treatment. The areas with decadent, even-aged stands of sagebrush would be identified for mowing. The areas with scattered juniper establishment would be identified for hand cutting. The areas with insufficient understory vegetation and seed source would be identified for seeding.

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 in order to promote soil protection, provide forage and protective cover and improve the overall ecological and watershed conditions. The treatment areas would be monitored to ensure any potential noxious weeds and undesirable species infestations are controlled. 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 transects with a macroplot for density and photographs. A Remote Automated Weather Station (RAWS) would be established at the project site prior to project implementation in order to determine weather trends. During prescribed burning activities, areas of high fire intensity, weather conditions and smoke production and dispersal would be documented through notes and/or photos.

Post-fire effects would be documented at monitoring locations with photos during the same year as the prescribed burn and mowing treatments. Beginning one year after the burn and continuing each year throughout the livestock closure period, pre-treatment monitoring points and others, as deemed appropriate, would be monitored. At each monitoring location, the response of understory species would be measured using a combination of line or point intercept and/or density transects, photos and documentation of general observations of plant response and vigor. Post-treatment monitoring of shrub and herbaceous species response would be monitored annually for a minimum of 3 years following implementation of the treatments. After the first 3 years, the project would be monitored at least once every 3 years. Any drainages would also be observed and/or monitored for erosion and sedimentation following the treatments. If observations and/or monitoring indicates that erosion and sedimentation are excessive, steps would be taken to mitigate the damage. Erosion control and sediment trapping structures (e.g., berms, straw bales, fiber matting, etc.) would be installed to mitigate any impacts to the drainage. Noxious weed detection would also be incorporated into all monitoring activities. If noxious weeds are found, measures would be taken to suppress the noxious weeds. 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.

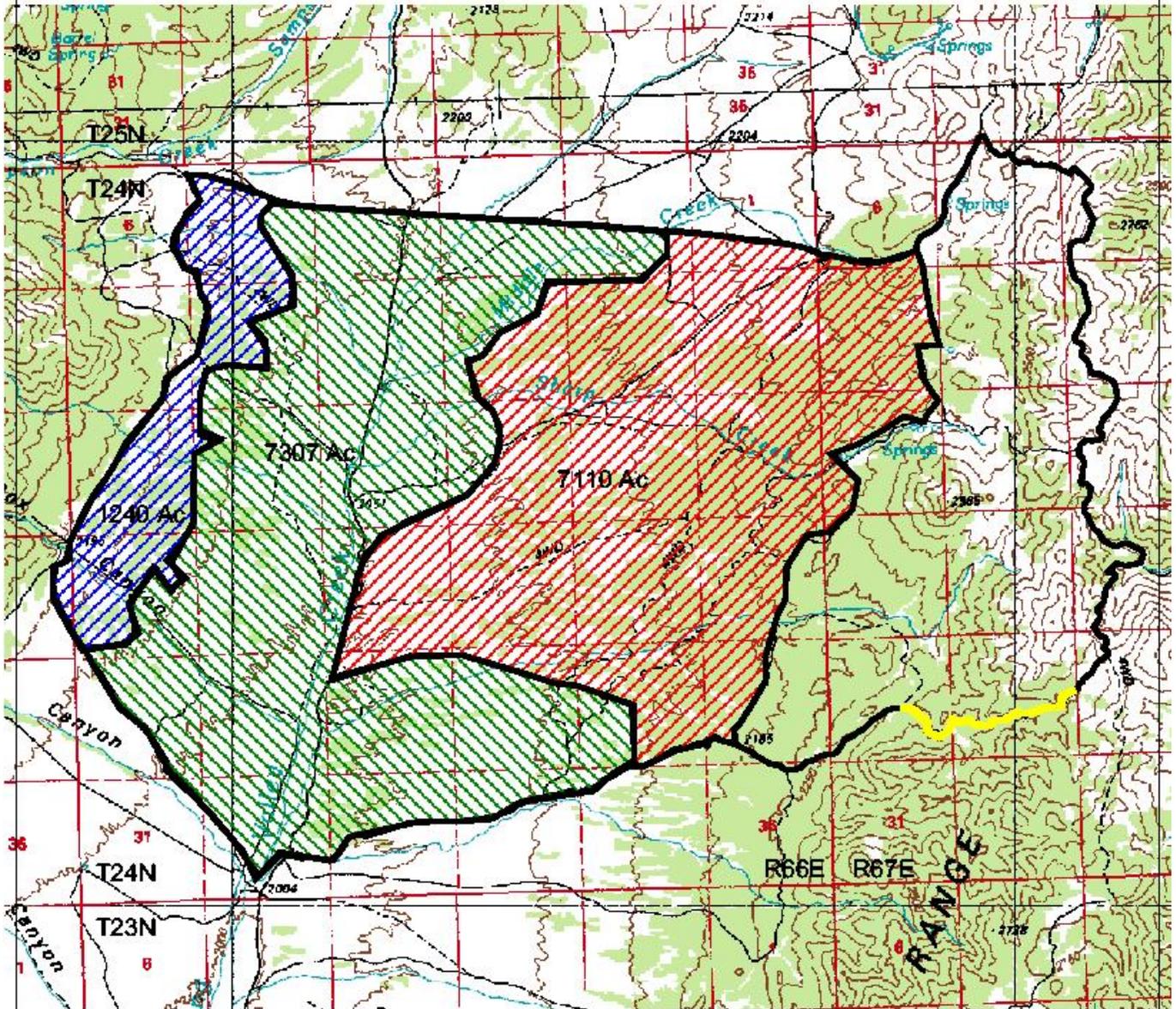
Existing projects which occur within the proposed project area include the Middle Creek Pipeline, Sharp Creek Fence, Sharp Canyon Riparian Fence, North Creek Pasture Fence and a windmill. The Robison

Henroid Fence is located adjacent to the proposed project area. The existing fences, pipelines and the windmill would be inspected and repaired if damaged occur during implementation of the proposed treatments.

The project area would be closed to livestock grazing for a minimum of two complete growing seasons or until vegetation management objectives have been met. The closure is necessary in order to ensure the establishment, protection and long-term viability of the vegetation enhancement project. The closure period may be extended pending the rate of progress towards vegetative establishment. No new fences would be constructed as a result of project implementation. Livestock grazing could resume as normally scheduled after the closure period, or when vegetation cover objectives have been met. An interdisciplinary team would conduct a review of resource monitoring data and objectives to determine if and when livestock grazing should be allowed to occur within the project area. If environmental factors prevent attainment of resource management objectives following the mandatory rest period, an interdisciplinary team would review resource monitoring data and determine an appropriate grazing regime with the permittee. Any terms and conditions specific to livestock grazing within the project area would also be discussed and included in any annual grazing authorization.

No new roads would be constructed or created during project implementation. Some off-road travel would occur during mowing activities and possibly during burning practices. Loading and unloading any equipment would occur on existing roads to minimize off-road disturbances and impacts.

### Map 2 - North Spring Valley Proposed Treatment Areas



-  Line Construction
-  Spring Burn
-  Fall Burn
-  Mowing Area
-  Project Boundary

Scale: 1:70,000  
Date: May 2006  
Ely Field Office

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.



## 2.2 Alternative Action

The alternative action is to apply a pellet form of the herbicide Tebuthiuron (trade name Spike 20P) over an estimated 40 to 60 percent of the project area where pinyon and juniper are present on sagebrush ecological sites and those sites with denser, even-aged sagebrush stands. Tebuthiuron is an herbicide that mostly affects woody species (e.g., sagebrush, antelope bitterbrush, pinyon/juniper). Those areas containing antelope bitterbrush would be avoided to the extent possible. Seeding of the project area would occur on the treated areas using the same techniques and criteria as identified for the Proposed Action, however, seeding would be delayed until the effects from the herbicide were complete (approximately two years). Mechanical treatments would occur in the same areas as identified under the Proposed Action.

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

Application rates and procedures would follow directions as listed on the herbicide specimen label for sagebrush and pinyon/juniper. Target areas for herbicide treatment would be the same as listed for prescribed burning in the Proposed Action. The preferred time of application would be during the fall prior to the first snow fall or during the spring prior to the beginning of the growing season, however, the herbicide could be applied during any time as long as the ground is not frozen, water saturated or snow covered. The project would be conducted during calm weather conditions to avoid herbicide (pellet) drift.

The project design would include a "no application" buffer zone of at least 100 feet from drainage bottoms and 300 feet around springs and perennial water sources. 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.

Suitable pygmy rabbit habitat would be surveyed prior to conducting ground disturbing activities. Raptor nesting sites would be identified and protected in areas of the proposed vegetative manipulation. All treatment actions would comply with the *Ely District Policy Management Actions for the Conservation of Migratory Birds* (Instruction Memorandum NV-040-2001-02).

Livestock grazing would not be scheduled within the treatment area during herbicide application. Following application, livestock grazing would be allowed to occur, until the total effects of herbicide were realized or when seeding was implemented. After seeding had occurred, livestock would not be allowed to graze within the treatment area for two complete growing seasons or until vegetation

objectives have been achieved. The same objectives and criteria listed under the Proposed Action would be used to determine when normally permitted livestock grazing could continue in the area. No new fencing is being proposed in order to prevent livestock from entering the treated areas. The livestock grazing permittee would be required to keep livestock out of the treatment area by employing other means of livestock control (e.g., herding or removing sheep from the allotments).

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.

Access to the area would be closed during herbicide application. It is anticipated that the application would take one to two days to complete.

The Ely Field Office Noxious Weed Prevention Schedule would be adhered to during all phases of project implementation. Mitigation measures identified in the Risk Assessment for Noxious Weeds (Appendix 8.1) would be implemented as part of this action.

No new roads would be constructed or created during project implementation. Some off-road travel would occur during mowing activities. Loading and unloading any equipment would occur on existing roads to minimize off-road disturbances and impacts.

### **2.3 No Action Alternative**

The No Action Alternative is the current management situation. Under this alternative, there would be no treatments applied within the project area and hazardous fuel conditions would continue to accumulate beyond levels representative of the natural (historic) fire regime. Habitat values would continue to decline as perennial, herbaceous understory would further be reduced in the long term.

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

One alternative considered was hand cutting or using only mechanical methods to thin or remove pinyon and juniper which has established on sagebrush sites and mowing to thin or remove decadent, even-aged stands of sagebrush and other shrubs without the use of prescribed fire. This alternative was eliminated from detailed analysis because of cost ineffectiveness and the inability to complete the project work and attain resource objectives in a timely manner. Due to the cost ineffectiveness of this alternative, only small, isolated units within the project area would be treated and it was expected that the goals and objectives of the project proposal would not be met. The treatment of smaller, isolated acreages was not expected to allow for adequate improvement in order to meet the habitat needs of wildlife populations and allow for sufficient production of perennial, herbaceous understory species. The overall condition of ecological sites within the project area would not make significant progress towards achieving the potential natural community. The treatment of small, isolated portions of the proposed project area

would not assist the North Spring Valley watershed in making significant progress towards or maintaining conformance with the Standards and Guidelines for Nevada's Northeastern Great Basin and the Fundamentals of Rangeland Health (Title 43 CFR 4180).

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

#### **3.1 General Description**

The proposed project area occurs within the North Spring Valley Watershed. The area is located in North Spring Valley within Townships 10 and 11 South and Ranges 65, 66 and 67 East. The area is located along the mid and upper benches on the east side of the Schell Creek Range and the mid and upper benches along the west side of the Antelope Range. Elevations range from approximately 5,000 to 7,000 feet and slopes range from an estimated 2 to 15 percent. Annual precipitation levels average from approximately 8 to 14 inches. The primary vegetation within the project area consists of pinyon and juniper, antelope bitterbrush 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 *North Spring Valley and Antelope Valley Watershed Assessment Report* (July 2005) for other resource information relevant to the project area.

#### **3.2 Vegetation**

The primary vegetation within the project area consists of pinyon and juniper and sagebrush communities. Antelope bitterbrush is common on the west side of the project area along the east slopes of the Schell Creek Range, but exhibits low vigor and decadence due to pinyon and juniper establishment. Perennial grasses and forbs are limited on several sites within the project area (Photo 1).

Native, perennial, cool-season <sup>1</sup> grasses within the project area include species such as Indian ricegrass (*Oryzopsis hymenoides*), western wheatgrass (*Agropyron smithii*), needle and thread (*Stipa comata*), bottlebrush squirreltail (*Sitanion hystrix*), sandberg bluegrass (*Poa secunda*), Nevada bluegrass (*Poa nevadensis*), bluebunch wheatgrass (*Agropyron spicatum*) and sand dropseed (*Sporobolus cryptandrus*). Non-native, perennial cool-season grasses include species such as crested wheatgrass (*Agropyron cristatum*), an excellent drought-tolerant and fire resistant grass which is commonly used for reclamation and spring forage production in arid sections of the western United States (Ogle, 2003). Many of the existing perennial, cool-season grasses exhibit low vigor and reduced seed and vegetative production.

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<sup>1</sup> 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).

Warm-season<sup>2</sup> 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*), curlleaf mountain mahogany (*Cercocarpus ledifolius*), antelope bitterbrush (*Purshia tridentata*), serviceberry (*Amelanchier sp.*), rabbitbrush (*Chrysothamnus sp.*), and Nevada tea (*Ephedra nevadensis*). Many of the sagebrush communities are comprised of older, even-aged, decadent plants which have low vigor and poor nutritional value for browsers. The primary tree species are single-leaf pinyon pine (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*).

There has been an overall reduction in the production and vigor of native and non-native perennial, cool-season grasses and native forbs on sites within the proposed treatment areas. Antelope bitterbrush is a native shrub which is a very important forage component on mule deer winter range. Antelope bitterbrush is common within the project area and a large portion of the shrubs are decadent, particularly on sites with the establishment of pinyon and juniper.

On several sites within the proposed treatment area which are comprised of species such as antelope bitterbrush, sagebrush and a variety of grasses, pinyon and juniper are becoming established (Photo 2).

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<sup>2</sup> 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).

Photo 1 - Limited Understory of Perennial Grasses and Forbs

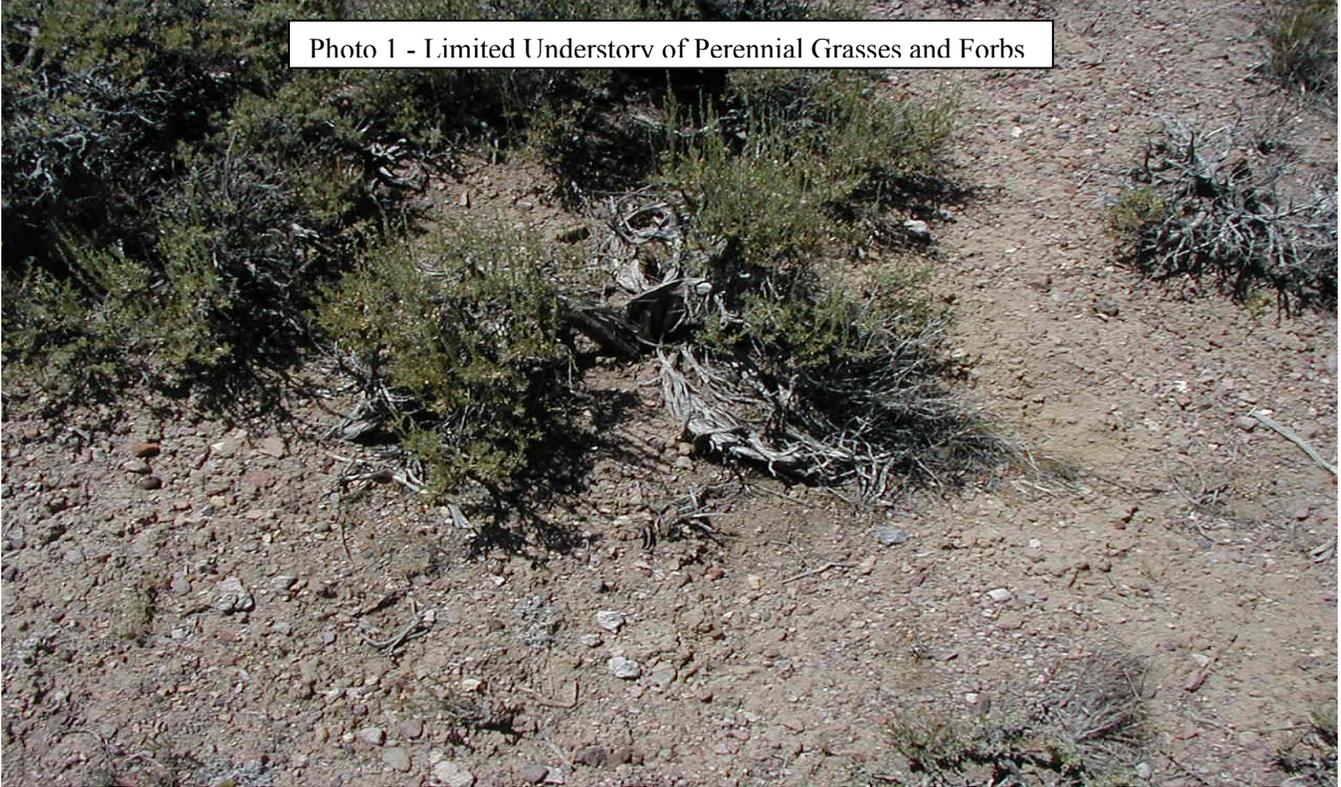


Photo 2 - Pinon and Juniper Establishment on Sagebrush Ecological Sites



A comparison of the potential vegetative composition by weight (lbs/ac) for each ecological site in comparison to the percent composition by weight (lbs/ac) from the ESI is summarized in the following table:

Ecological Site	Potential Vegetative Composition by Weight (lbs/ac)		ESI % Composition by Weight (lbs/ac)	
028BY003NV (ARTRT/LECI4)	Grasses	85%	Grasses	14%
	Forbs	5%	Forbs	2%
	Shrubs/Trees	10%	Shrubs	84%
028BY006NV (ARNO4/PSSP-ACHY)	Grasses	60%	Grasses	10%
	Forbs	5%	Forbs	3%
	Shrubs/Trees	35%	Shrubs	68%
028BY007NV (ARTR2/ACTH7-PSSP)	Grasses	65%	Grasses	11%
	Forbs	10%	Forbs	3%
	Shrubs/Trees	25%	Shrubs	79%
028BY008NV (ARNO4/PSSP-ACHY)	Grasses	55%	Grasses	15%
	Forbs	5%	Forbs	
	Shrubs/Trees	40%	Shrubs	85%
028BY010NV (ARTRW/ACHY-HECO26)	Grasses	50%	Grasses	7%
	Forbs	5%	Forbs	2%
	Shrubs/Trees	45%	Shrubs	91%
028BY011NV (ARNO4/ACHY-HECO26)	Grasses	50%	Grasses	5%
	Forbs	5%	Forbs	2%
	Shrubs/Trees	45%	Shrubs	69%
028BY013NV (KRLA2/ACHY)	Grasses	30%	Grasses	2%
	Forbs	5%	Forbs	55%
	Shrubs/Trees	65%	Shrubs	43%
028BY016NV (ARNO4/ACHY-HECO26)	Grasses	40%	Grasses	16%
	Forbs	5%	Forbs	3%
	Shrubs/Trees	55%	Shrubs	80%
028BY017NV (ATCO/ACHY-ELEL5)	Grasses	30%	Grasses	3%
	Forbs	5%	Forbs	1%
	Shrubs/Trees	65%	Shrubs	91%
028BY018NV (KRLA2/ACHY)	Grasses	20%	Grasses	
	Forbs	5%	Forbs	10%
	Shrubs/Trees	75%	Shrubs	90%
028BY030NV (ARVA2/PSSP)	Grasses	55%	Grasses	11%
	Forbs	10%	Forbs	7%
	Shrubs/Trees	35%	Shrubs	62%
			Trees	20%

Ecological Site	Potential Vegetative Composition by Weight (lbs/ac)		ESI % Composition by Weight (lbs/ac)	
028BY035NV (PUTR2-ARAR8/PSSP)	Grasses	45%	Grasses	6%
	Forbs	10%	Forbs	1%
	Shrubs/Trees	45%	Shrubs	73%
028BY037NV (ARAR8/PSSP-ACTH7)			Trees	20%
	Grasses	50%	Grasses	10%
	Forbs	10%	Forbs	9%
	Shrubs/Trees	40%	Shrubs	76%
028BY039NV (ARAR8/PSSP-ACTH7-POSE)			Trees	5%
	Grasses	40%	Grasses	7%
	Forbs	15%	Forbs	3%
	Shrubs/Trees	45%	Shrubs	60%
			Trees	30%
028BY080NV (ARTRW/ACHY-HECO26)	Grasses	55%	Grasses	9%
	Forbs	10%	Forbs	3%
	Shrubs/Trees	35%	Shrubs	80%
			Trees	8%
028BY087NV (ARVA2/PSSP-ACTH7)	Grasses	55%	Grasses	6%
	Forbs	15%	Forbs	
	Shrubs/Trees	30%	Shrubs	88%
			Trees	6%

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 which would provide a more palatable and nutritional source of forage for livestock, wildlife and wild horses and also protect the soil resource and other associated watershed values. The rejuvenation of decadent, even-aged stands of sagebrush and reducing the establishment of pinyon and juniper would assist in improving the ecological condition of sites within the project area. It is expected that the plant species diversity and the plant species composition would be in better balance with the endemic<sup>3</sup> native wildlife needs when at ecological site potential. In western juniper/antelope bitterbrush associations, antelope bitterbrush appears more vigorous where fire has killed junipers (Bunting, 1985 and Richardson 1986). Antelope bitterbrush has a low (6 percent) sprouting success rate, low seedling establishment and short lifespan in western juniper communities (Bunting, 1984). In these communities, regular but not too frequent fires are required to clear out older, decadent antelope bitterbrush and western juniper; to establish new antelope bitterbrush seedlings; and/or to encourage sprouting (Bunting, 1984 and Gruell 1986). 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<sup>4</sup>. The proposed treatments would help the project area meet FRCC I by reducing fuel loading and continuity. The Proposed Action is also expected to assist the North Spring 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:

<sup>3</sup> endemic restricted or peculiar to a locality or region

<sup>4</sup> succession change in the vegetative composition of an ecosystem due to plant response from human-induced impacts and natural changes in the environment

"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, overall impacts to vegetative communities are expected to be very similar to those as described under the Proposed Action. The primary difference is that vegetative response under the Alternative Action may occur at a slower rate due to the time required for the herbicide effects to occur. More residual vegetation, such as grasses, would remain under the Alternative Action due to the absence of prescribed fire practices. The residual vegetation would likely provide some protective cover for wildlife species as well as provide protection to regenerating grasses and shrubs which could be grazed by wildlife and wild horses. Although livestock would not be allowed to graze or browse the treatment areas until vegetative establishment has occurred, wildlife and wild horses would have access to the treatment areas at all times. One factor to consider under the Alternative Action is that antelope bitterbrush will develop a deep root system in deep soils. Root depth may be 4 to 6 feet or greater, depending the soil depth. Tebuthiuron affects woody species most effectively to a depth of approximately 12 inches below the soil surface. The soils within the proposed project area are relatively shallow, with the upper layer comprised primarily of gravelly loams. Due to the existing soil conditions, it is expected that the root systems of antelope bitterbrush within the project area are at a relatively shallow depth. Those areas containing antelope bitterbrush would be avoided to the extent possible. Tebuthiuron, which targets woody species, would potentially eliminate the antelope bitterbrush shrubs if it was applied on those sites. 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 this alternative.

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, wildlife and wild horses; 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, 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. Most rehabilitation efforts have been successful within the vicinity of the project area due to an increase in vegetative diversity and resiliency. Past actions to adjust livestock, wild horse and wildlife use on vegetation combined with present and future actions to implement various fuels and vegetation treatments would allow for an improvement in vegetative recruitment, establishment, production, vigor and diversity and help facilitate the establishment of the natural (historic) fire regime. 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

The primary soil mapping units within the project area include the Palinor-Urmafot Association, the Palinor-Tulase-Izar Association, the Urmafot Association and the Urmafot-Palinor-Shree Association (USDA - NRCS, 2005).

The Palinor-Urmafot Association occurs from 6,200 to 7,450 feet in elevation and within the 8 to 14 inch precipitation zone (PZ). These soils occur on slopes from 2 to 15 percent. The upper layer of this soil association is comprised of gravelly to very gravelly loams. These soils are well drained, have moderate permeability<sup>5</sup> and have very high runoff potential.

The Palinor-Tulase-Izar Association occurs from 6,600 to 7,150 feet in elevation and within the 8 to 12 inch PZ. These soils occur on slopes from 2 to 50 percent. The upper layer of this soil association is comprised of silt loams and very gravelly loams. These soils are well drained to excessively drained, have moderate permeability and have medium to very high runoff potential.

The Urmafot Association occurs from 6,750 to 7,650 feet in elevation and within the 12 to 16 inch PZ. These soils occur on slopes from 2 to 30 percent. The upper layer of this soil association is comprised of gravelly loams. These soils are well drained, have moderate permeability and have a very high runoff potential.

The Urmafot-Palinor-Shree Association occurs from 6,750 to 7,400 feet in elevation in the 8 to 14 inch PZ. The upper layer of this soil association is comprised of gravelly to very gravelly loams. These soils are well drained, have moderate to moderately slow permeability and have a high to very high runoff potential. These soils occur on slopes from 2 to 15 percent.

The project area is within Major Land Resource Area (MLRA) 28B. The physiographic, climatic, soils and vegetative characteristics of these ecological sites are outlined in Appendix 8.2 - Appendix 8.17 (USDA - NRCS, 2003).

Under the Proposed Action, there would be a possibility for some short-term (1 to 3 years) instability of the burned portion of the project area until the existing and seeded understory vegetation reestablished.

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<sup>5</sup> 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).

Prescribed burning would remove the vegetation and litter leaving the soil surface open to direct impact with precipitation events. Until vegetation has established, there would be a risk that intense precipitation events could result in some soil erosion to the watershed. The magnitude of this impact would depend on the burn severity and the number and intensities of precipitation events before vegetation reestablishes. The most sensitive areas for soil erosion would occur on steeper slopes, however, the targeted treatment area does not exceed an estimated maximum of 10 to 15 percent slopes. Burning is expected to occur in a mosaic pattern. Burning in a mosaic pattern, avoiding steeper slopes and seeding in areas with minimal understory or existing seed source would minimize overall impacts. Once vegetative establishment has occurred, plant densities should be sufficient to provide soil protection in order to minimize and reduce erosion rates. Each year, organic plant material will be deposited on the soil surface from dormant plants which would protect the soil surface and add nutrients to the soil. The chance of a large catastrophic wildfire, which could cause extensive erosion, would also be reduced with prescribed burning. Over the long term, soils would be stabilized as various plant communities become established. Runoff potential on slopes would be reduced as root development and depth become more prevalent. The establishment of desirable, perennial grasses, forbs and shrubs should eventually become dominant over shallow rooted annuals (e.g., cheatgrass).

No new roads would be constructed or created during the treatments, therefore, future soil disturbance from vehicular travel should be limited.

If necessary, erosion control and sediment trapping structures could be installed to reduce potential impacts.

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 less for the first few years as compared to the Proposed Action, as vegetation would be removed at a slower rate over a period of time. The impacts would be expected to be the greatest on steep slopes and after the second year of implementation when herbicidal effects to vegetation are noticeable. Seeding in areas with minimal understory would mitigate impacts. Once vegetation has reestablished, erosion and runoff potential would be the similar to those described under the Proposed Action.

Under the No Action Alternative, current erosion rates would continue until such time that a uncontrolled, large wildfire occurs. Following a large wildfire event, the soils would be more exposed and vulnerable to water events and the likelihood of large acres being burned exists. Higher erosion rates would occur and increased potential for gully formation. Sedimentation in lower drainage areas is expected to occur under such an event.

### Cumulative Impacts

Past actions 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, 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; Threatened, Endangered and Special Status Species; Migratory Birds**

There are approximately 132,088 acres of mule deer habitat within the North Spring Valley watershed, none of which are classified as crucial habitats. Of the total, approximately 22,358 acres occur within the project area (Map 3).

There are approximately 93,907 acres of pronghorn antelope habitat within the North Spring Valley watershed. Approximately 8,560 acres are crucial winter habitat and 26,391 acres are considered migration corridor. Of the total, approximately 20,886 acres occur within the project area (Map 4).

The North Spring Valley watershed is within the “Schell Range/Antelope Range” Sage Grouse Population Management Unit (PMU) and has 8 known sage grouse leks<sup>6</sup>. There are approximately 88,784 acres of sage grouse nesting habitat, 102,392 acres of sage grouse summer habitat and 80,661 acres of sage grouse winter habitat within the watershed. Of the total, approximately 7,000 acres and 3 known leks occur within the project area (Map 5).

There are approximately 130,218 acres of elk habitat within the North Spring Valley watershed of which approximately 13,547 acres are crucial summer habitat. Of the total, 22,358 acres occur within the project area (Map 6).

There are no records of threatened species, endangered species, special status species or raptor nesting sites within the watershed.

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. Ecological conditions should be improved and progress towards the potential natural community. There would be a net overall increase in perennial grasses and forbs and a regeneration in the existing shrub community. Woodland sites would remain and continue to provide soil protection on those sites as well as thermal protection and escape cover for many species. Ignition and mowing pattern designs that would minimize impact to any occupied pygmy rabbit habitat would be incorporated. A majority of the areas to be targeted for burning are not considered suitable habitat for pygmy rabbits. A mosaic treatment design would be incorporated to minimize impacts to pygmy rabbit habitat. Due to the existing fuel types and distribution, it is expected that the prescribed fire would burn in a mosaic pattern. 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. The Proposed Action is expected to meet the key components of sage grouse habitat requirements and is expected to achieve the resource management objectives at a more rapid rate than any of the alternatives.

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<sup>6</sup> leks an area where sage grouse assemble and display courtship behavior

Implementation of the Proposed Action is expected to benefit wildlife populations, the associated habitat conditions and assist the North Spring 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 forbs and a regeneration in the existing shrub community. Woodland sites would remain and continue to provide soil protection on those sites as well as thermal protection and escape cover for many species. Ecological conditions should be improved and progress towards the potential natural community. The Alternative Action is also expected to meet the key components of sage grouse habitat requirements. 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 North Spring Valley watershed in conforming with Rangeland Health Standard 3 (Habitat) as mentioned above under the Proposed Action.

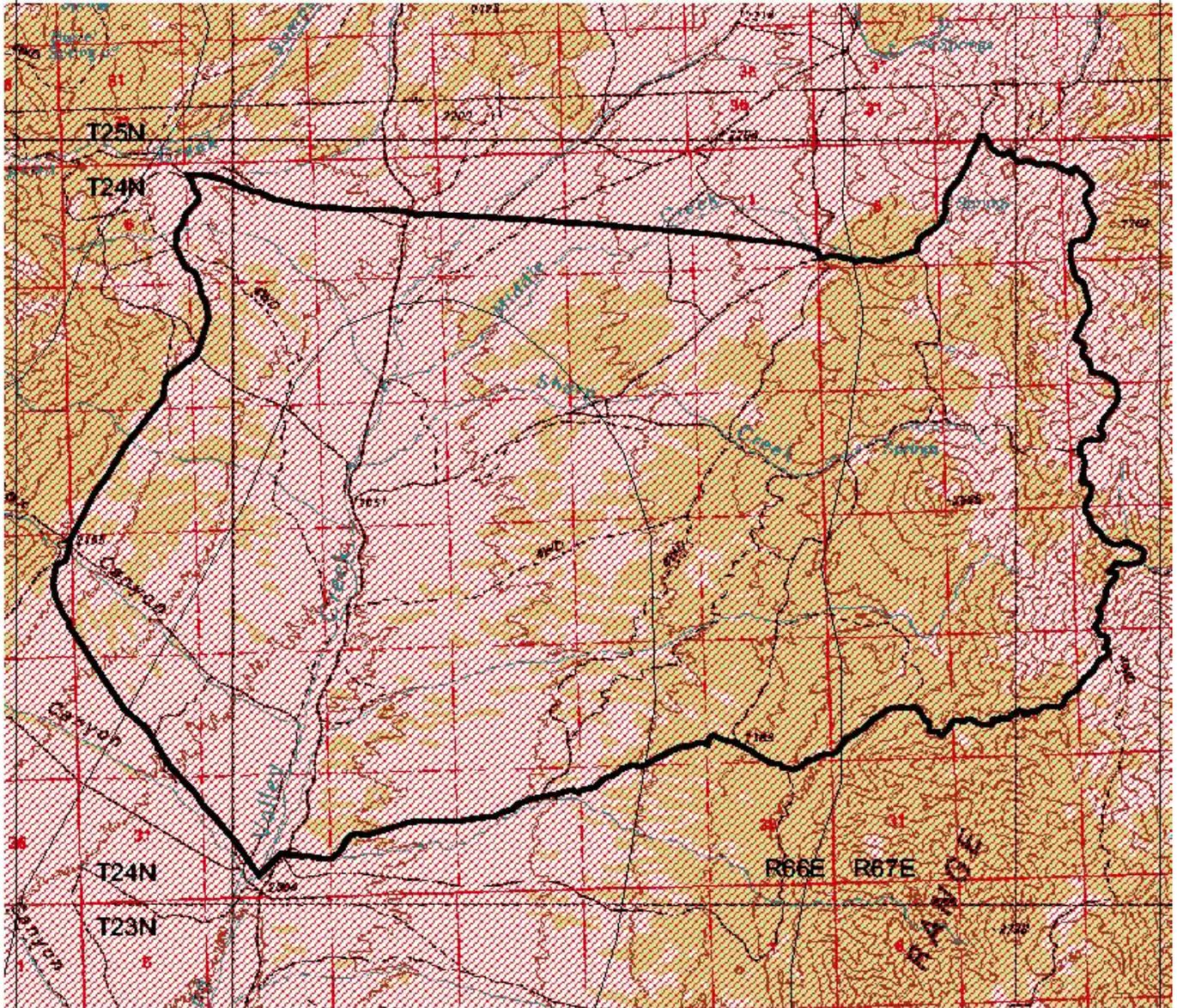
Under the No Action Alternative, resource conditions are expected to stay the same for a short-term period. The continued establishment of pinyon and juniper onto sagebrush ecological sites and the continued decline in the production, vigor and diversity of grass, forb and shrub species would result in a further decline in habitat conditions. Forage values would continue to decline in terms of both nutrition and palatability. The build-up of pinyon, juniper and decadent stands of antelope bitterbrush and sagebrush communities could result in an eventual catastrophic wildfire which has the potential to eliminate large acreages of existing habitat for an undetermined period of time. The loss of antelope bitterbrush communities would adversely affect mule deer winter range habitat. The increase in pinyon and juniper on sagebrush ecological sites would result in a decline in the local sage grouse populations. Under the No Action Alternative, conformance with Rangeland Health Standard 3 is not expected to be met over the long-term.

### Cumulative Impacts

Positive cumulative impacts on wildlife habitat within the project area include past seedings and water developments. Negative cumulative impacts on wildlife could include livestock grazing; fuel wood,

post cutting and Christmas tree harvest; road construction and maintenance; recreation activities including off-highway travel, camping and hunting; fence construction; uncontrolled wildfire and rights-of-way construction. Most of these activities are expected to continue to some degree in the future and would continue to impact wildlife in a similar fashion. However, as additional forage is provided through vegetative treatments, competition for resources and habitat would decrease, providing long-term cumulative benefits to wildlife. BLM policy and guidance on sage grouse; raptors; pygmy rabbits; migratory birds and threatened, endangered and special status species would help to reduce overall impacts to the species.

### Map 3 - Yearlong Mule Deer Habitat



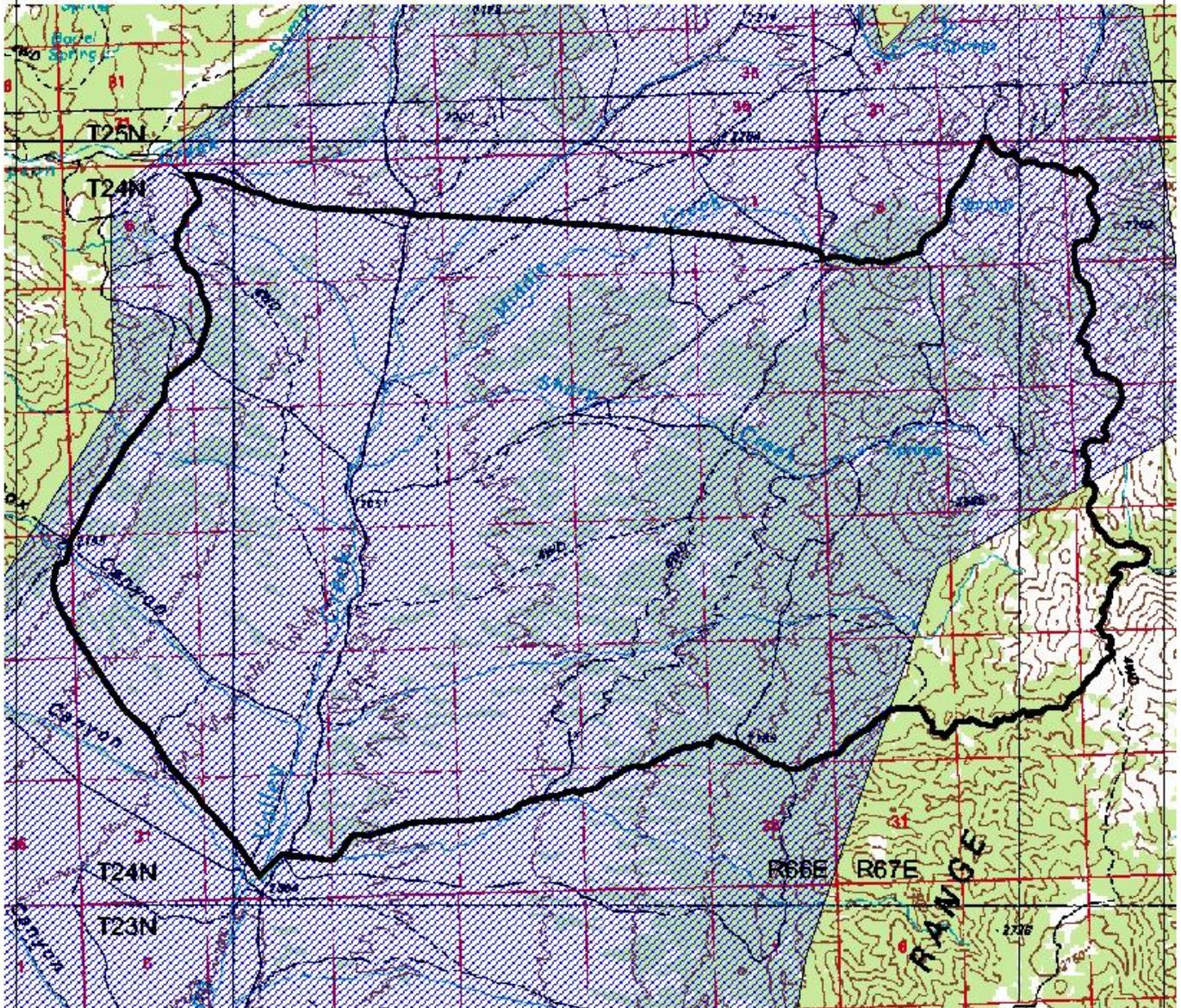
Scale: 1:70,000  
Date: May 2006  
Ely Field Office

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.

-  Project Area Boundary
-  Yearlong Mule Deer Habitat



### Map 4 - Yearlong Pronghorn Antelope Habitat



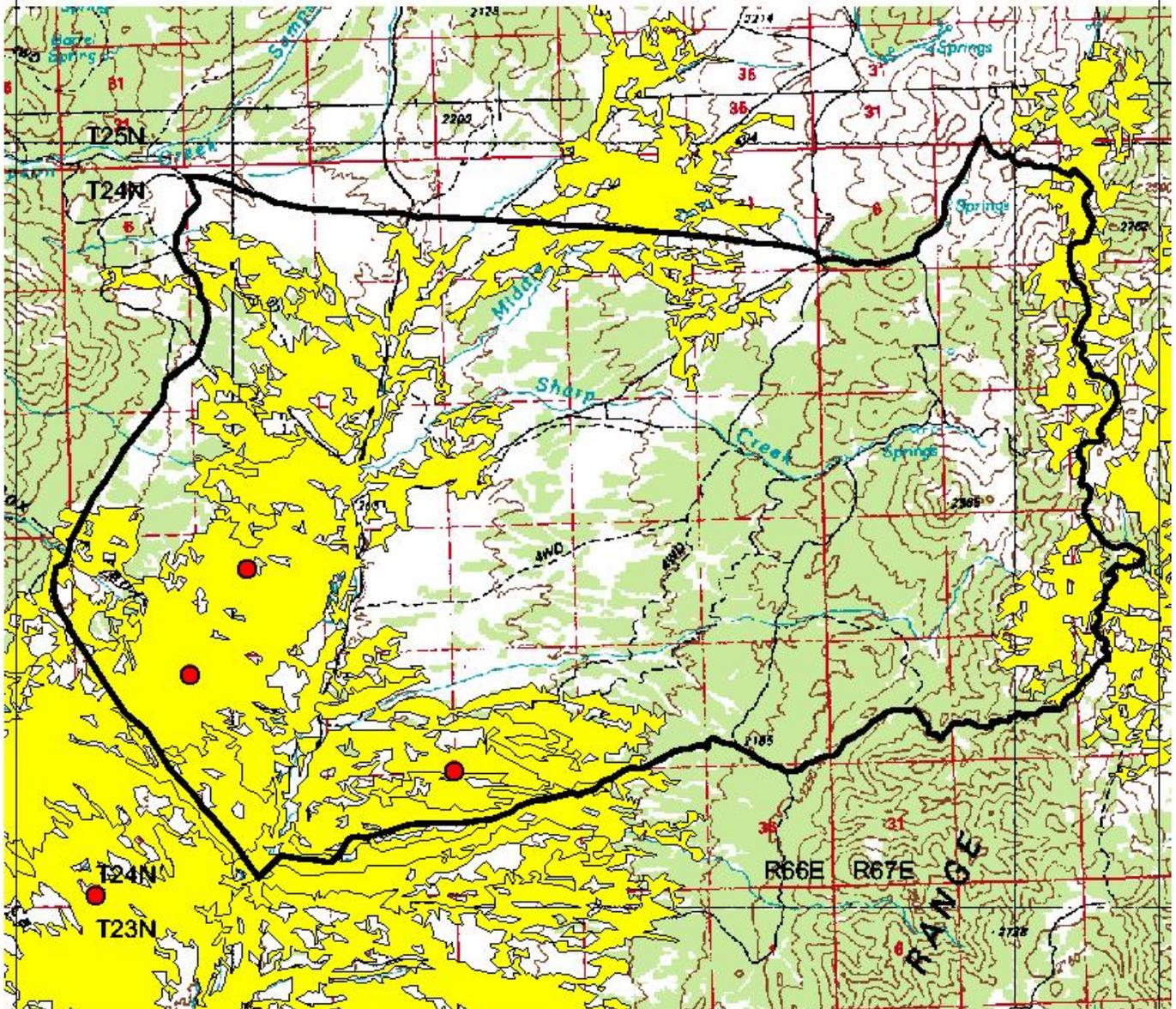
Scale: 1:70,000  
Date: May 2006  
Ely Field Office

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.

-  Project Area Boundary
-  Yearlong Pronghorn Antelope Habitat



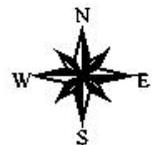
### Map 5 - Sage Grouse Habitat and Leks



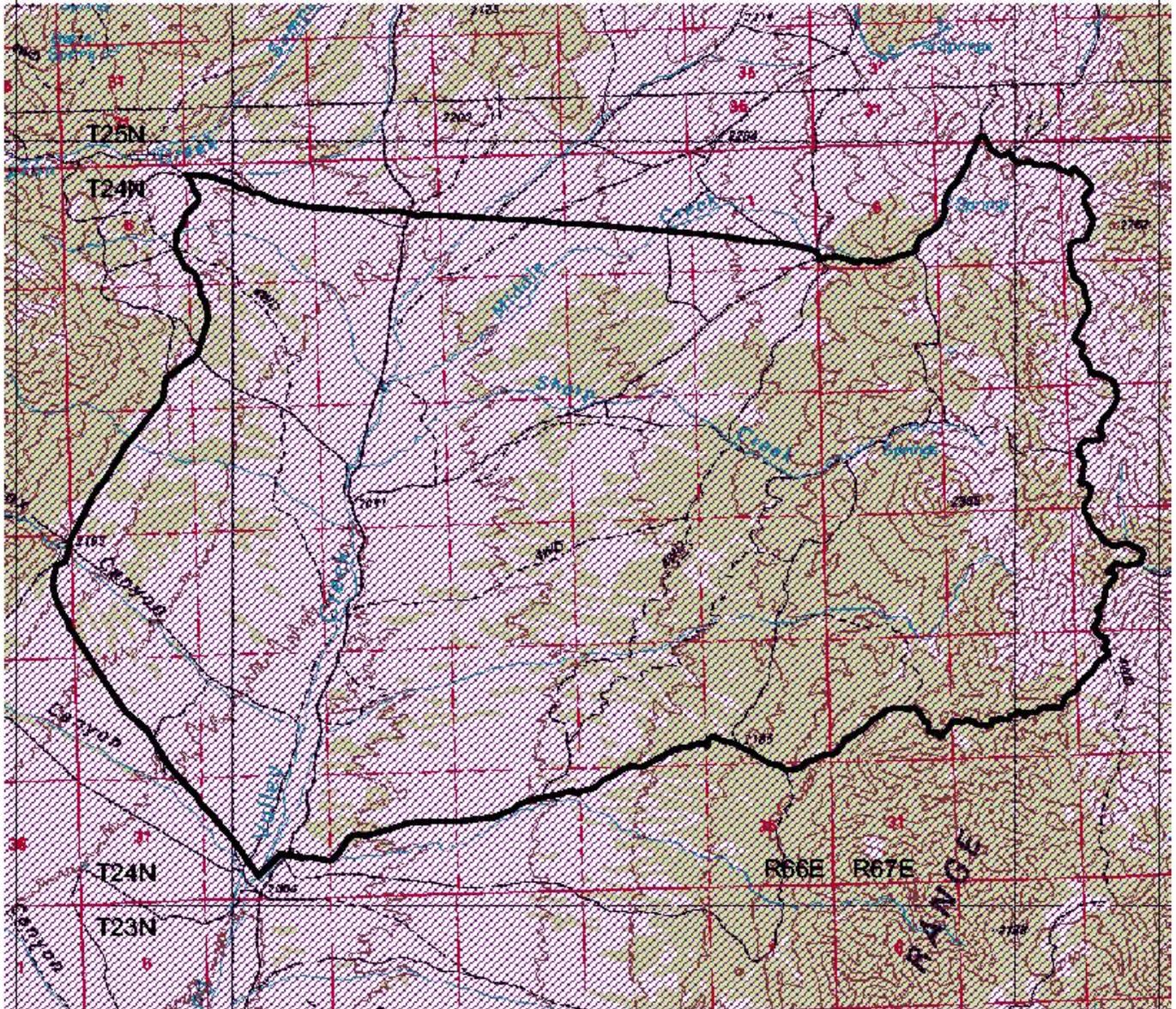
Scale: 1:70,000  
Date: May 2006  
Ely Field Office

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.

-  Project Area Boundary
-  Known Sage Grouse Leks
-  Sage Grouse Habitat



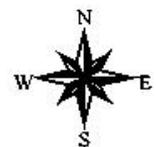
### Map 6 - Yearlong Elk Habitat



Scale: 1:70,000  
Date: May 2006  
Ely Field Office

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-  Project Area Boundary
-  Yearlong Elk Habitat



### 3.5 Riparian and Wetland Areas

There are perennial water sources (springs) within the proposed project area in upper Middle Creek and upper Sharp Creek. The lower riparian reaches along Middle Creek and Sharp Creek which occur within the proposed treatment area consist of ephemeral washes.

Proper Functioning Condition (PFC) assessments were conducted within the proposed project area during the North Spring Valley Watershed Assessment in 2002 and 2003. There were no lotic <sup>7</sup> riparian areas identified. PFC assessments were conducted on the following lentic <sup>8</sup> riparian areas:

Name	Location	Function	Trend	Acres	Remarks
Lower Middle Cr.	T25N, R67E Section 5	FAR *	Downward	5.50	moderate/heavy sheep and horse use, low flow, hummocking on some banks
Sharp Cr. Complex Spring No. 1	T24N, R67E Section 18	PFC **		0.10	Low water level
Sharp Cr. Complex Spring No. 2	T24N, R67E Section 18	PFC		0.10	Low water level
Sharp Cr. Complex Spring No. 3	T24N, R67E Section 18	PFC		0.10	Low water level

\* FAR - Functioning at Risk

\*\* PFC - Proper Functioning Condition

Under the Proposed Action, the removal of conifer trees, sagebrush plants and other upland species which occur near springs or along ephemeral washes through prescribed burning or hand cutting methods may likely improve and enhance riparian values and improve overall riparian habitat conditions over the long term. The removal of upland species such as juniper and sagebrush is expected to result in an increase in desirable riparian species over the long term and may result in the eventual presence of surface water along ephemeral washes. An increase in surface water would encourage the establishment of desirable riparian woody species, riparian grasses or riparian grass-like species which would improve bank cover and stability on soils which are vulnerable to scouring and degradation from natural activities such as flooding. Any potential hand cutting of trees could be lopped and scattered to avoid deep litter piles and to provide protective cover to reduce soil movement and flooding along ephemeral washes during natural precipitation events.

Implementation of the Proposed Action would help maintain PFC at spring sources and assist ephemeral washes along lower Sharp Creek and lower Middle Creek over the long term in conforming with Rangeland Health Standard 2 (Riparian and Wetland Sites) which states the following:

"Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

<sup>7</sup> lotic Relating to actively moving waters (e.g., streams, rivers, etc.)

<sup>8</sup> lentic Relating to still waters; not flowing (e.g., lakes, ponds, swamps, etc.)

As indicated by:

- Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows. Elements indicating proper functioning condition such as avoiding accelerating erosion, capturing sediment and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:
  - Width/Depth ratio;
  - Channel roughness;
  - Sinuosity of stream channel;
  - Bank stability;
  - Vegetative cover (amount, spacing, life form);
  - Other cover (large woody debris, rock)
- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.
- Chemical, physical and biological water constituents are not exceeding the State water quality Standards."

Under the Alternative Action, herbicides would not impact riparian or wetland areas due to a "no treatment" buffer zone that would be implemented near these areas. Adherence to the Standard Operating Procedures and Project Design Features for Herbicide Applications as identified in the *Final Environmental Impact Statement and the Record of Decision for Vegetation Treatment on BLM Lands in Thirteen Western States* would ensure no adverse impacts would occur to riparian and wetland areas. The Alternative Action would help ensure maintenance to existing spring sources. The overall long term impacts to ephemeral washes in regards to the establishment of surface water and riparian vegetation would be very similar to those identified under the Proposed Action, however, these benefits would likely occur at a slower rate. Implementation of the Alternative Action would help maintain PFC at spring sources and assist ephemeral washes along lower Sharp Creek and lower Middle Creek over the long term in conforming with Rangeland Health Standard 2 (Riparian and Wetland Sites).

Under the No Action Alternative, impacts to riparian and wetland areas located within the proposed project area but outside the proposed treatment area could occur in the event that a large wildfire burned and resulted in large scale vegetative destruction. Following an event of this nature, major run-off events would be expected to impact drainages and riparian areas through soil deposition and erosion patterns. Erosion potential following an uncontrolled wildfire would likely be high due to the potential size and intensity of a wildfire. The condition of spring sources would likely decline over the long term. The potential for ephemeral washes to develop surface water and establish riparian vegetation over the long term would not occur due to the continued presence of upland species in and along these areas. The ability for these areas to meet Rangeland Health Standard 2 (Riparian and Wetland Sites) and PFC requirements would not be possible.

It is anticipated that the water flow at spring sources would increase more than or similar to the Proposed Action and Alternative Action due to widespread vegetation removal that would occur under a

natural wildfire event. Decreased intake by burned vegetation would cause flow at spring sources to increase. However, sedimentation that would occur as a result of erosion associated with a large wildfire could destroy existing riparian vegetation.

### Cumulative Impacts

Some of the past and current impacts on riparian/wetland areas within the project area include moderate to heavy sheep and wild horse use, low water levels and hummocking. Other impacts to riparian areas include, but are not limited to, water diversions from pipelines, road construction and maintenance, noxious weed infestations, recreational activities including off-highway travel, fence construction along riparian areas (creates livestock trailing affects), uncontrolled wildfire and rights-of-way construction. Most of the existing activities are expected to continue to some extent in the future and would continue to impact riparian/wetland areas in a similar fashion. The potential for additional activities to occur in the future also exists. Current vegetative treatments combined with future vegetative treatments would assist in approving overall riparian/wetland health. Riparian/wetland policy and guidance would also help to reduce overall impacts to riparian resources.

### **3.6 Wild Horses and Burros**

The North Spring Valley watershed contains a portion of the Antelope Wild Horse Herd Management Area (HMA). The Appropriate Management Level (AML) for the entire HMA is 324 wild horses. The Ely District's Antelope HMA is managed with the Elko District's adjacent Antelope Valley HMA. Wild horses move freely across public lands. The proposed project area is used by wild horses on a regular basis. Wild horse use occurs primarily in the summer and fall, but some year-round use does occur by individual bands.

Under both the Proposed Action and the Alternative Action, additional forage should be provided and the habitat structure should be changed for wild horse populations. Currently, wild horses in North Spring Valley use the pinyon and juniper for shelter and escape cover. The pinyon and juniper are important habitat components for wild horses, but the proposed treatment would not eliminate enough protective and escape cover to adversely affect the existing wild horse population. The proposed treatment should result in a subsequent increase of perennial, herbaceous plants which are important for the maintenance of wild horses, rangeland health and multiple other watershed values.

The increased activity within the project area could lead to increased shyness by resident wild horses. Wild horses are not expected to be harmed by prescribed burning activities as they will readily avoid fire.

Under the No Action Alternative, no changes in management would occur. Habitat for wild horses would continue to change resulting in more pinyon and juniper woodlands, more decadent shrubs and less perennial, herbaceous plants for forage. There would be increased user conflict between livestock, wildlife and wild horses due to competition for desirable forage. Rangeland health would continue to decline which would affect multiple watershed values over the long-term.

## Cumulative Impacts

Positive cumulative impacts on wild horses within the project area include past seedings and water developments. Negative cumulative impacts on wild horses could include livestock grazing; fuel wood, post cutting and Christmas tree harvest; road construction and maintenance; recreation activities including off-highway travel, fence construction; uncontrolled wildfire and rights-of-way construction. 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 wild horses. BLM policy and guidance on wild horses and the implementation of appropriate management levels (AML) would help to reduce overall impacts.

### 3.7 Livestock Grazing

The project area lies within portions of the Sampson Creek No. 10105, Chin Creek No. 10104 and Tippet No. 10106 grazing allotments. The permitted grazing use on these allotments is as follows:

#### Sampson Creek Allotment No. 10105

Livestock	Season of Use	Scheduled AUMs	Permitted Use (AUMs)		
			Active	Suspended	Total
2254 Sheep	5/5-7/15	1126	1327	265	1592
397 Sheep	7/16-9/30	201			

#### Chin Creek Allotment No. 10104

Use Area	Livestock	Season of Use	AUMs	Permitted Use (AUMs)			
				Active	Suspended	Conservation Non-Use	Total
Spring Valley	3049 Sheep	4/15-7/15	1844	1844	130	779	13245
Antelope Range	725 Sheep	7/1-9/30	439	439		2446	
Antelope Valley	512 Cattle	11/1-5/31	3570	3570		442	
Black Hills	1036 Sheep	9/20-4/30	1519	1519		2076	

#### Tippet Allotment No. 10106

Use Area	Livestock	Season of Use	AUMs	Permitted Use (AUMs)			
				Active	Suspended	Conservation Non-Use	Total
Kern Mountains	Cattle	5/1-10/31	1313	1844	815	4240	13615
	Sheep	6/1-9/30	1604	439			
Antelope Valley	Cattle	11/1-5/15	3570	2074			
	Sheep	4/16-12/15		2326			
Antelope Range	Sheep	7/1-9/30	1519	484			
Spring Valley	Cattle	5/1-10/31		684			
	Sheep	4/16-9/30		2004			
Schell Cr. Range	Sheep	7/1-9/30		604			

The targeted treatment areas for the project proposal occur only within the east side of the Sampson Creek Allotment; the Spring Valley and Antelope Range (west portion) Use Areas within the west side of the Chin Creek Allotment and the Antelope Range Use Area of the Tippet Allotment (Map 7). "Need More Sheep Company" is the only permittee on these allotments within the proposed project area. Sheep are the only kind of livestock permitted to graze on the use areas which are proposed for

treatment within these allotments. The proposed project area is primarily a spring use area. Summer use occurs on the mountain outside the targeted treatment area.

Under the Proposed Action, rangeland conditions are expected to improve following implementation of the proposed vegetation treatments. The health, vigor, recruitment and production of perennial grasses, forbs and shrubs would improve which would provide a more palatable and nutritional source of forage for livestock, wildlife and wild horses and also protect the soil resource and other associated watershed values. The rejuvenation of decadent, even-aged stands of sagebrush and invading pinyon and juniper woodlands would assist in improving the ecological condition of sites within the proposed project area. No reductions or increases in permitted livestock use would occur as a result of increased forage availability from the proposed project. Implementation of the Proposed Action would assist those portions of allotments within the project area in conforming with Standard No. 1 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 achieving the potential natural community.

Implementation of the Proposed Action would eventually improve overall livestock performance and improve the economic stability of the permittee due to an increase in the quantity and quality of grasses and other herbaceous forage which are important to livestock grazing. With an increase in the production and vigor of herbaceous plant communities, the forage base would probably more adequately support the existing herd sizes and would improve overall livestock performance (e.g. increased sheep weights, increased lambing crops, increased weaning weights, etc.). The Chin Creek, Sampson Creek and Tippet allotments support a traditional and historical lifestyle for a livestock permittee in North Spring Valley. The permittee is dependent on these allotments to help generate a large portion of his annual income. Implementation of the Proposed Action should eliminate any future potential need for reductions in stocking rates which would adversely affect the permittee's long-term economic goals and objectives and reduce potential conflicts with wildlife and wild horses.

Implementation of the Proposed Action may have a short-term economic affect on the permittee due to a mandatory rest period of the treatment areas. The rest period is necessary in order to ensure the establishment, protection and long-term viability of the vegetation enhancement project. The rest period would be for a minimum of two complete growing seasons or until vegetation management objectives have been met. The rest period may be extended pending the rate of progress towards vegetative establishment. The overall impacts to the grazing permittee on the Sampson Creek, Chin Creek and Tippet allotments would be minimal, as the permittee herds livestock and can avoid the treatment areas while they are being rested or deferred. It is not likely, but if vegetative re-establishment is prolonged as a result of unforeseen circumstances, the permittee may be required to find alternative grazing lands until such time that the treated areas have established sufficient vegetative recovery in order to accommodate his livestock operation. The possible issuance of temporary trailing permits could be issued in order to allow the permittee to trail livestock from one authorized use area to another.

Seed germination, drought-related influences, wildfire or other natural unforeseen events could potentially affect the rate of vegetative establishment. The type of treatment implemented may also affect the rate of recovery (e.g. mechanical, chemical, prescribed fire, etc.). With adequate understory vegetation, prescribed burn treatments are generally completed at a much faster rate than mechanical or chemical methods. Under normal precipitation levels and with proper seed sources, a prescribed burn is

also expected to recover at a faster rate than most mechanical and chemical methods. In the long-term, the Proposed Action should benefit the permittees by providing more palatable, nutritious forage for livestock due to the establishment of seeded perennial vegetation and due to the recovery and improved vigor of existing vegetation. Overall, more palatable vegetation should be available on the allotments and result in a better balance with the current permitted livestock use. 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.

Existing projects which occur within the proposed project area include the Middle Creek Pipeline, Sharp Creek Fence, Sharp Canyon Riparian Fence, North Creek Pasture Fence and a windmill (Map 8). The Robison Henroid Fence is located adjacent to the proposed project area. The existing fences, pipelines and the windmill would be inspected and repaired if damaged occur during implementation of the proposed treatments.

Under the Alternative Action, long term impacts to livestock performance would be 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. Livestock would not be allowed in the treatment area during herbicide application. This would not impact the livestock permittee during the first year, since the main season of use within the project area is during the spring and early summer. The project area would be closed for approximately three years after the effects of the herbicide were realized (one or two years following treatment). The potential for meeting vegetation objectives through herbicide application (Alternative Action) is expected to take longer than through prescribed burning practices (Proposed Action), although the short term impacts and long term resource benefits are expected to be very similar.

Under the No Action Alternative, there would be no short term impacts to the current livestock grazing on the Sampson Creek, Chin Creek and Tippett allotments. In the long term, forage species for livestock would continue to diminish as pinyon, juniper and sagebrush 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 native and non-native, 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 permittee 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

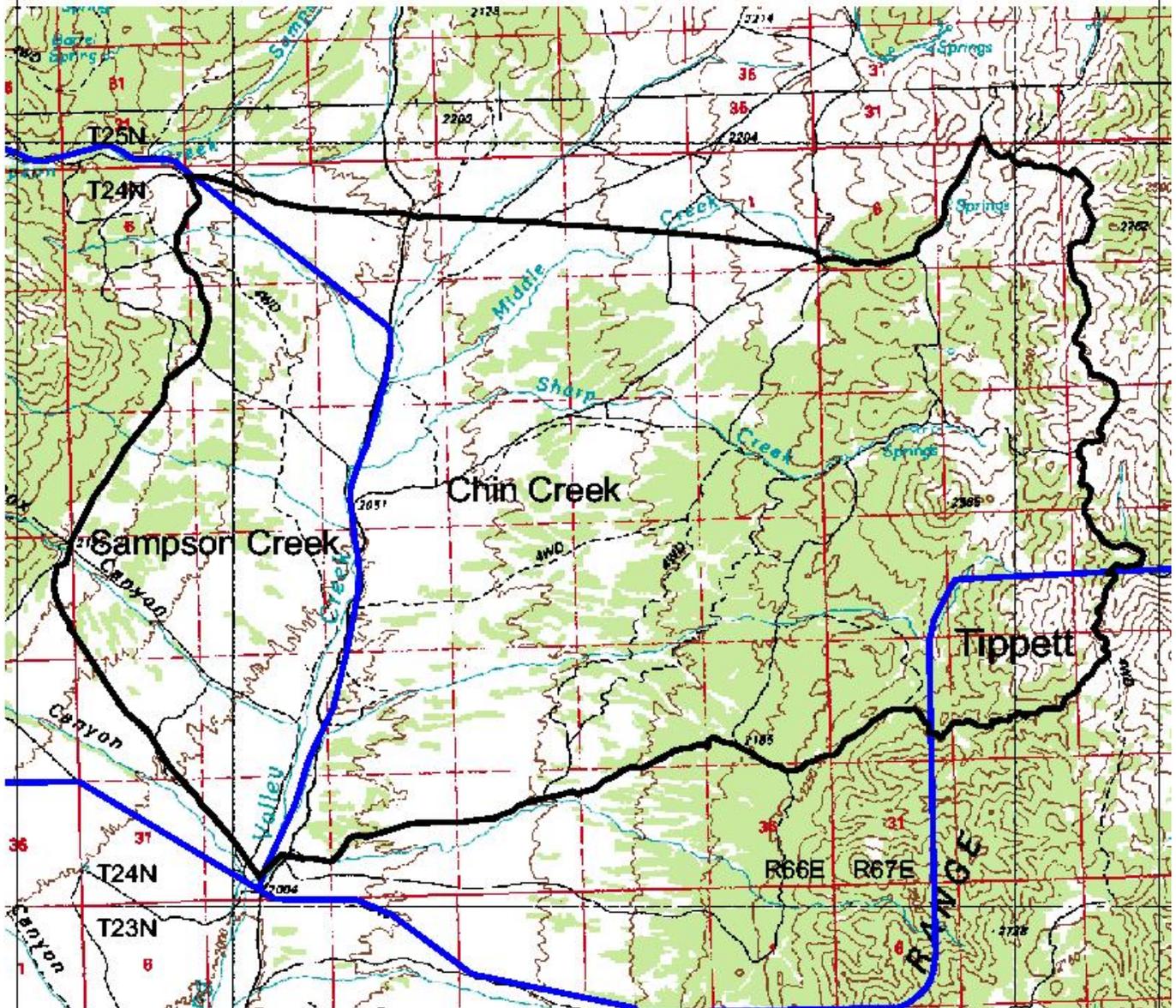
herbaceous vegetation and preventing those ecological sites from achieving the potential natural community.

The No Action Alternative is expected to eventually affect overall livestock performance and the economic stability of the permittees due to a reduction in the quantity and quality of grasses and other herbaceous forage which are important to sheep and other grazing animals. With a reduction in the production and vigor of herbaceous plant communities, the forage base would probably not adequately support the existing herd sizes and would adversely affect livestock performance (e.g. increased sheep weights, increased lambing crops, increased weaning weights, etc.). The Chin Creek, Sampson Creek and Tippet allotments support a traditional and historical lifestyle for the permittee in North Spring Valley. The permittee is dependent on the allotment to help generate a large portion of his annual income. The need for a future reduction in stocking rates would likely adversely affect the permittee's long-term economic goals and objectives.

### 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. The proper management of livestock grazing is an important factor 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. Long lasting effects to the permittee may be longer if a combination of both the Proposed Action and the Alternative Action were implemented. Livestock grazing could be excluded or deferred from the treatment areas for a longer period of time if both prescribed fire and herbicides were applied, as the response times and recovery periods would occur at different rates. 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.

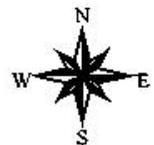
### Map 7 - Allotment Boundaries



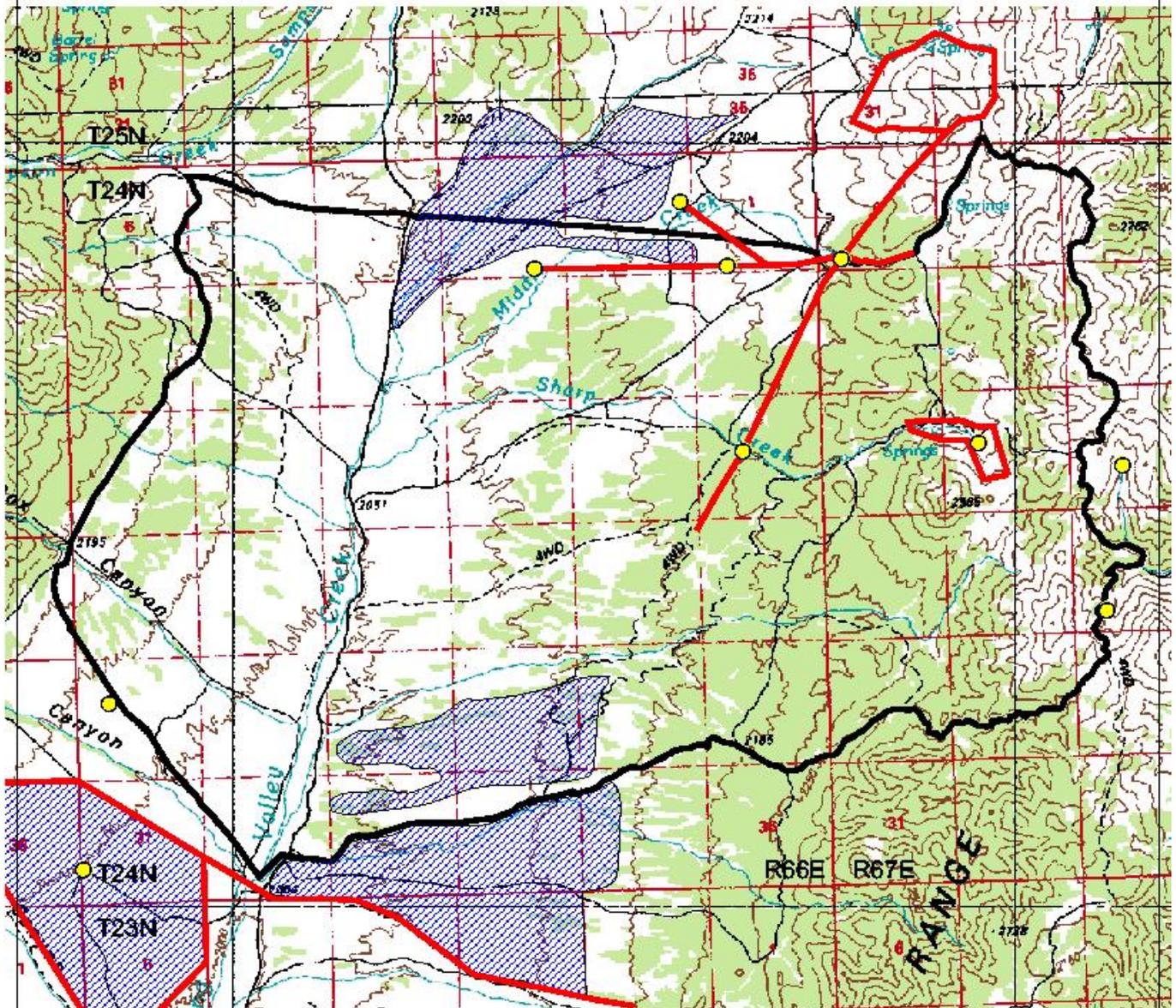
Scale: 1:70,000  
Date: May 2006  
Ely Field Office

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.

-  Project Area Boundary
-  Allotment Boundaries



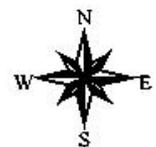
### Map 8 - Range Projects



Scale: 1:70,000  
 Date: May 2006  
 Ely Field Office

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.

-  Project Area Boundary
-  Windmills, Troughs, Spring Developments
-  Fences, Pipelines
-  Seedings



### 3.8 Wilderness Values, Visual Resource Management and Recreation

No special wilderness designations occur within the proposed project area. There is a citizen group proposal for wilderness designation in the Becky Peak area. The project proposal area is outside the citizen proposed wilderness area. Recreation opportunities within the area include hunting, heritage tourism, off-highway vehicle use and horseback riding.

The project area occurs within a Visual Resource Management (VRM) Class IV zone. The objective of Class IV zones is to provide for management activities which require major modification of the existing character of the landscape.

Under the Proposed Action, there would be impacts to visual resources from the prescribed burn and mowing activities. The proposed mitigation measures would exceed the visual resource objectives for the action area. 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. Mitigation measures to rehabilitate any necessary fire line would be sufficient to minimize future cross country vehicular travel. Mowing activities may lead to future cross country travel by reducing vegetation barriers to vehicles. For the short term, hunting opportunities and wildlife viewing opportunities would be affected from the prescribed burn due to the short term removal of vegetation for wildlife forage and cover. 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. Based on existing vegetation and fuel loading, the prescribed burn pattern is expected to occur in a mosaic fashion. Sufficient vegetation for thermal cover and protection would remain within the prescribed burn parameter and outside the prescribed burn 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. 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, no immediate direct impacts to visual resources or recreational opportunities would occur. 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 exists for impacts to visual resources and other recreational opportunities in the long term if a large, uncontrolled wildfire were to occur.

#### Cumulative Impacts

Cross country vehicular travel within the proposed project area has occurred for several years. The Proposed Action and Alternative Action may contribute to impacts of past and present cross country vehicular travel by allowing for easier access by removing existing vegetative barriers. Future actions such as 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**

Very limited historical documentation (no mining activities) is known to exist within or immediately adjacent to the proposed project area which suggests that the area may have not been a historically important development of eastern Nevada, except for possible limited agricultural purposes such as livestock grazing and a possible transportation corridor. The nearest modern ranch is located approximately 5 to 10 miles from the project area.

Based on an existing Class I Inventory and a Record Search, the project area may have potential for low to moderate density of cultural sites, especially along the benches of North Spring Valley. Cultural site densities for both prehistoric and historic features dramatically decline as elevation increases. There are limited exposures of bedrock and very low potential for rock shelter type sites.

The results from existing Class I inventory work has identified 16 cultural sites and 4 isolated finds within the project area. The cultural sites include 13 prehistoric, 2 historic and one multi-component site. Of these 20 sites, 5 are listed as potentially eligible to the National Register. One site is a known site listed eligible by default because the site has not been formally recorded. The primary prehistoric site type consists of lithic scatters. No rock art or other prehistoric type features have been recorded or known to exist.

Under the Proposed Action, fire sensitive cultural and historic resources could be affected. Prescribed burning would have varying degree of impacts to any resource depending on the intensity and duration of the treatment. There is a possible risk that fire could burn over some resources and mechanical equipment could damage or destroy some resources, however, this risk would be minimal as mitigation actions would be implemented prior to conducting the proposed treatments in order to minimize impacts to eligible cultural resources and to any prominent fire sensitive historic structures.

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 was insignificant. 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 negatively 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 and wildland fire use 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 North Spring 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 catastrophic fire 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**

The proposed project area is within the Northern Mountains, Northern Benches and Schell Fire Management Units (Map 9) as described in the Ely District Managed Natural and Prescribed Fire Plan (2000).

Historically, the North Spring 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 is 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.

Closed canopy pinyon/juniper woodlands are located throughout the mid and upper elevations of the project site. An open canopy pinyon and juniper woodland is developing and establishing on sagebrush/grass ecological sites. In the higher elevations, woodland sites are present where very little understory vegetation exists. At the lower elevations, pinyon and juniper has established on traditional sagebrush sites as identified by the USDA-NRCS ecological site guides. In areas where the pinyon and juniper are more open, grasses and sagebrush are the predominate carriers of the fire. In these stands,

the pinyon and juniper contributes to the fire behavior by increasing the intensity of the fire and contributing to faster spread through the preheating of adjacent fuels and spotting behavior.

Fire intensity and frequency have shifted with changes in vegetation structure and composition. The proposed project area and surrounding watershed are rated as FRCC 3. This indicates that the fire regime and vegetation characteristics have departed from historical conditions.

Over the past 20 years (1980-2000), 36 small fires (less than 5 acres) have burned within a 10-mile radius of the North Spring Valley center point. Of the total, 7 have occurred within the proposed project area. According to available records, only one large fire has occurred in the immediate area. The Sampson Fire (1,190 acres) occurred in 2004.

Based on historical weather data and running fire behavior models in the Spring Valley area, the chances for catastrophic fires are high. Weather data was gathered from Forest Service and Bureau of Land Management Remote Automated Weather Stations (RAWS) for a five year period (2000-2005). The criteria gathered was for the number of days in a year when the relative humidity is 15 percent or less, average wind speed 15 miles per hour or greater at 20 feet, temperatures 80 degrees or greater and one hour time-lag fuel moisture of 5 percent or less. These weather parameters are very conservative. It is not unusual to have single digit relative humidity, wind speeds of 35 miles per hour when a cold front passes, temperatures of 90 degrees or greater and one hour time-lag fuels at 2 to 3 percent.

Using the data from the five year period, the Spring Valley area would experience 176 days during the five year period in which the area would be in "High Fire Danger". The second set of criteria mentioned above would equate to "Very High Danger" to "Extreme Fire Danger" as identified in from the National Fire Danger Rating System (NFDRS).

Using the criteria from the five year average and inputting it into the fire prediction computer modeling system BEHAVE PLUS 3.01, extreme fire behavior conditions can be expected. Some of the outputs from the model include:

1. Fire behavior outputs such as flame length, intensity, rate-of-spread and size
2. Spotting distance is the distance an airborne ember will be carried
3. Probability of ignition is the probability of a fire starting from any source. This is usually in a percent comparing the ratio of embers that could start fires to the number that most likely will start fires.

Utilizing the five year average weather conditions, BEHAVE PLUS predicts a 64 percent probability of ignition, and a fire size of 1,630 acres after six hours. However, with a more likely scenario of 90 degrees, relative humidity in the single digits and wind speeds of 35 miles per hour, the probability of ignition would be 100% with a fire size of 14,752 acres.

Under the Proposed Action, fire behavior would be decreased as a result of reduced fuel loading. Future natural fires would be less extensive and smaller in size. Smaller wildfires would be easier to manage, reducing the risk to multiple natural resources, private lands, private withholdings, physical structures associated with 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 catastrophic fire event reduces 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.

Running BEHAVE PLUS with the representative after treatment Fuel Model 2 (timber/grass understory) is much the same as the pre-treatment Fuel Model 6, except the model shows the potential for the fire to be much larger. The BEHAVE PLUS model tends to over-predict fire spread, etc. from the fact that the model assumes continuous fuels, constant slope and constant wind speeds. BEHAVE PLUS does not model crown fire spread, which would be typical of a large fire event in Fuel Model 6 (pre-treatment). Thus, the above scenario for Fuel Model 6 is underestimated in its output because the model, again, will not model a crown fire.

There are two significant differences between the current condition Fuel Model 6 and the after treatment Fuel Model 2. They are crown fire potential and moisture of extinction. When fire burns under the above conditions, Fuel Model 6 will burn as a crown fire. A crown fire occurs when there is enough fuel to allow the fire to get into the tops of the trees and there is sufficient wind to push the fire through the tree tops. When this occurs, the fire is not only very unpredictable, but it burns regardless of the amounts of fuel on the ground. This is important to fire fighters from the standpoint of controlling the fire. A technique called "burning out" is where fire is ignited along a control line to remove the fuels for when the fire reaches that point. It is much easier to burn out a line with fuels that stand 12 inches tall as compared to fuels that stand 20 feet or more. The other difference between the models is the moisture of extinction. Moisture of Extinction is that moisture in a fuel at which a fire activity will smolder and not produce measurable fire spread. The moisture of extinction for Fuel Models 6 and 2 is 25 and 15 respectively. This is an important factor for fire behavior. During the summer months, relative humidity can get into the single digits during the day and may recover into the teens at night. A fire in Fuel Model 2 will lay down when the relative humidity reaches approximately 15 percent but a fire in Fuel Model 6 will not until the relative humidity reaches approximately 25 percent. There are more nights during the summer when relative humidity remains in the teens than in the 20's and above. A Fuel Model 2 fire could be controlled more easily than a Fuel Model 6 fire.

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.

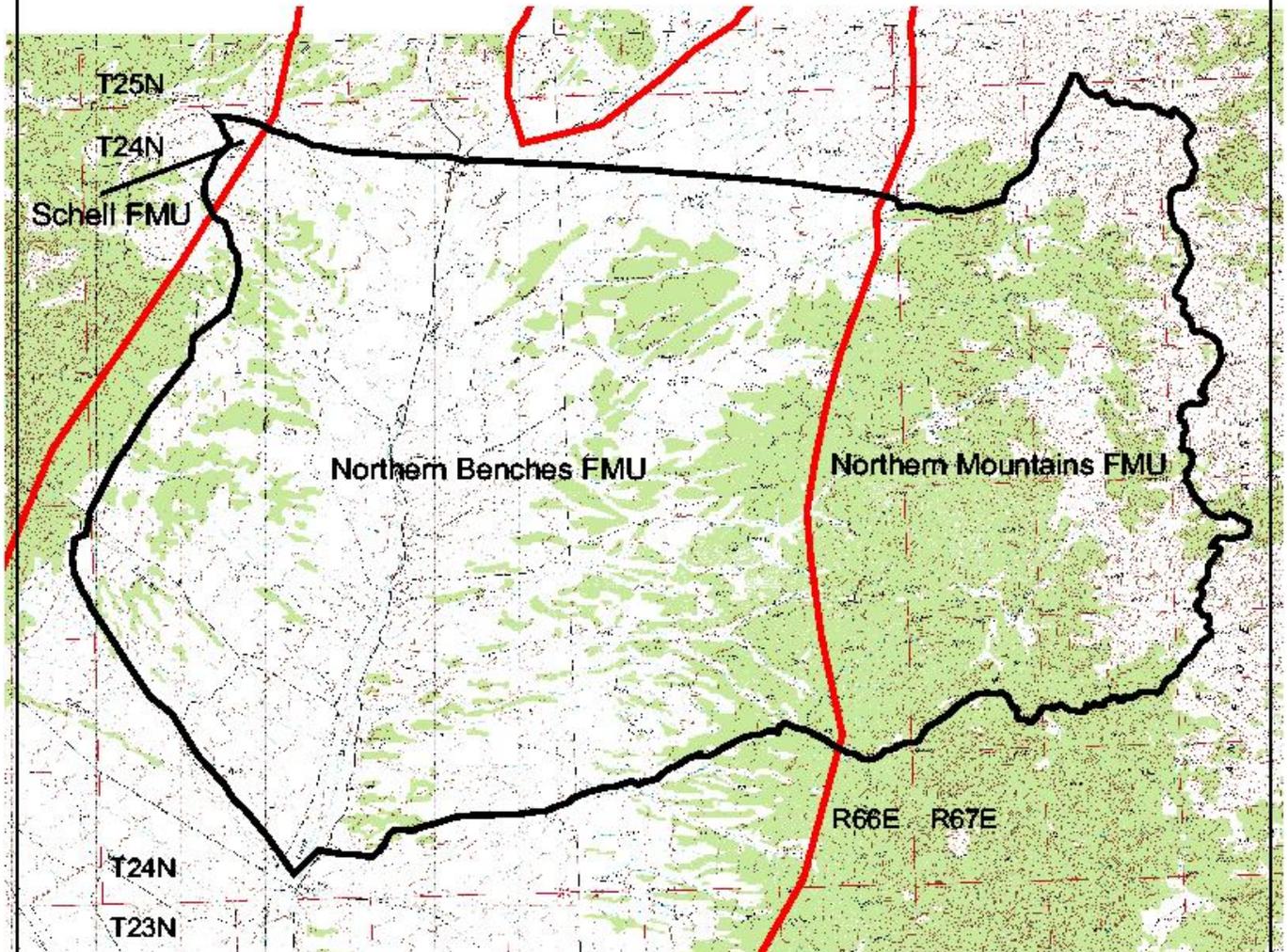
Under the No Action Alternative, fuels would continue to increase which would also increase the burn intensity potential. The risk of a large catastrophic wildfire would remain much greater. If a wildfire does occur in the area, fuel loading and the associated fire intensity would be reduced. In comparison 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 fuels management activities and possible wildland fire use for resource benefit. With planned disturbances such as prescribed fire and wildland fire use for resource benefit, opportunities for detecting additional noxious weed infestations prior to the disturbance would occur through pre and post monitoring practices which are associated with planned activities. Implementing the Proposed Action, the Alternative Action or a combination of the two actions would improve the ability of the vegetation community to compete with existing noxious weeds and invasive species and assist in preventing further establishment of these species. Completing more treatments (e.g., prescribed fire, wildland fire use and wildfire) in patches over a period of time would reduce the potential for invasion of these species over a large area. Past, present and future treatments would allow the areas to become more resistant to invasions and infestations by increasing the composition of desirable, perennial, understory species that would successfully compete with noxious weeds and invasive species. Overall, cumulative impacts from all past, present and future actions would be minimal and FRCC I would be achieved over the long term.

### Map 9 - FMUs within North Spring Valley Project Area



Scale: 1:70,000  
Date: May 2006  
Ely Field Office

-  Project Area Boundary
-  FMU Boundaries

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.



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

Although noxious weed infestations have been documented within the project area boundary, no infestations have been documented within the targeted treatment area. The only infestations on record occur along the Sharp Creek and Tunnel Canyon riparian corridors. These infestations include Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), musk thistle (*Carduus nutans*), Russian knapweed (*Centaurea repens*) and spotted knapweed (*Centaurea maculosa*). Cheatgrass (*Bromus tectorum*) is an invasive, annual species which also occurs within the project area. Refer to Appendix 9.1 (Risk Assessment for Noxious Weeds) and Map 10 for a detailed description of noxious weeds and invasive species within the project area boundary.

Under the Proposed Action, noxious weeds which have been identified within and surrounding the project area could increase and new noxious weeds and invasive species could become established. Cheatgrass could be expected to increase following prescribed fire in the absence of existing perennial, understory grasses and forbs and/or the absence of seeding the treatment areas. Many thistle species are progressive during wet spring seasons and could become established before desirable, perennial grasses, forbs and shrubs become established.

Depending on fire severity, vegetation type, pre-fire abundance, location of noxious weed plants and seeds and plant competition, noxious weeds or invasive species could have an opportunity to increase. New species could be introduced to the area as a result of prescribed fire vehicles and activities. However, conformance with the Ely District Noxious Weed Prevention Schedule would reduce this risk. If fire intensity is low to moderate and understory vegetation responds rapidly, then noxious weeds would not be expected to establish within the project area. If sufficient, desirable, perennial understory vegetation exists, then these desirable species should become established and out-compete any potential noxious weeds or invasive species. If minimal desirable, perennial understory species exists, then seeding following treatment implementation should allow for the establishment of desirable species and competition from noxious weeds and invasive species should be limited.

Mitigation measures identified in the Risk Assessment for Noxious Weeds (Appendix 9.1) would be implemented as part of the Proposed Action which would minimize the potential for noxious weed establishment.

Under the Alternative Action, surface disturbing activities would be minimal which would reduce the potential for the spread of noxious weed species. Seeding would not be conducted until most of the treatment effects were realized. If minimal desirable, perennial grasses and forbs exist on areas which respond quickly to the herbicide application, this could potentially allow for the establishment of noxious weeds and invasive species weeds to establish due to the delay in seeding. Areas with a rapid herbicide response and a delay in seeding could become vulnerable for noxious weed and invasive species establishment due to the exposed soil surface. However, it is expected that a majority of the treatment area would respond to the chemical in a timely manner and on an even scale which would allow for seeding to be conducted prior to the establishment of any noxious weeds and most invasive species.

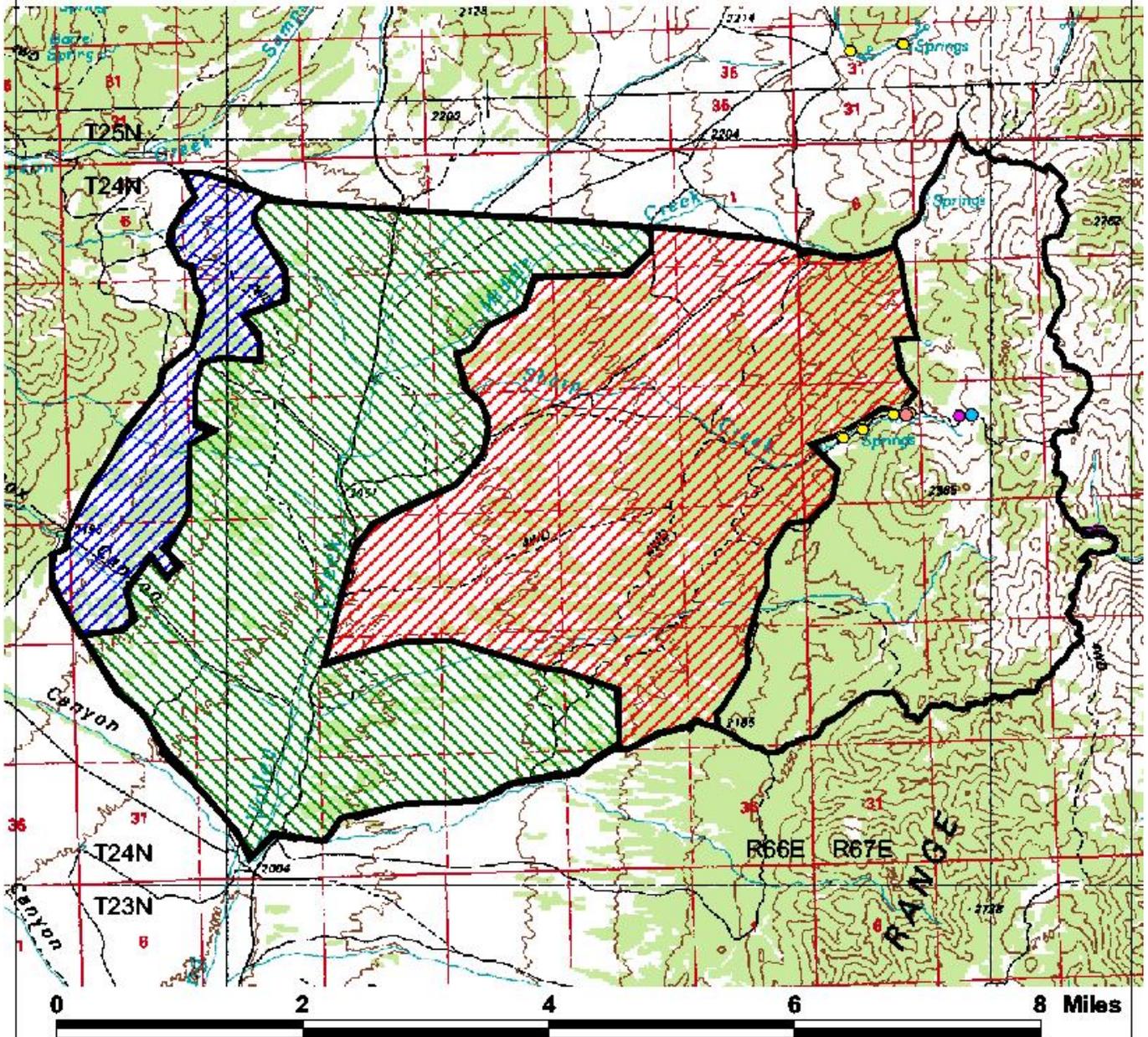
Mitigation measures identified in the Risk Assessment for Noxious Weeds (Appendix 9.1) would be implemented as part of the Alternative Action which would minimize the potential for noxious weed establishment.

Under the No Action Alternative, noxious 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 noxious weeds and invasive species establishment following a natural disturbance (e.g., wildfire) due to the lack of competition from desirable, perennial grasses and forbs. Increasing the density of woodlands would also increase the size and effect of a potential wildfire, which indirectly would provide large areas for noxious weeds and undesirable species to establish following a wildfire event.

### Cumulative 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 positive benefits have been discovered. Pre-existing, yet undetected stands of noxious weeds have been discovered and eradication or control actions have been initiated. This effect could be expected in the North Spring Valley area following proposed or future unplanned disturbances due to nearby detected infestations outside the proposed project area. With planned disturbances such as prescribed fire or other treatment methods, opportunities for detecting additional noxious weed infestations prior to disturbance could 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 weed and invasive species establishment through the development of a more vigorous, diverse and productive community. Completing additional treatments in patches over time, followed by seeding, would reduce the potential of invasions from noxious weeds or invasive species over a large area. All past, present and future treatments, followed by seeding, would make the areas more resistant to noxious weed and 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.

### Map 10 - Documented Noxious Weeds



Project Area Boundary

Spring Burn

Mowing Area

Fall Burn

Canada Thistle

Musk Thistle

Spotted Knapweed

Russian Knapweed

Scale: 1:70,000  
Date: May 2006  
Ely Field Office

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.



### 3.12 Water Quality (Drinking/Ground)

It is expected that the current water quality with 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.

Under the Proposed Action, there is a slight possibility intense precipitation events related to soil erosion could result in short-term negative impacts to water quality. It is not 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 North Spring 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.

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 an accelerated soil erosion potential. 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**

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 not within an area containing residential or industrial development. There are currently no activities occurring within the area which would affect air quality standards.

The Proposed Action would only be expected to affect air quality with minimal emissions from smoke during the short duration of the burn. The emissions are not expected to exceed Nevada and National Ambient Air Quality Standards. In addition, it is expected that the emissions from smoke would not affect any Class I air quality areas or any smoke-sensitive areas. Ignition techniques would be utilized to minimize smoke emissions. Ignition of the burn would take place when atmospheric conditions allow smoke to be vented away from smoke-sensitive areas and disperse and dilute smoke before it accumulates in unacceptable concentrations. Key meteorological variables such as wind speed and direction, mixing height and atmospheric stability would be monitored before and during burning to ensure good dispersion and dilution of emissions at the time of ignition and during the duration of the Proposed Action. The anticipated smoke plume is expected to be in a direction away from communities and other development. Refer to Map 11 for the expected smoke plume of the prescribed burn under the Proposed Action. Emissions from equipment would also occur, but air quality would not be affected beyond the current emission levels. Mowing and seeding activities would produce short term airborne dust. Air quality would be minimally impacted, as wind would sufficiently transport particles from the area. All State and National air quality standards are expected to be met.

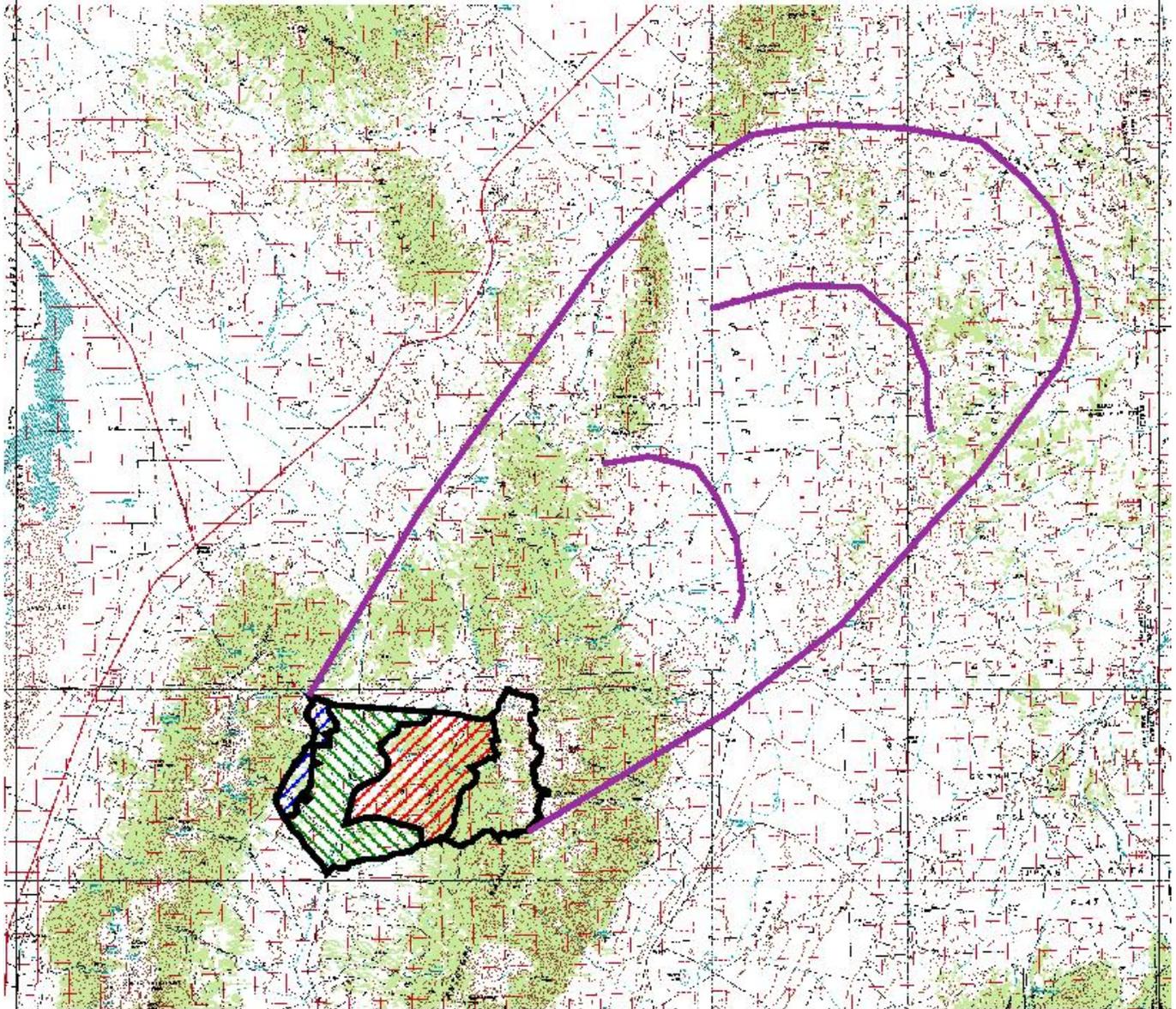
Under the Alternative Action, impacts from mowing and seeding practices would be the same as identified under the Proposed Action. There would be no impacts from smoke under the Alternative Action.

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 distant communities could be impacted in the short term.

#### Cumulative Impacts

There would be no cumulative impacts to air quality associated with the past, present and future fire and fuels treatments as the duration associated with these treatments would be short term. The prescribed fires would be subject to smoke emission restrictions set by the State of Nevada which would provide mitigation of impacts to air quality.

### Map 11 - North Spring Valley Prescribed Burn Smoke Plume Projection

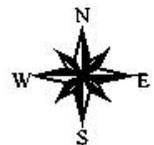


Scale: 1:70,000  
Date: May 2006  
Ely Field Office

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.



Smoke Plume Projection



### 3.14 Land and Realty Uses

#### Rights of Way (ROWs)

There are 7 ROWs located within the North Spring Valley watershed including both surface and subsurface. The ROWs occupy a total of 76.07 acres. The existing surface ROWs include roads, above ground power lines and overhead telephone lines. The existing subsurface ROWs consist of buried telephone lines in which the soil surface has been re-vegetated. There are no above ground poles and junction boxes associated with telephone and power lines within the proposed project area. Only 1 of the 7 existing ROWs listed above within the North Spring Valley watershed occurs within the proposed project area boundary and is listed below:

- N-56319 Road reservation to the BLM. Approximately 5 miles of the total 15.2 miles is within the watershed boundary. The ROW is > 5 miles long and 40 feet wide (24.24 acres). This ROW is located at Township 24 North, Range 67 East, Sections 5 and 6.

#### 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 approximately 360 acres of PWRs within the boundaries of the North Spring Valley watershed. The only PWRs located within the proposed project boundary are Sharp Creek and a source located at Township 24 North, Range 67 East, Sections 17 and 18.

#### National Forest (BLM Withdrawn) Lands

Nev-047860, Public Law 167, Public Land Order 1487, Withdrawal for the Humboldt National Forest. Approximately 8,000 acres (12.5 sections) of land, less private land interests are withdrawn public land within the boundaries of the North Spring Valley watershed. None of these lands occur within the proposed project area boundary.

#### Private Land (Excluding Mineral Patents)

There are 2,756.89 acres of private land within the boundaries of the North Spring Valley watershed. These private land parcels were primarily granted under the Homestead Entry Act. There are no private lands within the proposed project area boundary.

Under the Proposed Action and Alternative Action, there are no underground utility lines, above ground utility infrastructure or other ROWs which would be affected by the prescribed burning, the mechanical treatments, the chemical treatments or other actions described under the Proposed Action or Alternative Action. The only ROW within the proposed project boundary is an existing road. No impacts to the road would be incurred as a result of implementation of the Proposed Action.

Under the No Action Alternative, none of the actions described under the Proposed Action or Alternative Action would be implemented (e.g., prescribed burn, mechanical treatments, chemical treatments, etc.). No vegetative treatments would occur under the No Action Alternative. As mentioned, the only ROW within the proposed project boundary is an existing road. However, the danger of uncontrolled, catastrophic wildfire could result in the loss of distant above ground utility infrastructure (e.g., power lines, telephone lines) which occur outside the targeted treatment area but within the North Spring Valley watershed. Private lands and withholdings and nearby Forest Service lands outside the targeted treatment area could also be adversely impacted as a result of a potential, catastrophic wildfire. Under the No Action Alternative, the potential for adverse impacts to ROWs, PWRs, private lands and other Federal lands under Forest Service jurisdiction will become greater over time in the event of an uncontrolled, catastrophic wildfire.

#### Cumulative Impacts

Cumulative impacts to ROWs, PWRs, private lands and other Federal lands under Forest Service jurisdiction 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 catastrophic wildfires.

### **3.15 Commercial Products**

A portion of the proposed project area serves as a Christmas tree harvest area, as well as a potential area for harvest of posts and firewood.

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 immediately adjacent to and within the general North Spring Valley area would remain available for the harvest of commercial products. Under the Proposed Action and Alternative Action, tree availability would be reduced within the project area.

Under the No Action Alternative, the potential for a large, uncontrolled wildfire would increase 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 North Spring Valley area.

#### 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 other areas immediately adjacent to and within the general North Spring Valley area 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.

## 4.0 PROPOSED MITIGATION MEASURES

Mitigation measures have been incorporated into the Proposed Action and the Alternative Action. Mitigation measures include considerations for sage grouse; pygmy rabbits; migratory birds; livestock grazing; range improvement projects; historic and cultural resources; noxious weeds and invasive species; mining claims and utility lines and other ROWs.

## 5.0 SUGGESTED MONITORING

Monitoring has been incorporated into the Proposed Action and the Alternative Action. 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

### A. PUBLIC INTEREST AND RECORD OF CONTACTS

- |                                       |                                                      |
|---------------------------------------|------------------------------------------------------|
| 1. Curt Baughman                      | Game Biologist (NDOW - Southern Regional Office)     |
| 2. Jason Williams                     | Non-Game Biologist (NDOW - Southern Regional Office) |
| 3. Hank Vogler                        | Need More Sheep Company                              |
| 4. Katie Fite                         | Western Watersheds Project                           |
| 5. Ed Naranjo (Tribal Administrator)  | Confederated Tribes of the Goshute Res.              |
| 6. Cory Venstura                      | West Point, Utah                                     |
| 7. Zosia Targosz (Coordinator)        | Nevada State Clearinghouse                           |
| 8. Nevada Division of State Lands     |                                                      |
| 9. State Historic Preservation Office |                                                      |

Public involvement also consisted of the following:

1. a letter to all the identified public interests on December 15, 2005;
2. a notice published in the "Ely Times" on December 23, 2005;
3. a notice published in the "BLM News" on December 30, 2005;
4. a Tribal coordination meeting conducted on February 23, 2006;
5. a notice under the "NEPA Projects" on the Ely Field Office website located at <http://www.nv.blm.gov/ely>;
6. continued contact with the permittee that could be affected by the proposed action or alternatives;
7. and through consultation with partner agencies such as NDOW

**B. INTERNAL DISTRICT REVIEW**

1.	Jeff Fenton Fire Planner	Fire, Hazardous Fuels, Vegetation
2.	Brad Pendley Wildlife Management Biologist	Wildlife, T&E/Sensitive Species, Riparian
3.	Brett Covlin Rangeland Management Specialist	Livestock Grazing
4.	Jared Bybee Wild Horse and Burro Specialist	Wild Horses
5.	Gary Medlyn Watershed Project Manager	Soil, Water, Air, Floodplains
6.	Kurt Braun Archeologist	Cultural/Paleontological/Historical Resources
7.	Matt Wilkin Environmental Protection Specialist	Hazardous Materials
8.	Ryan Pitts Noxious Weed Coordinator	Noxious Weeds, Invasive Species
9.	Steve Leslie Wilderness Planner	Wilderness Values, VRM, Recreation
10.	Elvis Wall Civil Engineering Technician	Native American Religious Concerns
11.	Ann Perkins Realty Specialist	Lands and Realty Uses
12.	David Henson Supervisory Range Technician	Burn Plan Preparation; Fire History Summary
13.	Carolyn Sherve-Bybee Planning Environmental Coordinator	NEPA Compliance

**7.0 REFERENCES**

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## **8.0 APPENDICES**

## 8.1 Noxious Weed Risk Assessment

### **RISK ASSESSMENT FOR NOXIOUS WEEDS**

In March of 2006, a Noxious Weed Risk Assessment was completed for the North Spring Valley Habitat Improvement and Hazardous Fuels Reduction project. The proposed project area is located in North Spring Valley within Townships 23, 24 and 25 North and Ranges 65, 66 and 67 East, White Pine County, Nevada. The west half of the project area is within the Sampson Creek Allotment (Schell Creek Range bench) and the east half of the project area is within the Chin Creek Allotment (Antelope Range bench). The project area parameter includes approximately 22,358 acres, although an estimated 40 to 60 percent of the total acreage would be targeted for treatment. The proposed project area has been officially surveyed for noxious weed infestations.

Although infestations have been recorded within the entire project parameter, no infestations have been recorded within the targeted treatment area. The only infestations on record occur along the Sharp Creek and Tunnel Canyon riparian corridors. These infestations include Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), musk thistle (*Carduus nutans*), Russian knapweed (*Centaurea repens*) and spotted knapweed (*Centaurea maculosa*).

Cheatgrass (*Bromus tectorum*) is an invasive, annual species which also occurs within the project area.

Factor 1 assesses the likelihood of noxious weed and invasive species spreading to the project area. For this project, the factor rates as Moderate (4) at the present time. This means that noxious weed species are located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious weeds within the project area.

Vegetative disturbance associated with the construction of potential fuel breaks and prescribed burning practices will create openings in the existing vegetative community which could be susceptible to noxious weed and invasive species [e.g. cheatgrass (*Bromus tectorum*)] encroachment and establishment from nearby existing infestations.

The risk in the mechanical treatment areas would be mitigated by seeding drought tolerant and fire resistant species which are capable of competing with noxious weeds and invasive species. Those areas within the proposed burn area which have minimal understory and seed source would also be seeded with desirable and competitive species. Once established, the seeded species would provide long-term protection against future noxious weed and cheatgrass invasions. During project implementation, existing noxious weed infestations (riparian corridors outside the target areas) would be avoided to the extent possible.

Even with appropriate mitigation measures during project implementation, there is still a potential for noxious weed establishment within the project area due existing noxious weed infestations outside the project's target area. Weed detection would be incorporated into post-project monitoring and appropriate suppression actions would be implemented if noxious weeds were established. Suppression

measures would include reporting the weeds to the Ely Field Office Weed Coordinator in order to have the infestations incorporated into the noxious weed treatment schedule as soon as possible. Cheatgrass establishment would also be incorporated into monitoring activities and mitigating measures would be implemented to the extent possible to prevent cheatgrass invasions.

Factor 2 assesses the consequences of noxious weed establishment in the project area. For this project, the factor rates as Moderate 4 at the present time. This means that there are possible adverse effects on site and possible expansion of infestations within the project area. Cumulative effects on native plant communities are likely, but limited.

The location of roads within the vicinity of the project area has the potential for noxious weed establishment through vehicular travel and the presence of cheatgrass within the project area could serve as vectors for noxious weed and invasive species establishment. Disturbance created within the project area could provide optimum establishment areas for noxious weeds and invasive species. However, the presence of any potential vegetative fuel breaks and the successful establishment of desirable, seeded species should reduce the potential for noxious weed and undesirable species establishment.

The Risk Rating is obtained by multiplying Factor 1 by Factor 2. For this project, the Risk Rating is Moderate (16) at the present time. This means that preventative management measures for the proposed project should be developed to reduce the risk of introduction or spread of noxious weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. The area should be monitored for at least 3 consecutive years. Control should be provided for newly established populations of noxious weeds and follow-up treatments should be provided for previously treated infestations.

Vehicles and other equipment used for construction and implementation of the project should be washed to remove any vegetation and potential noxious weed and undesirable species parts. Seed should be tested to ensure that no noxious weeds are present. Noxious weed detection would be incorporated into both pre and post monitoring strategies to identify avoidance areas and to eliminate the spread of noxious weeds. If post-monitoring indicates the invasion and establishment of noxious weeds, appropriate eradication actions (mentioned above) would be implemented. The project area would be monitored for at least 3 consecutive years to provide for the control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.

Reviewed by:

/s/ Ryan Pitts on March 15, 2006  
Ryan Pitts  
BLM Noxious Weed Coordinator

- 8.2 Ecological Site Guide 028BY003NV (ARTRT/LECI4)**
- 8.3 Ecological Site Guide 028BY006NV (ARNO4/PSSP-ACHY)**
- 8.4 Ecological Site Guide 028BY007NV (ARTR2/ACTH7-PSSP)**
- 8.5 Ecological Site Guide 028BY008NV (ARNO4/PSSP-ACHY)**
- 8.6 Ecological Site Guide 028BY010NV (ARTRW/ACHY-HECO26)**
- 8.7 Ecological Site Guide 028BY011NV (ARNO4/ACHY-HECO26)**
- 8.8 Ecological Site Guide 028BY013NV (KRLA2/ACHY)**
- 8.9 Ecological Site Guide 028BY016NV (ARNO4/ACHY-HECO26)**
- 8.10 Ecological Site Guide 028BY017NV (ATCO/ACHY-ELEL5)**
- 8.11 Ecological Site Guide 028BY018NV (KRLA2/ACHY)**
- 8.12 Ecological Site Guide 028BY030NV (ARVA2/PSSP)**
- 8.13 Ecological Site Guide 028BY035NV (PUTR2-ARAR8/PSSP)**
- 8.14 Ecological Site Guide 028BY037NV (ARAR8/PSSP-ACTH7)**
- 8.15 Ecological Site Guide 028BY039NV (ARAR8/PSSP-ACTH7-POSE)**
- 8.16 Ecological Site Guide 028BY080NV (ARTRW/ACHY-HECO26)**
- 8.17 Ecological Site Guide 028BY087NV (ARVA2/PSSP-ACTH7)**