

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

**Meadow Valley Wash North Watershed Restoration
Plan Preliminary Environmental Assessment**

DOI-BLM-NV-L030-2011-0029-EA

March 6, 2012

PREPARING OFFICE

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Watershed Restoration Plan
Preliminary Environmental
Assessment: DOI-BLM-NV-
L030-2011-0029-EA**

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Chapter 1. Introduction

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1.1. Identifying Information

1.1.1. Title, EA number, and type of project

Meadow Valley Wash North Watershed Restoration Plan Preliminary Environmental Assessment, DOI-BLM-NV-L030-2011-0029-EA

1.1.2. Location of Proposed Action

Meadow Valley Wash Watershed, south-southeast of Caliente, Nevada (see Map 1.1, “Meadow Valley Wash North Watershed Project Area” (p. 2))

1.1.3. Name and Location of Preparing Office

Lead Office – Caliente Field Office

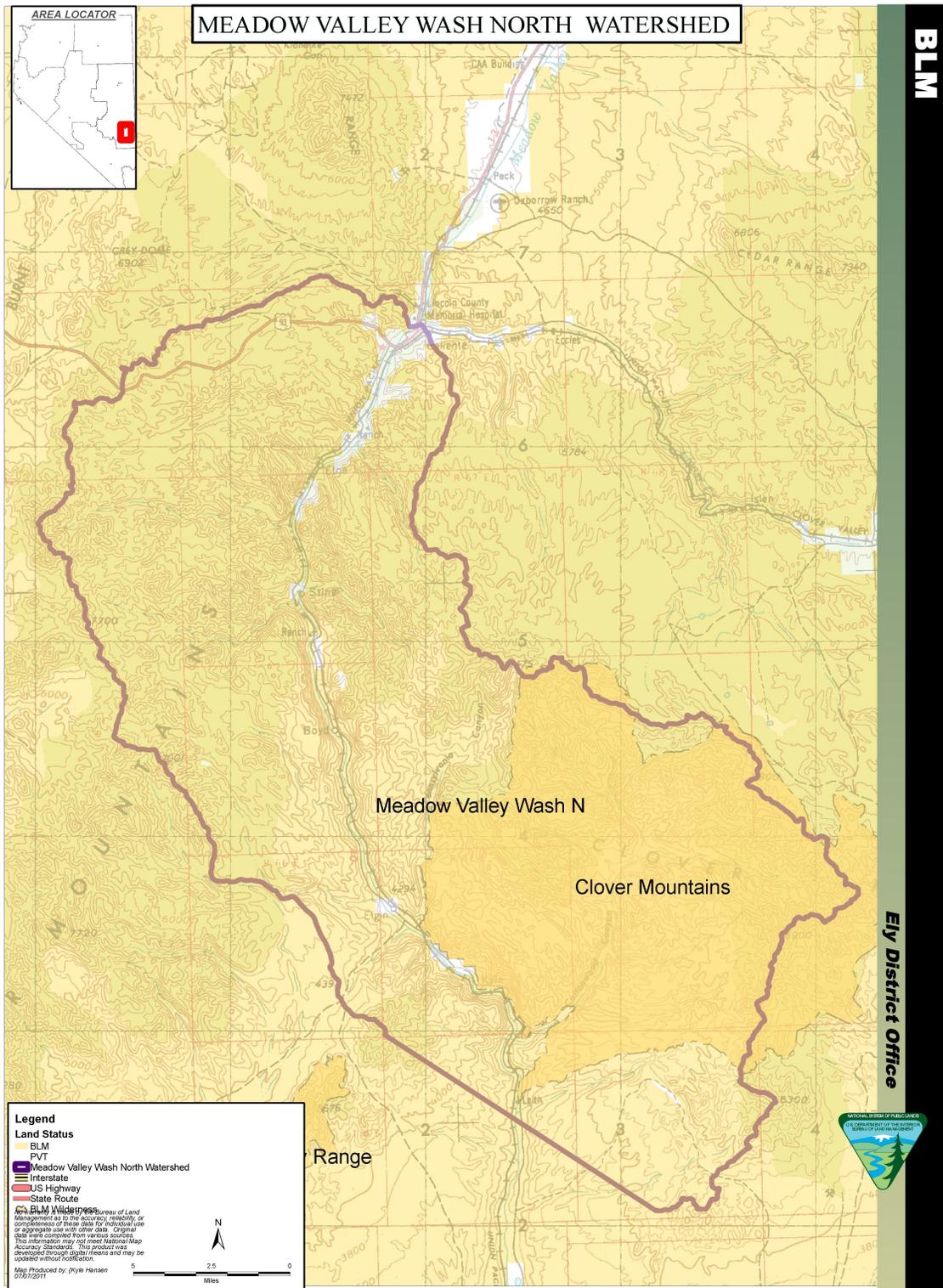
1400 S. Front St., P.O. Box 237

Caliente, Nevada 89008

1.2. Introduction

The project area analyzed in this environmental assessment (EA) is the Meadow Valley Wash North Watershed, which lies south-southeast of the city of Caliente, Nevada (see Map 1.1, “Meadow Valley Wash North Watershed Project Area” (p. 2)) and is flanked by the Clover Mountains on the East and the Delamar Mountains on the West. It is characterized by generally north to south trending mountains with gently to steeply sloping benches and bajadas that end abruptly at the top of Rainbow Canyon. The valley bottom is characterized by a single canyon with the canyon walls ranging in height from 500 to 800 feet. The watershed drains to the south into Meadow Valley Wash South towards Moapa with perennial aboveground stream flow from Caliente, NV, to Elgin, NV. Elevations in the watershed vary from about 3,400 to 4,400 feet in the bottom of Rainbow Canyon to 7,870 feet on top of Slidy Mountain in the Delamar Mountain Range. Precipitation varies from a yearly average of about 8 to 10 inches on the valley bottom to 10 to 18 inches at higher elevations in the mountain ranges. Precipitation occurs primarily as winter snow or spring/fall thundershowers and rains. July and August are normally very hot, dry months but sporadic convective storms are common. Average annual air temperature is from 45 to 55 degrees Fahrenheit, with temperature averages decreasing as elevation increases. The average frost-free season is from 120 to 170 days in the valley bottom to 80 to 160 days in upper elevations (BLM 2008).

The Meadow Valley Wash North watershed is dominated by vegetation communities from the Great Basin Ecoregion and includes basin big sagebrush, black sagebrush, and Wyoming big sagebrush rangeland communities and ponderosa pine, and pinyon and/or juniper woodland communities.



Map 1.1. Meadow Valley Wash North Watershed Project Area

1.3. Purpose and Need for Action

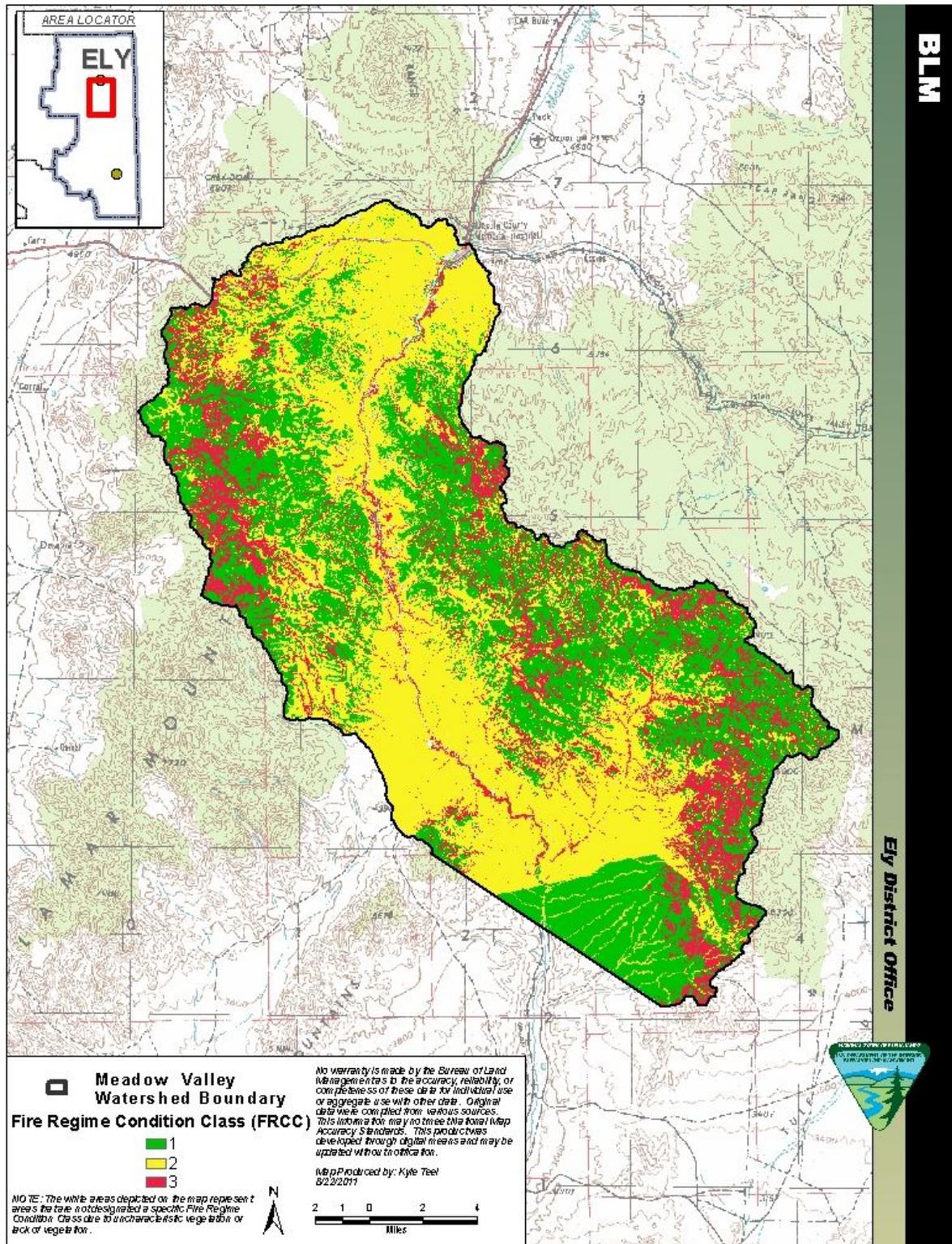
An interdisciplinary team consisting of Bureau of Land Management specialists and other parties conducted an assessment of the condition of the watershed beginning in 2005 and culminating in 2010. The results of this assessment indicated there are areas of the landscape where vegetative communities were not attaining the desired span of conditions for each community as specified in the Ely District Approved Resource Management Plan (RMP) (2008).

The purpose and need for the proposal is to move the landscape within the Meadow Valley Wash North Watershed toward Fire Regime Condition Class (FRCC) 1 with a mosaic of seral stages attaining the potential cover percentages of grasses and forbs for the respective biophysical models.

One of the tools used to make the assessment of the watershed's condition is FRCC, which is an interagency standardized tool based on scientific and peer reviewed literature for determining the degree of departure from a reference vegetation condition within a given biophysical setting (BPS). More information regarding this tool can be found at the following website <http://www.frcc.gov>. Assessing FRCC can help guide management objectives and set priorities for treatments. The classification is based on a relative measure describing the degree of departure from the historic natural disturbance regime for a given BPS. 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). There are three FRCC classes used to describe the departure from reference BPS conditions. 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 indicators of the potential risks that may result. Biophysical setting models have been developed for most major vegetation types. These models describe the vegetation, geography, biophysical characteristics, succession stages, disturbance regimes, and assumptions for each vegetation type (Barrett et al, 2010). Reference conditions described in the BPS models are compared to actual conditions for purposes of determining the current FRCC rating. A FRCC rating is determined for the entire watershed by determining the weighted average of all major vegetation FRCC ratings. FRCC 1 is desired for each BPS and for the entire watershed. A departure from FRCC 1 (reference condition) to FRCC 2 or FRCC 3 serves as an indicator that changes need to be affected.

Map 1.2, “ Strata Fire Regime Condition Class (FRCC) for the Meadow Valley Wash North Watershed” (p. 5) Figure 1.1 Strata Fire Regime Condition Class (FRCC) for the Meadow Valley Wash North Watershed illustrates the moderate to high departure from natural conditions across the Watershed. The FRCC data layer used depicts departures for the entire Watershed. The analysis of the watershed determined the causal factors for this departure to be a combination of drought, fire suppression efforts, and historic livestock overgrazing. Fire frequencies are departed from historical frequencies by multiple return intervals. The risk of losing key ecosystem components within the Meadow Valley Wash North Watershed in the foreseeable future is considered moderate. Vegetation attributes have been altered from their historical range and now include uncharacteristically high densities of trees and below normal levels of perennial grass and forb composition. The current watershed FRCC ratings for the Meadow Valley Wash Watershed are 37% FRCC 1, 45% FRCC 2 and 18% FRCC 3 with an overall departure of 55% (FRCC 2).

Following the implementation of the treatments the objective would be to reduce departure within the watershed to 30% (FRCC 2) and move the remaining 15% into FRCC class 1. While the majority of the project area is FRCC 2, it is at the higher end of the FRCC 2 range (departure scores of 34-65%). This suggests that management actions could prevent these ecosystems from departing further towards FRCC 3 and instead move toward a more ecologically sound condition.



Map 1.2. Strata Fire Regime Condition Class (FRCC) for the Meadow Valley Wash North Watershed

1.4. Relationship to Planning

The project is in conformance with the Ely District Record of Decision and Approved Resource Management Plan (August 2008). The proposals being considered in this EA would help in achieving the following resource management goals identified in the Ely RMP:

Vegetation Resources

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

Forest/Woodland Products

Provide opportunities for traditional and non-traditional uses of vegetation products on a sustainable, multiple-use basis.

Watershed

Manage watersheds to achieve and maintain resource functions and conditions required for healthy lands and sustainable uses.

Fire

Return fire to its natural role in the ecological system and implement fuels treatments, where applicable, to aid in returning fire to the ecological system.

Management Actions–Fire

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

FM-5: In addition to fire, implement mechanical, biological, and chemical treatments along with other tools and techniques to achieve vegetation, fuels, and other resource objectives.

Fish and Wildlife

Provide habitat for wildlife (i.e. forage, water, cover, and space) and fisheries that is of sufficient quality and quantity to support productive and diverse wildlife and fish populations, in a manner consistent with the principles of multi-use management, and to sustain the ecological, economic, and social values necessary for all species.

Special Status Species

Manage public lands to conserve, maintain, and restore special status species populations and their habitats; support the recovery of federally listed threatened and endangered species; and preclude the need to list additional species.

Conformance

The Proposed Action is in conformance with the Ely District Record of Decision and Approved Resource Management Plan (August 2008). Project proposals considered in this EA support the following resource management goals identified in the Ely RMP:

Vegetation Resources

General Vegetation Management:

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

VEG-1: Emphasize treatment areas that have the best potential to maintain desired conditions or respond and return to the desired range of conditions and mosaic upon the landscape, using all available current or future tools and techniques.

VEG-4: Design management strategies to achieve plant composition within the desired range of conditions for vegetation communities, and emphasize plant and animal community health at the mid scale (watershed level).

Fish and Wildlife

General Wildlife Habitat Management: Provide habitat for wildlife (i.e. forage, water, cover, and space) and fisheries that is of sufficient quality and quantity to support productive and diverse wildlife and fish populations, in a manner consistent with the principles of multi-use management, and to sustain the ecological, economic, and social values necessary for all species.

WL-1: Emphasize management of priority habitats for priority species. (See the discussion on Vegetation Resources for the desired range of conditions for the various vegetation communities (pp. 25–34).)

Special Status Species

Manage public lands to conserve, maintain, and restore special status species populations and their habitats; support the recovery of federally listed threatened and endangered species; and preclude the need to list additional species.

This EA is tiered to the analysis and effects disclosed in:

- The Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007).
- The Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007).

1.5. Relationship to Statutes, Regulations, or other Plans

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

The Lincoln County Public Lands Policy Plan (2010) which identifies the following policies:

- *Policy 2-1:* Support the concept of Multiple Use Management as an overriding philosophy for management of the public lands based on multiple use and sustainable yield concepts, and in a way that will conserve and enhance our natural resources.
- *Policy 2-2:* Manage and conserve the quality of the environment, economic, cultural, ecological, scenic, historical and archeological values. Manage and conserve wildlife habitat values compatible with economic opportunities needed to provide for long term benefits for the people of Lincoln County now, and for future generations.
- *Policy 2-3:* Support coordination of public land use policies and actions with all appropriate Federal, State, and local entities and the components of the City and County's Comprehensive Master Plan.
- *Policy 5-1:* Promote multiple uses of public forest resources to realize sustainable and continuous provisions of timber, forage, firewood, wildlife, fisheries, recreation and water.
- *Policy 5-4:* Support the management of woodlands/forest by ecological condition for a diversity of vegetation communities. Grass and shrub ecosystems with no or few invasive species are preferable to pinyon/juniper monocultures with little to no shrub or herbaceous understory. Promote sustainable management and protection of aspen, ponderosa pine, white fir and limber pine forests. Recognize that although these upper elevation forest communities are only a small portion of Lincoln County's extensive forest lands, they are a very important forest type.
- *Policy 5-5:* Urge Federal agencies to promote and facilitate treatment of wildland/urban interface and the treatment of the monocultures such as pinion and juniper forests, and the removal of tamarisk on public lands. Emphasis in regard to these areas should be the reclamation of beneficial plant communities which also enhances the watershed, wildlife, fire management, and grazing. This should be done in such a manner that local entities have an opportunity to derive economic benefits from the forest. Local officials and entities should be consulted for their input prior to any such treatments in cooperation with Federal agencies.
- *Policy 5-6:* Recognize the importance of maintaining healthy aspen communities and encourage demonstrated restoration activities that will retain and improve the vigor of these plant communities.
- *Policy 5-7:* Lincoln County should promote the economic development of alternative forestry products such as Christmas trees, seed collection, nursery crops and other native plants to utilize area forest resources.
- *Policy 5-9:* Support burned area emergency stabilization, rehabilitation and restoration projects.
- *Policy 9-9:* Support prescribed burns in appropriate areas. Fire rehabilitation and appropriate re-vegetation of beneficial species, both native and non-native in relation to natural fire cycles; contribute to habitat improvement and rejuvenation.
- *Policy 9-11:* Noxious and invasive weed management should be supported to assist in maintaining healthy wildlife habitat. Coordination with BLM weed specialists and the Tri-County Weed District regarding noxious and invasive weed issues should be maintained.

- *Policy 11-4:* Air quality standards should be established based on best available control techniques by the Nevada Division of Environmental Protection. Lincoln County's excellent air quality should be maintained as an important aspect of the quality of life of the citizens and visitors.
- *Policy 15-4:* There may be situations where livestock grazing may be effective in helping to reduce hazardous fuels (fire danger), in the form of invasive plant species (e.g. *Bromus tectorum*), without resulting in environmental damage. Therefore, encourage Federal agencies to use livestock to reduce such hazardous fuels during opportune times. Under such circumstances, active AUMs should not be negatively affected.
- *Policy 16-1:* Prevent the introduction and spread of noxious and invasive weeds. Control or eradicate existing populations using the most economical and effective control methods.
- *Policy 16-2:* Implement an integrated management system that addresses all applicable methods including but not limited to prevention, education, biological, cultural, mechanical and chemical methods.
- *Policy 16-3:* The Federal agencies should give a priority to working cooperatively with the Tri-County Weed Program to control noxious and invasive weeds. The continued spread of invasive weeds is a serious threat to agriculture and wildlife within the County. This threat requires immediate action by Federal, State and local agencies along with private land owners while there is still time to control the spread of these weeds.
- *Policy 16-7:* Support the development of cooperative weed management areas.

The Lincoln County Elk Management Plan (1999 Revision) was developed by a Technical Review Team (TRT) that consisted of representatives from the United States Forest Service (USFS), the Bureau of Land Management (BLM), the Natural Resources Conservation Service (NRCS), Nevada Division of Wildlife (NDOW), sportsmen, ranchers, general public, conservationists and various Indian Tribes. 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

State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada Historic Preservation Office for Implementing the National Historic Preservation Act (2009).

1.6. Scoping, Public Involvement and Issues

The Meadow Valley Wash North Watershed Restoration Project was scoped internally by the Bureau of Land Management (BLM) Caliente Field Office interdisciplinary team on July 12, 2011. In addition, a letter to individuals and entities that had previously expressed interest in the watershed analysis process was mailed on November 30, 2010 providing a summary of the evaluation and determinations of the analysis of the watershed. In this letter, recipients were solicited for input regarding potential alternatives to affect change within the watershed to enhance the condition of the resources. A letter was sent to the Native American tribes that have expressed interest in this area on October 19, 2011. One response was received from a member of the public. Comments received are documented in the Scoping Comment Matrix in Appendix E.

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

Vegetation
Vegetative Products
Non-Native Invasive and Noxious Species
Fish and Wildlife
Special Status Species
Fuels and Fire Management
Potential Impacts from Climate Change

Chapter 2. Proposed Action and Alternatives

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2.1. Introduction

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

2.2. Adaptive Management

Adaptive management, as defined by the Natural Resource Council is a decision making process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Adaptive management allows the use of secondary treatments to achieve the objectives set forth for the treatment unit. Post monitoring of the primary treatment(s) would be conducted to determine the effectiveness of the treatment. Secondary treatments may be conducted within primary treatments to the extent that the objectives for seral classes would be met.

Given the longer time scale of this project and the need to be flexible in how treatments are applied in given areas, adaptive management would be used for implementation of the Meadow Valley Wash North Watershed Restoration Project. Adaptive management would be used within the bounds of this analysis to achieve the objectives specified for treatments conducted.

Treatments that may be used as part of the adaptive process to ensure that objectives are met are:

- Chemical treatments:
 - Chemicals such as Tebuthiuron for suppression of pinyon pine and juniper.
 - Chemicals such as Tebuthiuron for suppression of sagebrush.
- Prescribed Fire.
- Seeding.
- Fencing.

2.3. Proposed Action

The proposal is to treat several areas within the watershed to move current vegetative conditions in the selected areas along a path towards Fire Regime Condition Class (FRCC) 1. The treatment methods would be employed in designated areas to achieve the overall objectives for the watershed and the treatment-specific objectives for each treatment unit. The areas identified for treatment, as shown in Figure 2.1, “Proposed Action Treatment Units” (p. 14) Figure 1.1 Proposed Action Treatment Units, are primarily located in the northern portion of the watershed and consist of lands where the natural pattern of disturbance regimes has been altered.

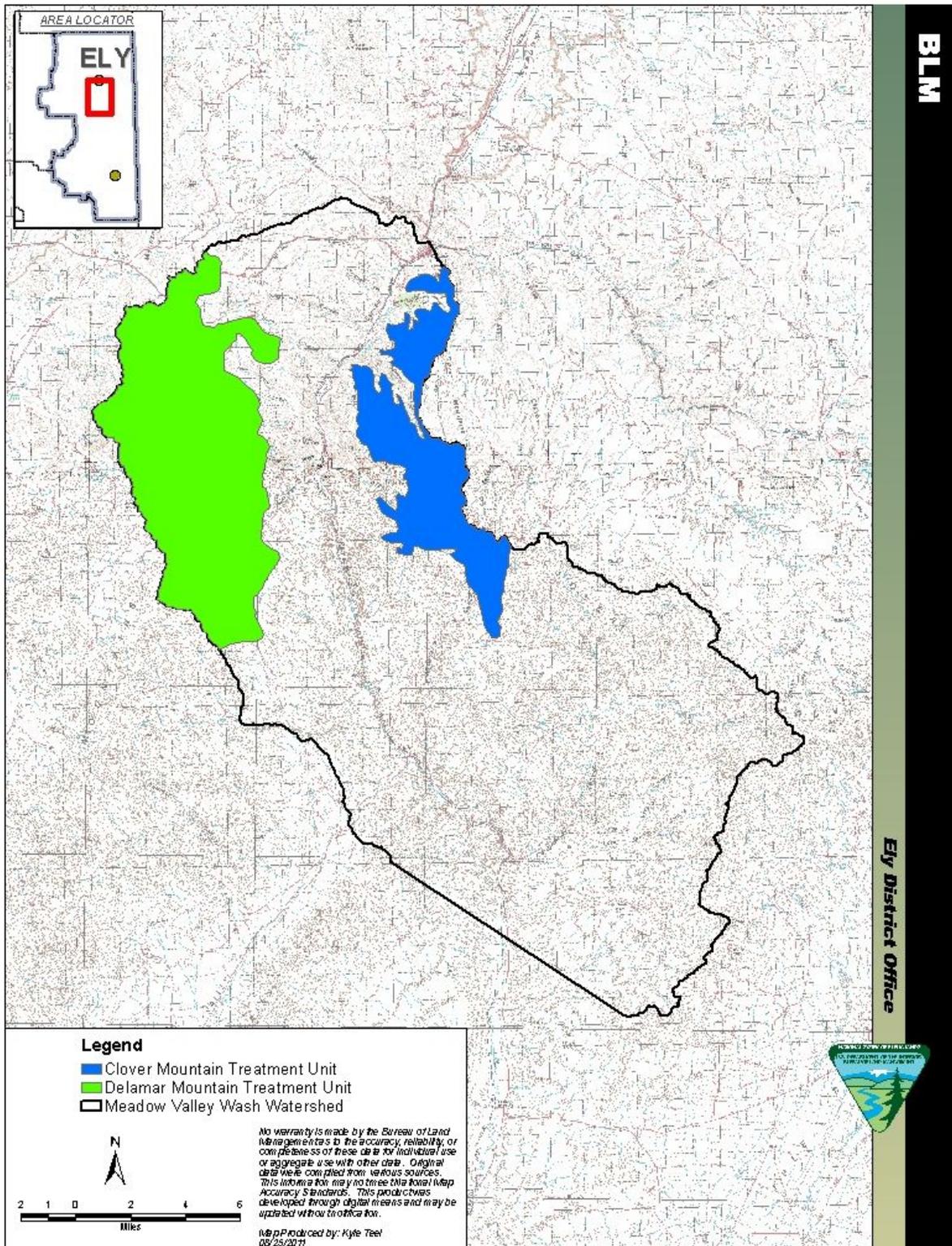


Figure 2.1. Proposed Action Treatment Units

2.3.1. Treatment Restrictions Common to All Treatment Methods

Several treatment methods are proposed for use within the Meadow Valley Wash North Watershed. These treatment methods have been utilized within other areas of this watershed as well as other areas of the Ely District. The results of these treatments have been monitored within the area and a range of potential outcomes is understood. Each method listed below includes a description of the treatment and the parameters by which it would be selected if multiple methods are allowed within the same area. Primary treatments refer to treatments that would occur over large sections of the treatment area and would represent the initial treatment within each treatment unit. Following the primary treatment, there may be secondary treatments implemented to achieve the objectives for the treatment unit. Secondary treatments refer to smaller, more targeted treatments, conducted after the primary treatment in order to achieve the objectives for the treatment unit. Secondary treatments would be conducted after post monitoring indicates through the results of the primary treatment that they are needed. Selection of the primary treatment would be based on the desired outcome, environmental conditions, as well as physical and social constraints within the area. Secondary treatments may be applied if the original objectives were not fully achieved through application of the primary treatment.

2.3.1.1. Timing Restrictions

1. Migratory birds – Avoid treatments during the migratory bird nesting season from April 1 – August 31. If treatment is to be implemented during the nesting season, a biologist would determine the appropriate survey methods (timing, frequency, etc.) and restrictions needed prior to implementation to minimize impacts to migratory birds.
2. Raptors – Avoid conducting treatments from April 15 – July 15 within a half-mile of active raptor nests, unless nest has been determined inactive for at least 5 years.
3. Big Game – Avoid conducting treatments within big game calving/fawning/kidding grounds and crucial summer range from April 15 – June 30.

2.3.1.2. Treatment Design Restrictions

1. Sagebrush treatments should be in a mosaic pattern and seeded if there is no existing herbaceous understory.
2. Avoid removal of pinyon pine and juniper displaying old-growth characteristics. Old-growth characteristics generally include trees displaying a combination of the following: broad asymmetric tops, deeply furrowed bark, twisted trunks or branches, dead branches and spike tops, large lower limbs, hollow trunks (mostly in juniper), large trunk diameter relative to tree height, and branches covered with lichen.

2.3.1.3. Visual Resource Restrictions

Most of the treatment units are within Visual Resource Management (VRM) class II areas where the objectives are to retain the existing character of the landscape, allowed change is low and activities may be visible, but should not attract attention of the casual observer. To meet these objectives the following design criteria would be followed when designing vegetation treatment.

Mechanical treatments would include leaving runners of trees along the drainages and islands of trees (also known as skips or margos) to maintain diversity for wildlife. A mosaic pattern would be created in order to minimize the visual effects of the treatment and to presents a more “natural” appearance of the interface between woodland sites above and rangeland sites below with runners of trees along the drainages to meet VRM objectives. Any biomass remaining on site would be scattered on the ground following treatment.

2.3.1.4. Cultural Restrictions

All treatments that create surface disturbance would be inventoried for cultural resources to identify eligible (Historic Properties) and potentially sensitive sites prior to implementing treatments. Prior to treatment, any possible Traditional Cultural Properties would be identified. An archaeologist would review any potential properties found to determine appropriate mitigation.

A Cultural Needs Assessment would be completed for each treatment unit prior to implementation of any treatment. Identified cultural sites would be recorded and evaluated to determine eligibility for the National Register of Historic Places. Eligible cultural resources would be avoided or impacts mitigated as necessary to mitigate any adverse effects to historic properties. Historic mining districts and mines would also be identified for the safety of crews working in the area. A standard 20-meter buffer would be in place for any treatments utilizing heavy equipment or for removal of flammable material surrounding cultural sites that may be affected by fire or heat preceding ignition of a prescribed fire. A hand-cut fireline may also be created surrounding the 20-meter buffer for prescribed fire. Burn piles would be located in previously disturbed areas or, if not available, an archaeologist would survey the area to identify any avoidance areas for the placement of the piles.

A Class III cultural resource inventory would be required for any treatments including the use of vehicles or heavy equipment or when all-terrain vehicles (ATVs) are used for more than a one-time application of chemical treatments. A mosaic pattern would be designed for any mechanical treatments to avoid any cultural sites identified during the Class II inventory. Avoidance areas that would not be treated would be irregularly shaped and blended with the landscape. No Class III cultural resource inventory would be required for hand cutting treatments if the trees were cut, dropped, and hand-carried off of the site. A Class I cultural resource inventory would be required when ATVs are used for a one-time application of chemical treatments and travel routes would avoid all known cultural sites. A Class I cultural resource inventory would also be required prior to ignition of prescribed fire and within 24 hours of a naturally ignited fire to determine if any burnable of fire-sensitive resources are present.

2.3.1.5. Mineral Restrictions

A survey for mining claim markers in documented active claim sites would be conducted prior to implementing treatments. All active mining claim marker locations and tag information would be recorded. Active mining claim markers or stakes would be avoided to the extent practical. Active mining claim markers that are destroyed by prescribed burning, thinning, or chaining operations would be re-staked using a legal mining claim marker. The re-staking of mining claim markers would occur in coordination with the existing mining claimants to ensure accurate, legal staking procedures that would minimize damage to claims. Claim markers that were previously used that are now not legitimate (due to changes in regulation or authorized types) will be removed or replaced through coordination with the claimants.

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

2.3.1.6. Travel Restrictions

No new permanent roads would be constructed or created during project implementation. Off-road travel with heavy equipment and vehicles would occur during implementation. Loading and unloading any equipment would occur on existing roads to minimize off-road disturbances and impacts. If determined necessary, signs would be posted along roads within or adjacent to treatment units in regards to travel restrictions to assist in mitigating impacts from future cross country travel. No off-road travel would be authorized for harvest of fuelwood by the public, unless specifically allowed by the authorized officer and subject to the following considerations and restrictions that will be determined at the time of authorization:

- Vehicle size limitations
- Timing restrictions
- Avoidance areas for sensitive resources
- Soil conditions
- Off-road travel would not be authorized for the duration of grazing closure for the same area, if applicable.
- Off-road travel would be allowed until the biomass has been removed or for a period not to exceed five years following the opening of the area for off-road fuelwood collection.

2.3.1.7. Grazing Restrictions

Coordination with the affected livestock permittees within the allotments being treated would be conducted prior to any treatment occurring. Any livestock grazing closure for the purpose of the vegetation treatment would be done through the grazing decision or agreement process and would occur prior to the treatment. Livestock grazing would not be authorized within the treatment areas during implementation of the selected alternative. Livestock grazing would resume immediately within treatment areas that exhibit at least 10 percent foliar cover of desirable perennial grasses and forbs. Seeded areas would be closed to livestock grazing for two growing seasons or until the following vegetation objective has been met:

- A minimum of five or more desirable perennial plants per square meter would be firmly rooted in the treated area. Desirable perennial plants are those plants that are native or introduced and have the ability to maintain ecosystem processes and provide forage for livestock and wildlife.

Monitoring sites would be established prior to project implementation however, additional sites may be established within one year following treatment completion. Monitoring locations would be measured annually during the livestock grazing closure period. The closure period may be extended until vegetation objectives have been met. At that time livestock grazing would resume as permitted.

An interdisciplinary team would conduct a review of the 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, which would require a new grazing decision to be issued.

2.3.1.8. Hydrology Restrictions

Crossing perennial, intermittent, ephemeral drainage features would be avoided unless deemed absolutely necessary. Perennial or intermittent drainage features or draws would be avoided by machinery. If it is deemed necessary to cross these features, crossing locations would be approved by the authorized officer with input from the appropriate technical specialist. Crossing ephemeral drainage features, washes, or draws would be avoided unless deemed absolutely necessary. If the crossing or entering of ephemeral features must be undertaken, ingress and egress would be as close to 90 degrees to draw long-axis as possible and with as little bank disturbance as practicable. Slash or woody material of sufficient size and depth could be placed in ephemeral drainage features to protect banks and draw bottoms at designated crossing sites and would be removed when the crossing is no longer needed. Re-contouring of drainage feature banks or bottoms would occur as needed following completion of treatment, restoration of drainage crossing, or otherwise as identified by project manager.

2.3.1.9. Cadastral Restrictions

In accordance with Instruction Memorandum NV-2007-003, surveys would be conducted for cadastral monument and markers prior to any surface disturbing activities and that, if they are disturbed, they would be restored after treatment where possible.

2.3.1.10. Private Land Restrictions

If there are private lands located within the boundaries of proposed treatment units, these lands would not be treated unless a cooperative agreement is in place between the BLM and the landholder.

2.3.1.11. Air Quality Restrictions

A smoke permit would be required for implementation of prescribed fire, and wildfire for resource benefit treatments in accordance with the following documents:

- BLM Handbook H-9214-1 Prescribed Fire Management Handbook
- Interagency Prescribed Fire Planning and Implementation Procedures Guide, 2003, Modified
- NWCG Interagency Incident Business Management Handbook, PMS 902, NFES 3139.
- Wildland Fire Use Implementation Procedures and Reference Guide, 2005, Modified
- Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy, 2003

2.3.1.12. Non-Native Invasive and Noxious Species

Stipulations identified in the Weed Risk Assessment (Appendix A) and the Ely District Integrated Weed Management Plan and Environmental Assessment (DOI-BLM-NV-L000-2009-0010-EA) would be carried out at the time of implementation within each treatment unit.

Management of weeds would include best management practices for early detection and to prevent spread; and treatments to control current populations and any new weed populations discovered during the life of the project. Treatments could include biological controls, targeted grazing, mechanical controls and herbicide. For biological controls only the release of U.S. Department of Agriculture (USDA) - Animal and Plant Health Inspection Service approved insects or pathogens would be used and would be accompanied by a BLM Biological Control Agent Release Proposal. Targeted grazing would only be used to suppress large patches of cheatgrass (*Bromus tectorum*) that are hindering successful recovery of desired plant species. Sheep, cattle, or goats may be used as long as the animals are intensely managed and removed when the targeted species is reduced to a height of two to three inches. Timing restrictions would apply when using targeted grazing to reduce impacts to desired plant species. Targeted grazing would only be allowed during early spring green up when cheatgrass has emerged and other desired grasses are mostly dormant, or in the fall after desired grasses and forbs become dormant.

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

2.3.1.13. Right-of-way Restrictions

All utility lines and other rights-of-way (ROW) structures would be avoided during implementation, depending on the selected treatment type. Above ground structures associated with buried utility lines would also be avoided. Any potential ROW holders within the treatment units would be notified prior to implementation.

2.3.2. Treatment Methods

2.3.2.1. Methods for tree removal or woodland restoration

Tree removal would be targeted in areas where tree establishment and density is at undesired levels and should be thinned or removed in order to achieve management goals listed in the Ely RMP. Examples include pinyon pine (*Pinus monophylla*) and juniper (*Juniperus* spp.) species establishment onto sagebrush communities.

2.3.2.1.1. Individual tree removal - Mastication or other mechanical methods

Mastication and mechanical removal of pinyon pine and juniper includes the use of some form of cutting head attached to a piece of machinery from the size of a light duty skid steer or larger. The cutting heads can be of various designs, some of which chip the tree, cut and pile the tree, and others that cut, lop, and scatter the tree. The potential for biomass removal would depend on the type of method used. Biomass, including fuelwood, would be made available for public use to the greatest extent possible. Biomass created from whole-tree cutting methods would be consolidated into piles and disposed of later through prescribed burning, spread out using a lop and scatter technique, or hauled off site. Biomass created from mastication equipment would be left on site to degrade by natural means. Scatter height of cut limbs and trees for areas treated with lop and scatter methods would be a maximum of 24 inches. Burning of piles would take place when there is a low chance for fire spread and when soil moisture levels are sufficiently high to prevent hydrophobicity, generally October through April. A burn plan would be written and approved prior to any prescribed burning.

Mastication or mechanical tree removal is a desirable method for selective removal of pinyon pine and juniper (thinning areas or areas with desirable tree species intermixed) with minimal impact to existing brush, grasses and forbs. However, mastication loses efficiency as tree density and size increases. This method can incorporate some seed and prepare a seed bed in areas, but only where the equipment travels. Mastication or mechanical tree removal may be effective in areas where tree densities fall below the cover threshold for chaining. Chipping equipment is preferable in areas where remaining biomass is to be minimized (chips versus whole trees). Whole-tree cutting methods can be utilized for biomass removal and utilization.

When using this method, chip layers resulting from mastication should be restricted to six inches or less. Mastication or mechanical tree removal would be preferred on slopes of less than 20%, however may be considered on slopes up to 30%. If biomass is to be removed from the project site, accommodations would need to be made for vehicles to be able to access the site for loading and vegetation removal prior to authorization.

2.3.2.1.2. Hand Cutting

Hand cutting would involve the use of crews to selectively hand cut the trees within the treatment area. Trees would be lopped and scattered across the treatment area or piled. Remaining biomass may be left on site, removed for utilization, or burned. Scatter height of cut material for areas treated with hand cutting would be a maximum of 24 inches. Following treatment, the site would be inspected to determine if excess biomass left on-site in certain locations would restrict movement wildlife. If this occurs, the biomass within these areas may be piled and/or burned or removed mechanically. Hand cutting may be used as a pretreatment or as a component of other treatments.

Hand cutting is a desirable method for the selective removal of pinyon pine, juniper, or other tree species (thinning areas, areas with desirable tree species intermixed, or buffering sensitive resources) with minimal impact to existing brush, grasses and forbs. It may also be an effective method in areas where tree densities fall below the cover threshold for chaining or where slope restricts the use of chaining, mastication, and other mechanical methods. Hand cutting is preferable in areas where remaining biomass is to be piled for burning later or lopped and scattered to maximum height of 24 inches. Hand cutting would not be used to incorporate seed or prepare a seed bed.

2.3.2.2. Mechanical Methods for Sagebrush Restoration

Mechanical sagebrush treatments would target late seral sagebrush sites (Wyoming, Black, and Mountain sagebrush) where older and decadent sagebrush is increasing and the herbaceous understory is diminishing.

2.3.2.2.1. Dixie Harrow

The Dixie harrow consists of a large spike-tooth harrow pulled by a four-wheel, drive rubber-tired tractor, equipped with a three-point hitch. The Dixie harrow can be used in sagebrush or other small shrub stands and offers a high degree of control. Factors such as the pattern of treatment, residual density of sagebrush, seeding, and timing can all be controlled. Sagebrush mortality levels can be adjusted through the removal or addition of tines. Within these units, mechanical removal of pinyon pine and juniper may be utilized to remove the trees prior to treatment, as opposed to avoiding them. Seeding can be conducted within the same pass as the treatment with the use of a broadcast seeder attached to the back of the equipment pulling the Dixie harrow. Any biomass resulting from this treatment would be left on site for natural decomposition.

The Dixie harrow would be desirable for reducing shrub cover, increasing the vigor of existing shrubs, and reducing competition to existing grasses and forbs. It allows for incorporation of seed into a seedbed to promote re-vegetation of an area. The equipment would have to negotiate around trees if they aren't removed prior to treatment and treatment areas would be restricted to areas that have a slope of less than 20%.

The Dixie harrow may be used as a secondary treatment within areas that have been treated for removal of pinyon pine and juniper to further reduce the shrub component in order to achieve the desired mosaic pattern and percentages of seral states listed within the objectives for each treatment area. When used as a secondary treatment, the amount of biomass remaining on site would restrict the effectiveness of the Dixie harrow.

2.3.2.2.2. Roller Chopper

Roller chopper treatment involves the use of a large drum with paddles attached that is pulled behind a piece of machinery such as a tractor or bull dozer. The weight of the drum can be adjusted through the addition of water to the drum. The treatment crushes and chops brush and small trees. Seeding can be accomplished at the same time as the treatment with the use of a broadcast seeder attached to the back of the equipment pulling the roller chopper. Any biomass resulting from this treatment would be left on site for natural decomposition.

The roller chopper is desirable for reducing shrub and small tree cover and is effective at incorporating seed into a seedbed to promote re-vegetation of the area. The roller chopper can be used in areas where small trees are present (up to five inches in diameter), but the equipment would need to negotiate around large pinyon pine and juniper trees if not cut prior to treatment. The equipment would be restricted to areas that have a slope of less than 20% and soils that contain a low amount of large rock fragments.

The roller chopper may be used as a secondary treatment within areas that have been treated for pinyon pine and juniper removal in order to further reduce the shrub component to achieve the desired mosaic pattern and percentages of seral states listed within the objectives. When used as a

secondary treatment the amount of biomass remaining on site may (depending upon diameter) restrict the effectiveness of the roller chopper.

2.3.2.2.3. Mowing

Mowing involves the use of a mowing deck pulled behind a tractor equipped with a power take off. Its use would be limited to sagebrush and other small shrubs in areas that have fairly gentle terrain and with no large rocks or downed trees. Within these units, hand cutting of trees may be utilized to remove the trees as opposed to avoiding them. Any biomass resulting from this treatment would be left on site for natural decomposition.

Mowing is a desirable method for reducing shrub cover, increasing the vigor of existing shrubs, and reducing competition to existing grasses and forbs. The height to which the target species is cut may range from ground level to 12-15 inches high. The degree of sagebrush mortality and regrowth can be controlled by adjusting the height of the cutting blades. Cutting to less than four inches would likely result in 85-100% mortality. Leaving greater than a 10 inch height may result in only 40-60% mortality. Mowing is not effective at incorporating seed into the soil or preparing the seedbed and would have to negotiate around pinyon pine and juniper if they are not removed prior to treatment. Mowing treatments would be restricted to areas that are less than 20% slope and a relatively low amount of surface rock.

Mowing may be used as a secondary treatment within areas that have been treated for removal of pinyon pine and juniper to further reduce the shrub component in order to achieve the desired mosaic pattern and percentages of seral states listed within the objectives for each treatment area. When used as a secondary treatment the amount of biomass remaining on site would restrict the effectiveness of the mowing treatment.

2.3.2.3. Chemical Treatments

All chemical treatments would be in accordance with the specifications listed on the label for the chemical being used and the Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007) and associated Record of Decision. Agency and contractor personnel involved with the application of herbicide would be appropriately licensed as required by the Environmental Protection Agency (EPA), BLM, and the state of Nevada. Equipment utilized for application would be properly equipped and calibrated for dispensing the herbicide. For aerial applications of herbicide the pilot would be required to have a current Nevada pesticide applicator's license and the aircraft would need to be equipped to precisely dispense the herbicide. The applicator would also be required to have a current Nevada pesticide applicator's license. A Pesticide Use Proposal (PUP) would be completed and authorized prior to completing the treatment. In addition, Risk Management Worksheets prior to the application of any chemicals and Material Safety Data Sheets (MSDS) would be on hand whenever chemicals are used. 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 Sheets (MSDS) provided for all chemicals used would also be adhered to.

2.3.2.3.1. Tebuthiuron

Tebuthiuron is a herbicide used to control woody species and may be applied in accordance with all applicable federal, state and local laws, regulations and guidance. The preferred time of application would be during the fall prior to the first snow fall, however, the herbicide could be applied any time 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 be in compliance with the buffers identified within the Standard Operating Procedure and Appendix C table C-16 of the Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007). Standard Operating Procedures and Mitigation Measures Identified in the Record of Decision for the Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007) would be incorporated into the project design at implementation. The above incorporated project design features provide prescriptions for herbicide treatment along with appropriate mitigating measures. Other project design features may be added to protect resources as site specific conditions warrant prior to treatment.

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

Tebuthiuron is proposed to achieve one of three objectives; 1) to reduce pinyon pine and sagebrush cover within mountain sage communities to release deep rooted shrubs, grasses and forbs, 2) to reduce sagebrush cover in a spotty and mosaic fashion and at application rates that result in less than 100% mortality within black and Wyoming sagebrush sites, and 3) to reduce sagebrush competition with grasses (primarily basin wildrye) and forbs within areas where a desirable understory is already present. Application rates would be determined through soil analysis and the objectives for the specified treatment area.

Biomass remaining after the effects of the herbicide are realized may be left on site for natural decomposition, treated with prescribed fire, or made available for fuelwood. If made available for fuelwood, the Material Safety Data Sheet and any other applicable information must be reviewed to ensure the safety of combustion of wood that has absorbed the chemical and must be made available to the public.

Tebuthiuron may be used in areas where shrub and tree cover would need to be removed in order to release grasses, forbs and deep rooted woody species (rate dependent). Tebuthiuron may also be used in areas that terrain limits other mechanical treatments. However, it should not be used in areas that have soils with clay content greater than 30% or that have surface water or an elevated groundwater level. Treatments should be designed to avoid stands of mountain mahogany. Tebuthiuron may be used as a secondary treatment to further reduce the shrub component to achieve the desired mosaic pattern and percentages of seral states listed within the objectives for each treatment area.

2.3.2.3.1.1. Tebuthiuron for Suppression of Pinyon Pine and Juniper

Target areas for herbicide treatment would be areas where pinyon pine and juniper have established on sagebrush ecological sites and late seral pinyon pine and juniper woodland sites where a desirable understory is established. Following application of the herbicide in doses sufficient to control juniper it would be expected to have near 100% mortality of sagebrush and pinyon pine. This treatment should be restricted to areas that have a desirable understory of grasses established that are resilient and resistant to the herbicide.

2.3.2.3.1.2. Tebuthiuron for Suppression of Sagebrush

Target areas for herbicide treatment would be areas where older, decadent, even-aged stands of sagebrush exist with a desirable understory. Application of herbicide in this instance would be done at rates that would result in partial control of sagebrush. The method of application would be dictated by the treatment size and would be done in accordance with the applicable label and the Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007). Following application of the herbicide in such doses it would be expected that deep rooted shrubs (e.g. antelope bitterbrush) and trees (primarily juniper) would not be substantially impacted and existing grasses and forbs would be released.

2.3.2.3.2. 2,4-D and Picloram for Rabbit Brush Suppression

Treatment units identified for the removal of rubber rabbitbrush would be treated with a mechanical treatment (mowing), followed by a chemical treatment of Picloram and 2,4-D within the project area in order to reduce the densities of rubber rabbitbrush communities on sagebrush and basin wildrye dominated ecological sites. The project design would be in compliance with the buffers identified within the Standard Operating Procedures and Appendix C table C-16 of the Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007). If areas around wetland and riparian areas are to be treated they would only be treated with a herbicide registered with the Environmental Protection Agency for aquatic applications. Wind speeds, precipitation events and other environmental factors would be considered during the application processes to prevent herbicidal drift or potential runoff.

Picloram (active ingredient: 4-amino-3,5,6-trichloro-2-pyridinecarboxylic acid) is a highly translocated, selective herbicide active through both foliage and roots on many broadleaf herbaceous weeds and woody plants. 2,4-D (active ingredient: 2,4-Dinitrotoluene) is a selective, foliar-absorbed, translocated, phenoxy herbicide used mostly in post-emergence applications and is effective in controlling many annual and perennial broadleaf weeds. Once absorbed 2,4-D is translocated within the plant and accumulates at the growing points of roots and shoots where it inhibits growth. Application rates and procedures would follow directions as listed on the herbicide specimen labels for rubber rabbitbrush. Target areas for both mowing and herbicidal treatments would be those areas where rubber rabbitbrush has established on sagebrush and basin wildrye ecological site.

The preferred application period would be in late May or early June. Rubber rabbitbrush can be susceptible to herbicides such as 2,4-D, but results vary widely according to the type of treatment, rate of application and the season of application of the treatment. Relative effectiveness also

depends on the amount of new twig growth and subsequent rainfall. The highest success rates are obtained when plants have at least 3 to 4 inches of new growth and when soil moisture exceeds 13 percent. Rubber rabbitbrush may be less susceptible to herbicides during drought years when new growth may be minimal (Tirmenstein, D. 1999). The project area would be inspected prior to the chemical treatment to solidify those areas targeted for each specific treatment in order to achieve the desired resource management objectives.

2.3.2.4. Prescribed Fire

Prescribed fire can be used to control certain species, manage fuel loading, and maintain vegetation community types that are fire dependent, and enhance growth, reproduction, or vigor of certain species. Target locations would be chosen in sites with existing native perennial understory species. These target areas would exhibit characteristics where positive natural reestablishment of native grasses and favorable establishment of seeded species are most likely to occur. Given the presence of a healthy and diverse understory of native perennial species and a lack of non-native invasive plant species, it is less likely that invasive plants would establish in these areas.

Vegetation targeted for prescribed fire includes mountain sagebrush, and pinyon pine and juniper woodlands. Incidental vegetation types would include sagebrush (Wyoming, black, and low), ponderosa pine and vegetation within riparian areas. Prescribed fire may be used as a secondary treatment to achieve the objectives listed for individual treatment areas. Prescribed fire may also be used to reduce biomass left on site. In the event that prescribed fire is utilized in areas where antelope bitterbrush is present, fire severity and timing of ignition would be managed to minimize impacts to the antelope bitterbrush.

Ignitions would occur within the specific prescribed burn project boundary designated within the treatment units. Prescribed fire that moves outside of the prescribed burn project boundary but remains within the treatment unit boundary may be managed to accomplish resource management objective consistent with those listed for the treatment unit. Prescribed fire that moves outside of the treatment unit boundaries would be fully suppressed.

Ignition would be strategically timed to best reduce fuel hazards to acceptable levels and benefit ecological system health. Fuel moisture and atmospheric conditions would be closely monitored prior to ignitions to achieve the specific levels of fire severity targeted within the objectives and burn plan, maintain the greatest degree of control possible, and prevent adverse impacts from smoke.

A combination of ground and aerial firing (ignition) resources would be used to implement the prescribed burn. Ground firing resources would include drip torches and terra torch where applicable. Clean up and control would also be conducted with the use of drip torches and/or terra torch. Aerial application would be through the use of a Plastic Sphere Dispenser (PSD) machine or helitorch. Aerial fire application would improve efficiency and effectiveness. Safety, fuels properties, current and expected weather, topography (ingress/egress), and holding capabilities would determine the proper fire application. Drainage bottoms would be avoided, where possible, and mosaic patterns would be preferred to block patterns. An approved burn plan would be prepared prior to any prescribed fire. Control lines for prescribed fire would utilize natural barriers as much possible. In the event natural barriers cannot be utilized, tree and shrubs would be cut and removed along prescribed fire boundaries. Vegetation removal may include techniques described under Section 2.3.2.1 "Methods for tree removal or woodland restoration". Vegetation removed along the control line would be piled inside the prescribed fire boundary and burned

during firing operations. In some cases control lines would include scraping and/or digging to expose mineral soil. If fire lines are constructed for a prescribed burn, the lines would be rehabilitated after the completion of the burn. Rehabilitation of the lines may include seeding (by hand or ATV), dragging brush back onto the line, and/or water-barring the fire line.

Prescribed fire may be used in areas where reducing the shrub and/or tree component is desirable to release other desirable vegetation (grasses, forbs, etc.) and in areas that have a preexisting understory to reseed the burned area naturally. Boundaries should be designed to avoid any known cultural sites that are susceptible to damage from heat or smoke. Prescribed fire may be used as a secondary treatment to further reduce the shrub component to achieve the desired mosaic pattern and percentages of seral states listed within the objectives for each treatment area.

Planned ignition is a technique that may be employed within the prescribed burn units and may be preferred in prescribed burn units within the wilderness areas (if allowed within the applicable Wilderness Plan). This technique involves igniting a fire in a strategic location, time, and weather conditions to accomplish the specified objectives. Following ignition the fire is allowed to burn as the weather and fuels dictate with suppression forces utilized to keep it within the prescribed burn area boundaries or to protect sensitive resources. This technique may require a series of planned ignitions over several years to accomplish the objectives for any one prescribed fire treatment unit.

2.3.2.5. Seeding

Seeding would occur in areas where the interdisciplinary team determines that existing understory vegetation is not sufficiently abundant (generally in areas with less than 10% relative cover of perennial grass and forb species) or diverse. Seeding would be conducted on the treated sites during the fall or early winter months, preferably prior to snow fall. Seed mixes intended for application in wilderness areas would utilize only native grasses, forbs, or shrubs. Seed mixes for all other areas may consist of a variety of native grasses, forbs, and shrubs as well as non-native perennial species that are able to successfully compete with invasive annuals (e.g., cheatgrass) and are adapted to site characteristics. Preference would be given to using a purely native seed mix, however if it is determined that recurring wildland fire, invasive species establishment, or site characteristics may prevent achieving the treatment unit objectives, non-native perennials may be utilized to reduce these threats.

Seeding would occur through aerial application, ground application with the use of a rangeland drill, broadcast seeding with a tractor or ATV or applied by hand. Seeding in wilderness areas would only be applied aerially or by hand. Seeding with a rangeland drill would be restricted to slopes of less than 20% and where stone content of the soil permits the effective use of the drill. All areas that are chained for the purpose of pinyon pine and juniper removal would be seeded. Chainings, regardless of the purpose, would be seeded prior to the completion of the final pass of equipment. Other mechanical treatments for pinyon pine, juniper, or sagebrush would have seed applied prior to the treatment occurring. Areas that are to be treated with chemicals would be seeded after the application of the herbicide in most cases and seed application would be determined by the specifications and recommendations of the label of the herbicide used.

If chaining occurs within mountain sagebrush habitat, antelope bitterbrush seed would be applied using dribblers attached to the dozer.

Seeding may also be utilized as a secondary treatment in burned areas from prescribed fire or fire for resource benefit. These areas would be selected based upon the existence of a desirable

understory that would promote natural re-vegetation of the treatment area. In the event that the prescribed burn severity is higher than predicted or the fire moves into a non-target area, seeding may be required to ensure revegetation of the area by desirable species.

2.3.2.6. Fencing

Fencing may be required to restrict livestock from entering treated areas and to restrict all large ungulate (wild and domestic) herbivory on treated areas in highly sensitive location such as aspen stands and riparian areas. All fences for the purpose of restricting all ungulate herbivory would be temporary in nature and would remain in place only until the objectives are met.

Any treatment that is seeded and any prescribed burn would be rested for a minimum of two years following treatment or until the revegetation criteria described in 2.3.1.7, Grazing Restrictions are achieved. To accomplish the overall and treatment-specific objectives, fencing of all or parts of treatment areas may be required. If possible, existing fences would be utilized to restrict livestock from entering treated areas.

Temporary fencing for the purpose of restricting livestock would be installed around treatment areas as needed and would be removed after objectives for the treatment area had been achieved. Additionally, permanent fencing could be installed in coordination with goals defined through the Term Permit Renewal process for a given area.

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

Electric fencing may be used as a cost-effective fencing alternative that meets the objectives. Electric fencing would typically be three or four strands attached to a fiberglass or metal pole to a height of five or six feet. Corner posts will be constructed of wood. The fencing would be solar powered with a battery box to store electrical charge. The box containing batteries would be camouflaged to the surroundings to the largest degree possible. Electric fencing would be used until objectives are met and then made available for use in other locations.

2.3.2.7. Wildland Fire for Resource Benefit and the Fire Management Plan

Wildland fire for resource benefit could be allowed on approximately 163,809 acres within the Meadow Valley Wash Watershed as prescribed within the (2004) Fire Management Plan (FMP). The FMP is divided into Fire Management Units (FMUs) of which the Meadow Valley Wash Watershed intersects five: Elgin/Blue Nose/Kane Spring PJ, Mojave, Clover/Delamar/S. Pahroc/Irish, Lincoln County WUI, and Southern Benches HVH (Figure 2.2, “Map of Fire Management Units in Meadow Valley Wash North Watershed” (p. 29)). Each of these FMUs contain objectives which outline a target for the individual fire for resource benefit size along with decadal acres limits with each FMU as presented in Table 2.1, “Wildland Fire for Resource Benefit by FMU and the acreage of each FMU within the Meadow Valley Wash Watershed” (p. 28).

If ignitions are to be considered for wildland fire for resource benefit, the mechanical and prescribed fire treatment methods identified within the Proposed Action may be implemented as part of the fire management strategy. In the case of a wildland fire for resource benefit, the BLM would inform the potentially impacted landowners within the area as to the objectives and

strategy being employed. Ignitions within or adjacent to the designated treatment units would be considered for wildland fire for resource benefit if conditions are appropriate for the fire to accomplish the objectives listed for the treatment unit.

Table 2.1. Wildland Fire for Resource Benefit by FMU and the acreage of each FMU within the Meadow Valley Wash Watershed

Fire Management Unit Name	Percent Of FMU*	Acres of Wildland for Resource Benefit	Individual Wildland Fire For Resource Benefit	Total Acres	Watersheds Proportional Acres
Elgin/Blue Nose/Kane Spring PJ	23	0	0	0	0
Mojave	6	0	0	0	0
Clover/Delamar/S. Pahroc/Irish	70	164,084	50,000	50,000	35,000
Lincoln County WUI	1	0	0	0	0
Southern Benches HVH	<1	381	10,000	50,000	81

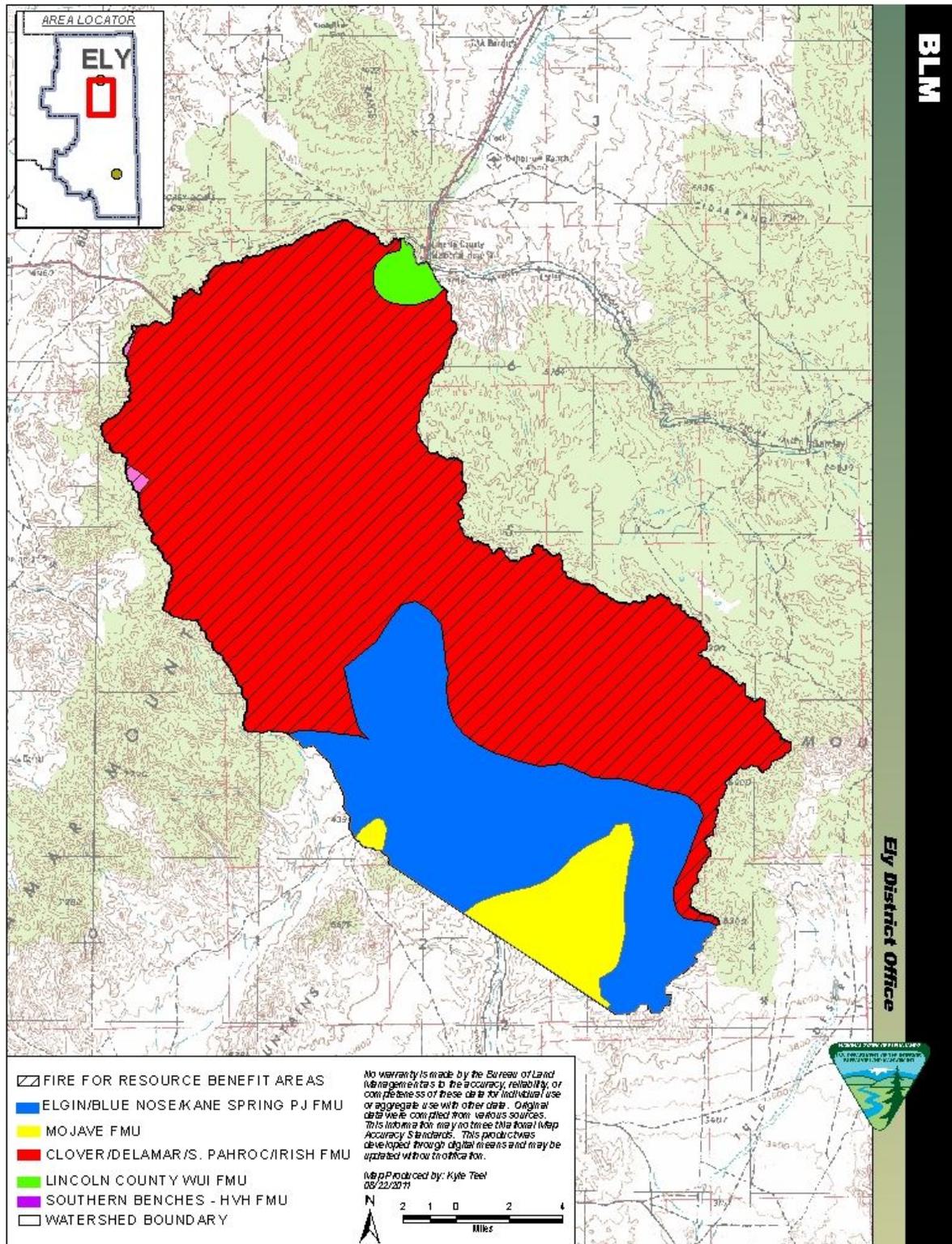


Figure 2.2. Map of Fire Management Units in Meadow Valley Wash North Watershed

*Chapter 2 Proposed Action and Alternatives
 Wildland Fire for Resource Benefit and the
 Fire Management Plan*

March 6, 2012

2.3.3. Treatment Units

Treatment units within the Meadow Valley Wash North Watershed have been selected based on the purpose and need and objectives identified by the interdisciplinary team. Data gathered within the watershed was utilized to help determine the treatment unit boundaries. Vegetation types that deviate from reference conditions as listed within the BPS models and the desired future condition as listed within the RMP were grouped and units were defined by the majority of the grouped vegetation types. Each treatment unit has unique objectives that define the type and extent of primary and secondary treatments to be implemented. Treatment unit objectives are based on BPS model seral states and the evaluation of the watershed is based on stratum FRCC values.

Biophysical setting models establish a reference condition that is described as the potential vegetative community for a given site prior to European influence reflecting a range of natural disturbances. These reference conditions specify a range, in percentages, of seral classes that describe the vegetation progression post-disturbance. The RMP utilized the BPS data in delineating the vegetative goals for the district. The percentages within the RMP vary slightly from the BPS models for certain vegetation types. The RMP percentages are described as the desired future condition for the district for which the Ely District Office is managing towards.

Sagebrush systems within the planning area have different reference percentages defined by the BPS for the area and the desired future condition as defined by the RMP. The RMP lumps all sagebrush systems into one description with 5% of the sagebrush acres withheld for uncharacteristic exotic stands of crested wheatgrass seedings. The RMP designates desired seral states for the crested wheatgrass seedings as well. For the purpose of defining the objectives of the treatment units the BPS reference percentages would be used as there are no proposed treatments within crested wheatgrass seedings.

Within the treatment units there are areas that are denoted as Montane-Subalpine Riparian Systems. Pixels associated with the BPS data are 30m² which encompasses approximately 0.22 acres. Local knowledge of these riparian systems indicates that several of them are entrenched and, even those that are not, rarely achieve this size in width. Several of these entrenched systems have resulted in a drop in the water table, which has allowed non-riparian vegetation (i.e. rabbitbrush) to establish on the sites. For the purpose of treatment unit delineation, the BPS data would be used as is, however if this alternative is selected, pretreatment monitoring would confirm the boundaries of the vegetation types.

2.3.3.1. Treatment Unit 1: Delamar Mountain Unit

The treatment unit consists of a total of 35,878 acres and approximately 50-60% of that area, or approximately 17,934-21,527 acres, would be affected by treatments Map 2.1, “Treatment Unit 1 Delamar Mountain Unit” (p.). It is not anticipated that every acre within the treatment area will be treated. Areas that would be targeted for treatment would generally be those areas that are in successional classes D, E, and U which accounts for 90 percent of the treatment area.

Treatment objectives specific to Treatment Unit 1:

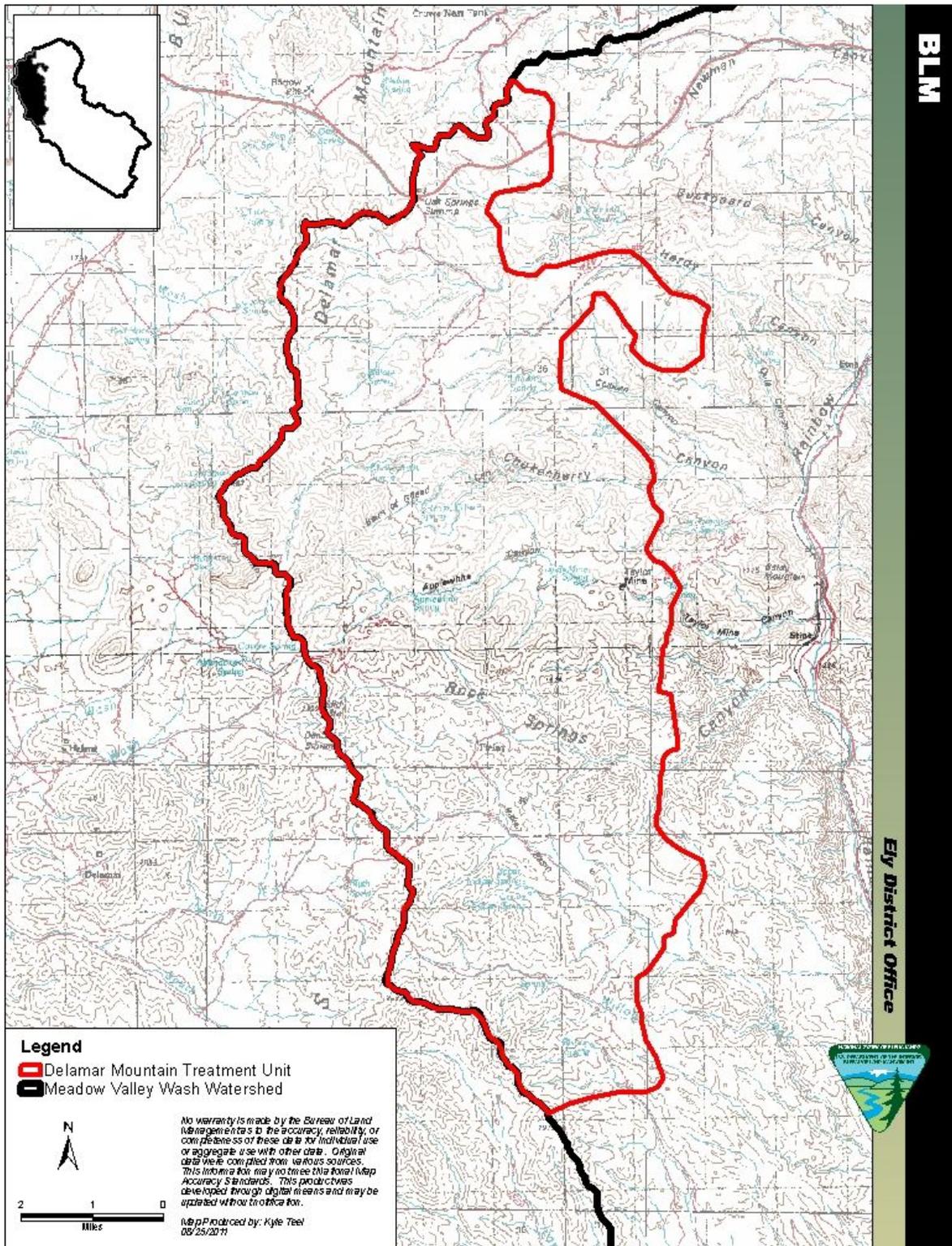
- Reduce the amount of pinyon pine and juniper establishment within sagebrush communities by 75%.
- Open wildlife corridors by removing pinyon pine and juniper within drainages.

- Promote browse (bitterbrush etc.) within big game habitat.
- Suppress and stabilize cheatgrass and promote desired vegetative species.
- Increase “naturalness” of the area by reducing the density of pinyon pine and juniper and creating a more mosaic pattern and varied age class in all vegetative communities.
- Create mosaic varied age class within the Pinyon-Juniper Woodland area by creating numerous treated areas ranging in size from 10 to 1,000 acres.
- Achieve a successional class breakdown within the sagebrush communities of 85% A-C, 5% D, 5% E and 5% U (non-native seeded) (+/-5%).
- Achieve a successional class breakdown within the pinyon and juniper woodlands of 5% A, 5% B, 20% C, 65% D, 5% E, and 0% U (+/-5%).
- Achieve a successional class breakdown within the Sonora-Mojave semi-desert chaparral of 65% A, 35% B, 0% C, 0% D, 0% E, and 0% U (+/-5%).
- Achieve a successional class breakdown within the Great Basin semi-desert chaparral of 15% A, 85% B, 0% C, 0% D, 0% E, and 0% U (+/-5%).

Table 2.2. Vegetation Types for Treatment Unit 1

Target Vegetation Types			
RMP Reference Name	Total Acreage of target vegetation	Target Acreage	Acreage Not to Exceed
Pinyon-Juniper Woodlands	16,863	8,432	10,118
Sagebrush	9,182	4,591	5,509
Sonora-Mojave Semi-Desert Chaparral	1,046	418	628
Great Basin Semi-Desert Chaparral	2,289	916	1,373
TOTALS	29,380	14,357	17,628
Incidental Treatment Vegetation Types			
RMP Reference Name	Total Acreage	Target Acreage	Acreage Not to Exceed
Mojave Mid-Elevation Mixed Desert Scrub	3,659	0	0
Salt Desert Scrub	36	0	0
Riparian/Wetland	2,131	0	0

NOTE: All numbers within the table above have been derived from the work that The Nature Conservancy conducted based on mapping BPS locations within the watershed. If pre-monitoring indicates that vegetation types were mapped incorrectly, the error would be resolved and the percentages used to determine target acreages would be used to determine new acreages. If pre-monitoring indicates vegetation mapped as U (uncharacteristic) is a result of excess tree or shrub cover, then those acres would be added to the latest successional class (e.g., D or E) for that BPS model having the highest cover percentage in either shrub or trees. Target vegetation acreage was determined through applying a 50-60% limitation for treatment. Incidental/Avoidance vegetation types include vegetation that is not specifically targeted and would be avoided as much as possible, however these vegetation types may be treated in isolated pockets because they may occur within the treatment polygons.



Map 2.1. Treatment Unit 1 Delamar Mountain Unit

Primary treatment types would include:

- Mechanical Methods for restoration:
 - Mastication or other mechanical methods.
 - Hand cutting.
 - Dixie harrow.
 - Roller chopper.
 - Mowing.
- Chemical treatments:
 - Chemicals such as Tebuthiuron.
- Prescribed Fire.
- Seeding.

Adaptive Management

Adaptive management allows the use of secondary treatments to achieve the objectives set forth for the treatment unit. Post monitoring of the primary treatment(s) would be conducted to determine the effectiveness of the treatment. Secondary treatments may be conducted within primary treatments to the extent that the objectives for seral classes would be met.

- Chemical treatments:
 - Chemicals such as Tebuthiuron.
- Prescribed Fire.
- Seeding.
- Fencing.

2.3.3.2. Treatment Unit 2: Clover Mountain Unit

The treatment unit consists of a total of 16,243 acres and approximately 50-60% of that area, or approximately 8,121-9,746 acres, would be affected by the treatments Map 2.2, “Treatment Unit 2 Clover Mountain Treatment” (p. 36). It is not anticipated that every acre within the treatment area would be treated. Areas that would be targeted for treatment would generally be those areas that are in successional classes D, E, and U which accounts for 71 percent of the treatment area.

Treatment objectives specific to Treatment Unit 2:

- Reduce the amount of pinyon pine and juniper establishment within sagebrush communities by 75%.
- Open wildlife corridors by removing pinyon pine and juniper within drainages.
- Promote browse (bitterbrush, oak, etc.) within big game habitat.

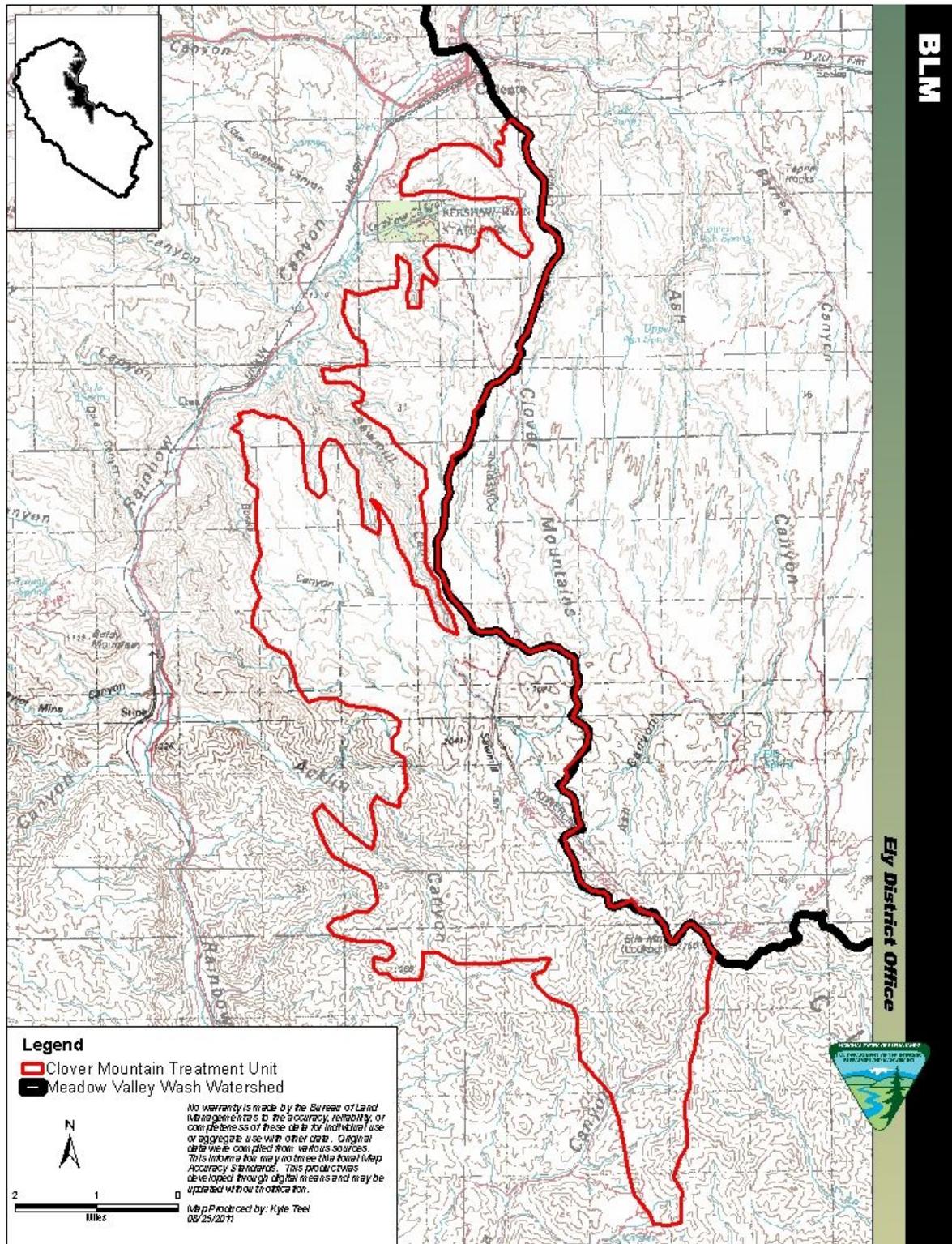
- Suppress and stabilize cheatgrass and promote desired vegetative species.
- Increase the “naturalness” of the area by reducing the density of pinyon pine and juniper and creating a more mosaic pattern and varied age class in all vegetative communities.
- Create a mosaic of varied age class within the Pinyon-Juniper Woodland area by creating numerous treated areas ranging in size from 10 to 1,000 acres.
- Eliminate/reduce pinyon pine and juniper underneath and within 50 feet of the drip edge of ponderosa pine trees.
- Reduce duff and brush by 60–80% within the ponderosa pine community through prescribed fire.
- Achieve a successional class breakdown within the sagebrush communities of 85% A-C, 5% D, 5% E and 5% U (non-native seeded) (+/-5%).
- Achieve a successional class breakdown within the pinyon and juniper woodlands of 5% A, 5% B, 20% C, 65% D, 5% E, and 0% U (+/-5%).
- Achieve a successional class breakdown within the Sonora-Mojave semi-desert chaparral of 65% A, 35% B, 0% C, 0% D, 0% E, and 0% U (+/-5%).
- Achieve a successional class breakdown within the Great Basin semi-desert chaparral of 15% A, 85% B, 0% C, 0% D, 0% E, and 0% U (+/-5%).
- Achieve a successional class breakdown within the ponderosa pine community of 10% A, 5% B, 20% C, 60% D, 5% E and 0% U (non-native seeded) (+/-5%).

Table 2.3. Vegetation Types for Treatment Unit 2

Target Vegetation Types			
RMP Reference Name	Total Acreage	Target Acreage	Acreage Not to exceed
Pinyon-Juniper Woodlands	7,275	3,638	4,365
Sagebrush	2,538	1,269	1,523
Sonora-Mojave Semi-Desert Chaparral	945	473	567
Great Basin Semi-Desert Chaparral	1,409	705	845
Ponderosa Pine	354	177	212
TOTALS	12,521	6,262	7,512
Incidental Treatment Vegetation Types			
RMP Reference Name	Total Acreage	Minimum Target Acreage	Acreage Not to exceed
Mojave Mid-Elevation Mixed Desert Scrub	2,314	0	0
Salt Desert Scrub	160	0	0
Riparian/Wetland	677	0	0

NOTE: All numbers within the table above have been derived from the work that The Nature Conservancy conducted based on mapping BPS locations within the watershed. If pre-monitoring indicates that vegetation types were mapped incorrectly, the error would be resolved and the percentages used to determine target acreages would be used to determine new acreages. If pre-monitoring indicates vegetation mapped as U (uncharacteristic) is a result of excess tree or shrub cover, then those acres would be added to the latest successional class (e.g., D or E) for that BPS model having the highest cover percentage in either shrub or trees. Target vegetation acreage was determined through applying a 50-60% limitation for treatment. Incidental/Avoidance

vegetation types include vegetation that is not specifically targeted and would be avoided as much as possible, however may these vegetation types may be treated in isolated pockets because they may occur within the treatment polygons.



Map 2.2. Treatment Unit 2 Clover Mountain Treatment

Primary treatment types would include:

- Prescribed Fire
- Chemical Treatments:
 - Chemicals such as Tebuthiuron .
- Methods for Restoration.
 - Dixie harrow.
 - Roller Chopper.
 - Mowing.
 - Mastication (Feller Buncher, Bullhog, etc) or other mechanical methods.
 - Hand Cutting.

Adaptive Management

Adaptive management allows the use of secondary treatments to achieve the objectives set forth for the treatment unit. Post monitoring of the primary treatment(s) would be conducted to determine the effectiveness of the treatment. Secondary treatments may be conducted within primary treatments to the extent that the objectives for seral classes would be met.

- Chemical treatments:
 - Chemicals such as Tebuthiuron for suppression of pinyon pine and juniper..
 - Chemicals such as Tebuthiuron for suppression of sagebrush
- Seeding
- Fencing
- Prescribed Fire

2.3.4. Monitoring

Monitoring would be conducted before and after implementation of the proposed vegetation treatments to establish baseline vegetation characteristics and determine post treatment success towards meeting treatment objectives. All monitoring techniques would follow BLM approved methods as established in the Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems (2009) or other similar approved manuals or references.

Monitoring locations would be randomly chosen within the project area and monitoring would be conducted at least one growing season prior to the implementation of the treatments. Additional monitoring points may be established post-treatment if it is determined that they are needed. Vegetation monitoring methods may include, but are not limited to, line-point intercept for cover, two meter belt transects for density, and photographs. The same monitoring locations and methods used to establish baseline data would be used to determine if post treatment vegetation objectives are being met. Additional monitoring locations and methodologies may be employed if needed to address resource concerns.

2.4. No Action Alternative

The No Action Alternative is the current management situation. There would be no treatments implemented within the proposed project areas as a result of this EA. However, treatments would still be considered and prioritized on a case-by-case basis by reviewing existing conditions and available funding resources for the planning and implementation of each individual project. Additional NEPA review would be required for each proposed treatment.

2.5. Alternatives Considered but not Analyzed in Detail

The following alternatives were considered, but were determined not to support the purpose and need for the proposal. They were, therefore, eliminated from further consideration.

2.5.1. No Chemical Alternative

Under the No Chemical Alternative, all of the treatment methods listed in the Proposed Action would be implemented except the chemical treatments listed in Section 2.3.2.3 Chemical Treatment Methods. This action was eliminated from further analysis because it would not achieve the purpose and need by (1) prohibiting sagebrush restoration treatments in areas where accessibility is limited and undesirable for use of prescribed fire or fire for resource benefit, (2) not allowing for sagebrush suppression while sustaining only a minimal impact to antelope bitterbrush and other desirable species, and (3) not allowing for the promotion of grasses and forbs that are in competition with older stands of sagebrush and provide important forage for wildlife species.

2.5.2. Native Seed Only Alternative

In the Use of Native Seed Only Alternative, all actions would be identical to those under the Proposed Action, except the composition of seed mixes applied after treatments. Under this alternative, only native seed would be used. This alternative was dropped for further consideration as the preference is already for native seed but allows for the use of non-native where their use would be more efficient at achieving the desired objectives. Several non-native desirable species have been found to grow successfully in the watershed and compete with invasive annuals. The use of native seed only could potentially limit the achievement of the objectives in circumstances where there is a threat of invasive annuals and recurring wildland fires.

2.5.3. Natural Fire Only Alternative

An alternative using only natural fire to affect the treatments was considered but eliminated from further consideration because, as indicated in the purpose and need statement, the watershed is in FRCC 2 with certain areas in FRCC 3. This condition results in an increase in the risk of losing key ecosystem components due to excess hazardous fuels. With these conditions, a fire would be difficult to control in some areas and would not achieve the desired results since fire severity would be increased. Additionally, there is a need to affect treatments in a more targeted manner across the watershed to achieve the purpose and need in a more timely manner. Given the uncertainty of fires starting from natural conditions, a more certain method of affecting desired changes is needed.

2.5.4. Hand Cutting Only alternative

An alternative using hand cutting would treat the same areas as the proposed action however, no chemical, fire, or other mechanical means would be used for treatment. Given the FRCC condition (mostly FRCC 2), This method would not be effective in making necessary changes to prevent further degradation in a timely manner.

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Chapter 3. Affected Environment

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3.1. Introduction

Potential impacts to the following resources/concerns were evaluated in accordance with criteria listed in the H-1790-1 NEPA Handbook (2008), to determine if detailed analysis was required. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely District BLM in particular. The items listed in Table 3.1, “Resources that have been reviewed and dismissed from detailed analysis” (p. 43) have been reviewed and determined to be unaffected by the Proposed Action and No Action Alternative.

Table 3.1. Resources that have been reviewed and dismissed from detailed analysis

Resource/Concern	Rationale for dismissal from detailed analysis
Threatened and Endangered Species	A threatened species, the Southwest Willow flycatcher is known to occur within the Meadow Valley Wash North Watershed. A discussion follows.
Wild Horses	There are no wild horse Herd Management Areas in the Meadow Valley Wash North Watershed. Historic Herd areas exist and wild horses can still be found in the watershed. The historic Herd Areas are Clover Creek, Clover Mountain, Delamar Mountain, Bluenose Peak, Applewhite and Meadow Valley Mountains. Treatments may lead to a temporary displacement of the wild horses, but should have no lasting impacts. Currently the project areas are not managed for wild horses due to habitat suitability issues.
Water Resources (Water Rights)	Design features, including buffering drainages and riparian areas during treatments, will prevent potential impacts to water resources. No water rights will be affected. No adverse effects to water resources or water rights are expected.
Water Quality, Drinking/Ground	Project design features, buffer zones, topography, vegetation and other natural ecosystem components act to preclude sediment from hillsides from entering waterways. The natural buffering capability of the hillsides and vegetation surrounding the intermittent and perennial streams with the added design feature buffers placed upon these same systems combine to maintain water quality. The application of potential treatments upon the landscape would not affect the water quality in the watershed.
Cultural Resources	Cultural resources would be avoided or mitigated prior to ground disturbing activities.
Native American Religious and other Concerns	There are no Native American traditional religious sites or cultural sites of importance within the proposed project area that would be affected as a result of this project. There are no 'Indian Trust Assets' identified within the Ely District Office.
Environmental Justice	There are no known disadvantaged populations that would be adversely impacted by the project.
Human Health and Safety	All applicable safety requirements and regulations would be incorporated into the design of each treatment prior to implementation. Appropriate design features have been incorporated into the proposed action to minimize exposure and risk to human health and safety. Risk Management Worksheets will be completed prior to any treatments being applied.
Wastes, Hazardous or Solid	No known hazardous or solid wastes exist within the Meadow Valley Wash North Watershed. Any spills or discoveries of hazardous or solid wastes would be reported immediately to the approving official. Any such situations would be addressed swiftly and by following appropriate rules, regulations and protocols.
Wild and Scenic Rivers	There are no wild and scenic rivers in the Meadow Valley Wash North Watershed.
Special Designations, including Areas of Critical Environmental Concern (ACEC)	The Lower Meadow Valley Wash ACEC lies with the project area. This ACEC has been set aside in order to protect Southwestern Willow Flycatcher habitat. As none of the proposed actions or treatments are planned to occur in this area, there should be no impacts.
Mineral Resources	There are no approved mine plans or drilling permits within the project area. Any areas containing permitted mineral material sources would be avoided.

3.2. Air Quality

The federal Clean Air Act requires the United States Environmental protection Agency to establish standards for pollutants considered a danger to public health. Seven criteria are monitored and assessed against the national air quality standards. Air quality in Lincoln County exceeds standards for lead and are considered unclassifiable/attainment for carbon monoxide, particulate matter less than or equal to both 2.5 and 10 micrometers, nitrogen dioxide, ozone, and sulfur dioxide.

3.3. Soil Resources

Soils within the watershed vary in characteristic as position on the slope changes. The valley bottom soils have well-drained moderately deep very gravelly soils resulting from coluvium. The valley is subject to scouring events due to the moderately steep slopes and narrow valleys.

The very steep hillside and mountain soils are very gravelly or very cobbly loam with coarse fragments derived from volcanic materials.

3.4. Vegetation

3.4.1. Rangeland Vegetation

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

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

Pinyon pine and juniper are becoming established on sagebrush habitats within the watershed. The expansion of pinyon pine 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.

The alteration of the fire regime has led to a progression towards FRCC 2 and FRCC 3. These vegetative conditions have the potential to carry rapidly moving wildfires that are both of high

intensity and severity. Wildfire of such intensity may also pose threats to life and property within the area both in terms of direct impact from the fire and excessive amounts of smoke emissions. Wildfires that occur under these conditions have potential to create impacts that are outside the natural ecological disturbance regime altering the soils, vegetative, hydrologic function, and habitat within the watershed. Following such a wildfire, the damage can be difficult or impossible to reverse.

3.4.2. Forest and Woodland Vegetation

Forest and woodland vegetation within the Meadow Valley Wash Watershed consists of three primary groups of vegetation: pinyon pine and juniper woodlands, ponderosa pine (*Pinus ponderosa*), and mountain-mahogany woodlands. Table 3.2 shows the percentage of the watershed in each category by forest and woodland vegetation type (based on biophysical settings). Table 3.2, “Distribution of forest and woodland vegetation type in the Meadow Valley Wash North Watershed” (p. 45) shows the percentage of the watershed in each category by forest and woodland vegetation type (based on biophysical settings).

Table 3.2. Distribution of forest and woodland vegetation type in the Meadow Valley Wash North Watershed

Vegetation	Vegetation Group	Acres	Percent of Watershed	Average Departure
Pinyon /Juniper	Woodland	72,083	31%	53%
Curlleaf Mountain-mahogany	Woodland	1,038	0.44%	91%
Ponderosa pine	Forest	1,116	0.48%	62%

The current health of the forest and woodland areas in the watershed varies by location, past disturbances, and current vegetation type. In general, due to altered disturbance regimes and the lack of repeated disturbance in the watershed, forest and woodland communities are overly dense. A large portion of the forests and woodlands are in later successional classes (Classes D and E) and often in uncharacteristic classes due to densities much greater than those found in the reference condition. A complete summary of each vegetation type (BPS model) by succession class is presented in Appendix C.

Pinyon pine and juniper woodlands within the watershed are generally in late successional age classes. Many of the stands are in a closed canopy state due to high densities of trees. Canopy cover that exceeds that listed within the reference condition within the BPS model can be rated as uncharacteristic native (succession class UN).

Ponderosa pine stands are in general over represented in the older successional classes. This system needs fire to increase the odds of successful regeneration. Without disturbance, these communities increase in average age and density and become unhealthy and at risk of insect and disease. In addition, this community is at risk of uncharacteristic wildfire intensities due to ladder fuels (pinyon pine and juniper) increasing and encroaching on the stands.

Curlleaf mountain-mahogany is in a state of late successional age classes in the watershed due to a lack of natural or anthropogenic disturbance in the past century. Mountain-mahogany requires bare mineral soil (following fire) to regenerate and, because of the lack of fire in the watershed over the past century, the result is that younger age classes are missing from the landscape.

3.4.3. Special Status Plant Species

The following special status plant species are known to occur in the Meadow Valley Wash North Watershed.

Needle Mountains Milkvetch (*Astragalus eurylobus*)

This plant is a perennial herb that is about 24 cm long with clusters of pink-purple flowers that bloom from late April to early July. The plant usually grows in deep, barren, sandy, gravelly, or clay soils derived from sandstone or siliceous volcanic soils, frequently found in or along drainages. The last survey for this plant was in 1985-1986 (Nevada Department of Conservation and Natural Resources. 2006).

Long-calyx Eggvetch (*Astragalus oophorus* var. *lonchocalyx*)

This plant is endemic to the Great Basin and can be found in Beaver, Iron, and Washington Counties in Utah, and Lincoln County in Nevada. This plant is a perennial herb that has pin-purple flowers that bloom in May. This plant usually grows in pinyon-juniper, sagebrush, and mixed desert scrub communities at 5,800 to 7,550 ft. in elevation. The last survey for this plant was conducted in 1989 (Nevada Department of Conservation and Natural Resources. 2006).

Nevada Willowherb (*Epilobium nevadense*)

This plant is a shrubby perennial herb that is about .5-1.5 ft. tall and produces several pink-purple flowers from July to September. This plant is associated with slopes with limestone outcrops or talus at 5,100-9,100 ft. elevation. It is usually associated with single-leaf pinyon (*Pinus monophylla*) and ponderosa pine (*Pinus ponderosa*). It was last surveyed for in 1996 (Nevada Department of Conservation and Natural Resources. 2006).

3.4.4. Non-native Invasive and Noxious Species

Cheatgrass (*Bromus Tectorum*) may be found in all treatment units. While not specifically located within the treatment units, the following invasive species are known to occur within the watershed: bull thistle (*Cirsium vulgare*), hoary cress (*Lepidium draba*), musk thistle (*Carduus nutans*), and scotch thistle (*Onopordum acanthium*). There is also probably halogeton (*Halogeton glomeratus*), Russian thistle (*Salsola kali*), Tumble mustard (*Sisymbrium altissimum*) and bur buttercup (*Ranunculus testiculatus*) scattered along roads in the area. The area was last inventoried for noxious weeds in 2007.

3.5. Vegetative Products

The Meadow Valley Wash North Watershed is a popular location for gathering vegetative products on the Ely BLM District. Vegetative products gathered in the area include pine nuts, fuelwood, posts and poles, native seeds, and Christmas trees. Being close to both Caliente and Panaca, many locals use this area extensively for harvesting vegetative products. Pinyon pine and juniper fuelwood is gathered throughout the planning area by a large percentage of the fuelwood burning public (both for commercial and private use). Posts and poles, primarily Utah juniper, are also harvested within the planning area at lower rates. Christmas trees, including pinyon pine and white fir are also harvested. Pine nuts are harvested for both personal and commercial use in this area.

3.6. Fish and Wildlife Resources

3.6.1. Fish and Wildlife

Federally Endangered Species

Southwestern willow flycatchers prefer thickets, scrubby and brushy areas, open second growth areas, swamps, and open woodlands. This bird nests primarily in swampy thickets, especially those composed of willow and sometimes those composed of buttonbush, tamarisk, vines, or other plants, where vegetation is 4-7 m or more in height. Tamarisk is commonly used by these birds in the eastern part of their range. This species nests in the forks of trees or on a horizontal limb of small trees, shrubs, or vines, at a height of about 2-3 m, with dense vegetation above and around the nest. Southwestern willow flycatchers mainly eat insects caught in flight, but sometimes will glean insects from foliage. They will occasionally also eat berries. Southwestern willow flycatchers forage within and occasionally above dense riparian vegetation.

Southwestern willow flycatchers have been detected infrequently along Meadow Valley Wash. Surveys have detected flycatchers in or adjacent to areas where the vegetation was defined as suitable breeding habitat (BioWest 2005a). Flycatchers have been observed just north of the south Highway 93 bridge in Caliente (as described in BioWest 2005a), in Rainbow Canyon, and in the vicinity of Rox. Breeding birds were also detected in Rainbow Canyon in 1998. The most recent observations were made by NDOW in 2002 (Nevada Department of Conservation and Natural Resources, 2006). Long-term flycatcher surveys have not been consistently conducted in Meadow Valley Wash; therefore, current information on flycatcher presence in the area is lacking.

The floodplain of the Meadow Valley Wash is narrow, with a gradient steep enough to produce flash floods during heavy rains. These flash floods strip the vegetation and change the location of the main channel. Sediment flows are also very heavy in the drainage. In January of 2005, Meadow Valley Wash experienced a 100-year flood event that scoured the floodplain, removing much of the habitat suitable for flycatchers. BioWest (2005b) estimated that approximately 50 percent of the suitable flycatcher habitat in the wash was stripped by the flood. The vegetation is expected to resprout and the habitat will likely recover over time.

Big Game

Managed big game species that occur in the Meadow Valley Wash Watershed (North and South) include Rocky Mountain elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), and bighorn sheep (*Ovis canadensis nelsoni*).

Rocky Mountain elk occur in a wide variety of habitats within the Watershed, from valley benches during winter to the highest elevations during summer and fall. The Ely RMP delineates 8,624 acres of yearlong elk habitat within the watershed. This habitat includes sagebrush-grasslands, and pinyon pine and juniper woodlands. Pinyon pine and juniper woodlands provide thermal and escape cover. Additionally, brush species, including antelope bitterbrush (*Purshia tridentata*), serviceberry (*Amelanchier alnifolia*), and sagebrush, provide important cover and forage for elk.

Mule deer are widespread within the watershed and are typically associated with middle to upper elevations. Within the Meadow Valley Wash North Watershed, there are 94,587 acres of yearlong habitat and 133,618 acres of crucial summer range. Habitat for mule deer within the watershed includes mixed conifer, aspen, big sagebrush, low sagebrush, grasslands, and agricultural lands.

Deer generally are classified as browsers, foraging primarily on forbs and shrubs. However, the importance of forage type varies with season and climate. Forbs and grasses are an integral part of the mule deer diet during the spring and fall growth seasons when succulence is at its greatest. Shrubs are utilized more heavily during dry summer and winter periods. Important forage shrubs include sagebrush, serviceberry, and antelope bitterbrush. Pinyon pine and juniper woodlands are important for thermal and escape cover. During summer, mule deer tend to rely on riparian and mountain sagebrush communities at higher elevations to satisfy these requirements.

Desert bighorn sheep prefer open areas of low-growing vegetation for feeding, with close proximity to steep, rugged terrain for escape, lambing, and bedding, an adequate source of water, and travel routes linking these areas. Within the watershed, there are 10,428 acres of occupied habitat and 194,936 acres of unoccupied habitat. The bighorn diet consists of a wide variety of plant species. Green, succulent grasses and forbs are preferred however, browse is important throughout the year, especially for populations in arid habitats. Some sheep populations use mineral licks, and some may be limited by phosphorus content of the soil and vegetation. Desert bighorn sheep feed in open habitats, such as rocky barrens, meadows, and low, sparse brushlands but like to remain near rugged terrain. Other species important as forage species include alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, species found in palm oasis, desert riparian species (rushes and sedges), desert succulent shrubs, subalpine conifer, perennial grassland, montane chaparral, and montane riparian plants. Desert bighorn sheep use rocky, steep terrain for escape and bedding.

Although differing in their preferred forage, areas of seasonal use, and optimal habitat needs, desired population levels and distribution for all big game species requires a mosaic of healthy and diverse vegetation types. While crested wheatgrass seedings, historically planted in the valley bottom, have nutritional value and can be attractive to wildlife, type conversion has resulted in the loss of preferred native wildlife forage plants and overall negative impacts on wildlife habitat. Lands converted to agricultural crop production may serve as a wildlife attractant and have seasonal benefits, but have resulted in the additional loss of native wildlife forage plants and overall negative impacts on wildlife habitat. Pinyon-juniper forests provide important escape and thermal cover, but the increasing establishment of woody species, within ecological sites that typically support shrub-dominated and grassland communities, has decreased the quality of the herbaceous understory in terms of reduced plant productivity, diversity, and canopy cover. Although these trends benefit species that occur primarily in woodland habitats, these trends also lead to loss of forage (grass and forb) production within dense woodland stands and a reduction of species diversity. Degraded habitat conditions due to pinyon pine and juniper invasion and decadent or senescent sagebrush communities across areas of the watershed may reduce big game population potentials.

The planning area also provides habitat for an array of other wildlife species such as coyotes (*Canis latrans*), rabbits (*Lepus and Sylvilagus spp.*), badgers (*Taxidea taxus*), bobcats (*Lynx rufus*), grey and red foxes (*Urocyon cinereoargenteus and Vulpes vulpes*), ring-tailed cats (*Bassariscus astutus*), and numerous other small mammals, reptiles, amphibians, and invertebrates.

3.6.2. Migratory Birds and Raptors

3.6.2.1. Migratory Birds

Migratory birds are those listed in 50 CFR 10.13 and include many native species commonly found in the U.S. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA). The MBTA makes it unlawful to take, kill, or possess migratory birds as defined by 16 USC 703-711. Migratory bird nesting and foraging habitats are located throughout the Meadow Valley Wash Watershed, with certain species adapted to specific habitat types. All native bird species are integral to properly functioning natural communities and commonly are viewed as indicators of environmental quality based on their sensitivity to environmental changes caused by human activities. Based on known habitat associations, migratory bird species composition may be somewhat anticipated. Great Basin Bird Observatory sampled numerous atlas blocks across Nevada for inclusion within the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). Table B.3 in Appendix B lists the breeding birds documented in the watershed from the surveyed atlas blocks. This list is not exhaustive as it is based only upon surveys or incidental observations for the Atlas during four survey years (1997-2000).

3.6.2.2. Raptors

The Meadow Valley Wash Watershed supports a diverse suite of raptor species with 11 species documented in the watershed. Though only four species have been documented as having nested, it can be assumed that a portion of the observed species could be nesting in the watershed. Great horned owls (*Bubo virginianus*) have been observed on adjacent portions of the Meadow Valley Wash and there is a high probability the watershed hosts barn owls (*Tyto alba*). Specific habitat needs vary by species and season, but all raptors have the common requirement of an adequate prey base of small mammals, birds, and/or insects.

3.6.2.2.1. Bald and Golden Eagles

Bald and golden eagles are protected from take by the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits take as defined as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, disturb, or otherwise harm eagles, their nests, or their eggs. Under the BGEPA, “disturb” means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior. All management activities within the Meadow Valley Wash Watershed would follow the guidelines in the Interim Golden Eagle Technical Guidance (US Fish and Wildlife Service, 2010).

Golden eagles are common in the Meadow Valley Wash Watershed and use the area year round. Golden eagles have large breeding home ranges and are generally spread thin on the landscape (Floyd et al. 2007). Golden eagles typically nest on large cliffs and canyon walls, or on tall, artificial structures, such as electrical poles and towers, and they frequently use these vertical structures to perch while hunting as well. Golden eagles build several nests within their territory and use them alternately for several years. Though found in most habitats, golden eagles are often seen hunting in sagebrush habitats (Floyd et al. 2007). The predominant prey of Golden

eagles are leporids (hares and rabbits), sciurids (ground squirrels, prairie dogs, and marmots), and gallinaceous birds (pheasants, partridge, and grouse). Golden eagles also regularly scavenge on carrion which has resulted in relatively high local vehicle collision mortalities for eagles. Electrocutation and illegal shootings are other significant sources of eagle mortality.

Bald eagles are transients and occur in Meadow Valley Wash as they migrate north and south. There are no known nests of Bald eagles in Meadow Valley Wash.

3.7. Wetlands and Riparian Areas

There are three named flowing water sources within the Meadow Valley Wash North Watershed; Willow Creek, Ash Creek, and Meadow Valley Wash itself which enters at the north end of the watershed from the Clover Creek Watersheds to the north and exits into Meadow Valley Wash South on the south end of the watershed.

While there are no named springs in the treatment areas, there are several spring sources and wells in the watershed that contribute to ephemeral streams and seeps. These sources feed in to Meadow Valley wash or dissipate after a short distance.

The lotic riparian areas range from moderately disturbed systems in the valley bottom where stream channels were altered to accommodate other water needs to more pristine areas higher up in the watershed. The riparian vegetation in these areas is dominated by rushes, sedges, grasses, and willows are common. Higher up the piedmonts within the old confined stream channels the lotic systems are dominated by grasses and sedges with clumps of willow common. Water Birch may be found on streambanks that were altered.

Lentic riparian areas associated with stream valley systems tend to be dominated by grasses with rush and sedge components and willows common. These areas range in size from isolated patches which are only tenths of acres to stringers of vegetation which follow the stream for miles and are hundreds of feet wide. Lentic riparian areas are also associated with springs throughout the watershed. Many small, unnamed springs flow or seep and have small areas of riparian vegetation develop in and around the saturated soil. Small lentic systems may be ephemeral and dependent upon snowmelt or spring precipitation. In the headwaters of the streams and some intermittent and ephemeral drainages, quaking aspen stands can be found either associated with lentic riparian areas or as a lone stand of trees.

3.8. Floodplains

A search of the Federal Emergency Management Agency (FEMA) Map Service Center electronic maps for Lincoln County, Nevada showed the City of Caliente and portions of Meadow Valley Wash mapped for floodplains. Within the City of Caliente areas adjacent to Meadow Valley Wash lie within the 20 to 100 year floodplain with elevations mapped by FEMA to approximately 6.5 miles south of Caliente. The remainder of the Meadow Valley Wash North Watershed is unmapped for floodplain delineation.

3.9. Prime and Unique Farmlands

No Unique Farmlands exist in the State of Nevada. Prime Farmlands are soils that when treated and managed in particular ways and using proper farming methods can favor economic production

of crops. In the Meadow Valley Wash North Watershed there were soil associations and soil series that when irrigated and protected from flooding are considered prime farmlands. These farmlands are found only in the bottoms along Meadow Valley Wash near the City of Caliente and are approximately 350 total acres in size.

3.10. Livestock Grazing

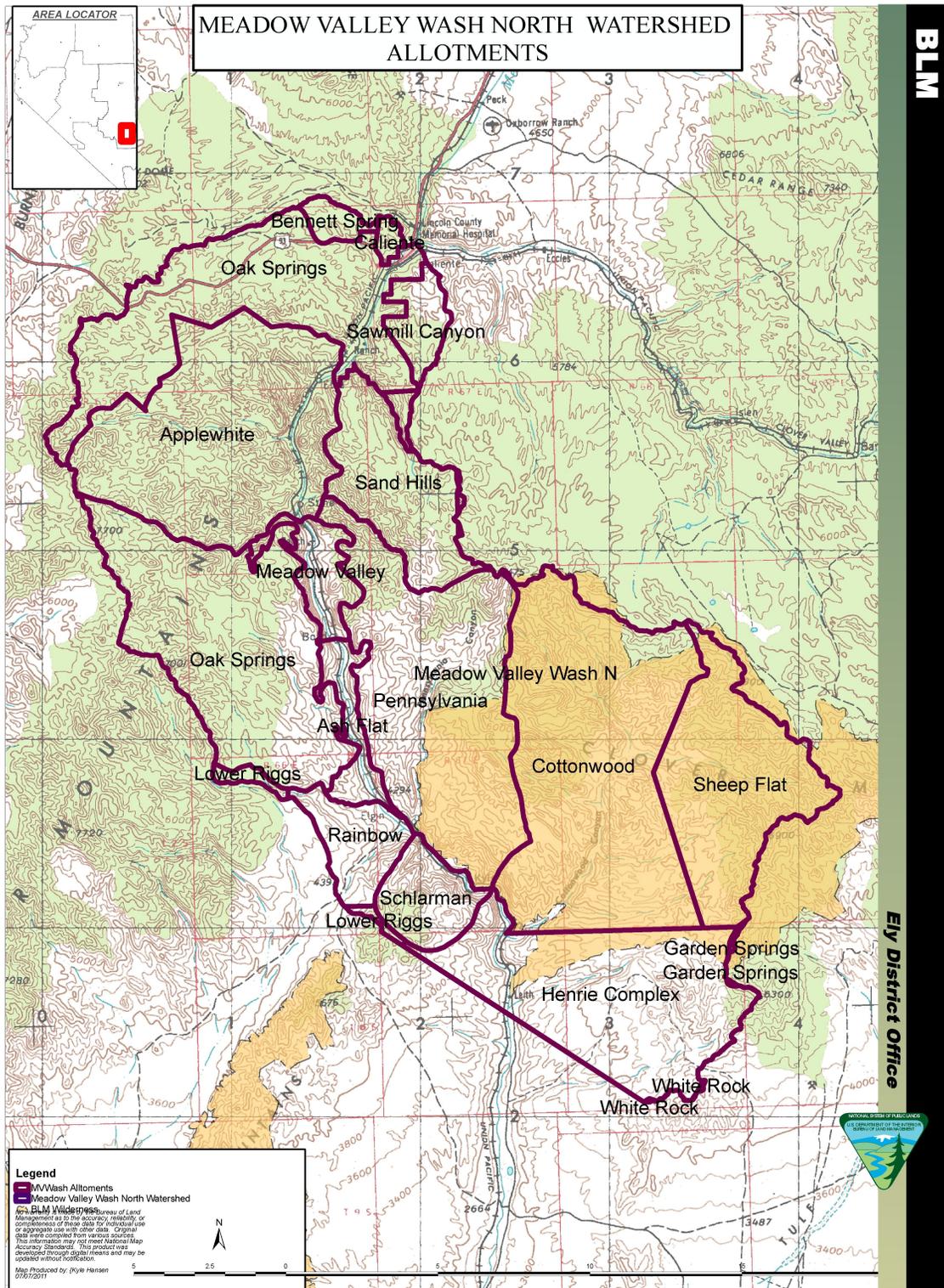
Past actions within the proposed project area have resulted in reduced livestock numbers over time. Livestock grazing in the region has evolved and changed considerably, since it began in the 1870's, and is one factor that has resulted in the current condition of the environment. During the 1800's and early 1900's, 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 increased erosion, rills and gullies. In response to these problems, livestock grazing reform began in 1934 with the passage of the Taylor Grazing Act, and was further supported with the passing of the Federal Land Policy and Management Act of 1976. Subsequent laws, regulations and policy changes have resulted in adjustments in livestock numbers, season of use and other management actions designed to reverse the effects of previous unregulated grazing; and improve the health of the land. The proper management of livestock grazing is one of many important factors in ensuring the protection of Public Land resources.

Table 6 displays general information for allotments associated with the Meadow Valley Wash North Watershed and the allotments associated with the treatment area.

Table 3.3. General Allotment Information for Allotments Associated with the Meadow Valley Wash North Watershed and Allotments Associated with the Treatment Area.

Allotment (Allotment Number)	Livestock Kind / Season of Use	Active Use
Bennett Springs (#21006)*	Sheep 10/16 – 4/30	3,498
Caliente (#21014)*	Cattle 3/1 – 2/28	40
Oak Springs (#01050)*	Cattle 3/1 – 2/28	9,268
Sawmill (#01067)	Cattle 3/1 – 2/28	189
Applewhite (#21001)*	Cattle 3/1 – 2/28	562
Sand Hills (#01088)	Cattle 6/1 – 10/31	229
Meadow Valley (#01041)	Cattle 10/1 – 2/28	56
Ash Flat (#21002)	Cattle 10/1 – 2/28	74
Pennsylvania (#01056)	Cattle 10/1 – 2/28	588
Cottonwood (#21021)	Cattle 3/1 – 2/28	1,177
Sheep Spring (#01070)	Cattle 6/1 – 3/15	409
Rainbow (#11028)	Cattle 10/1 – 4/30	665
Schlarman (#01068)	Cattle 10/1 – 4/30	240
Henrie Complex (#11034)	Cattle 11/1 – 4/30	1,380

* Allotments Associated with the Treatment Area.



Map 3.1. Grazing Allotments Associated with the Meadow Valley Wash North Watershed

3.11. Recreation

The Meadow Valley Wash North Watershed offers a wide variety of recreational activities. Recreation in the valley is moderate and dispersed, and primarily consists of off-highway vehicle use, dirt biking, hunting, wildlife viewing, fishing, camping, hiking, cross-country skiing, horseback riding, caving, and mountain biking.

The Bureau of Land Management (BLM) created a management plan for a system of Off-Highway Vehicle (OHV) recreational trails and facilities in the Chief Mountain Special Recreation Management Area (SRMA), located in Lincoln County, Nevada. In the BLM revised Land Use Planning Handbook, SRMAs are defined as administrative units where the existing or proposed recreation opportunities and characteristics of the recreation setting are recognized for their unique value, importance and/or distinctiveness, especially as compared to other areas used for recreation (H-1601-1). The Chief Mountain SRMA has been identified by the BLM Ely District Office to provide a range of recreational uses, particularly motorized. The Ely District Record of Decision (ROD) and Approved Resource Management Plan (RMP) limits motorized travel to existing roads and trails until site-specific plans and designations are complete (BLM 2008).

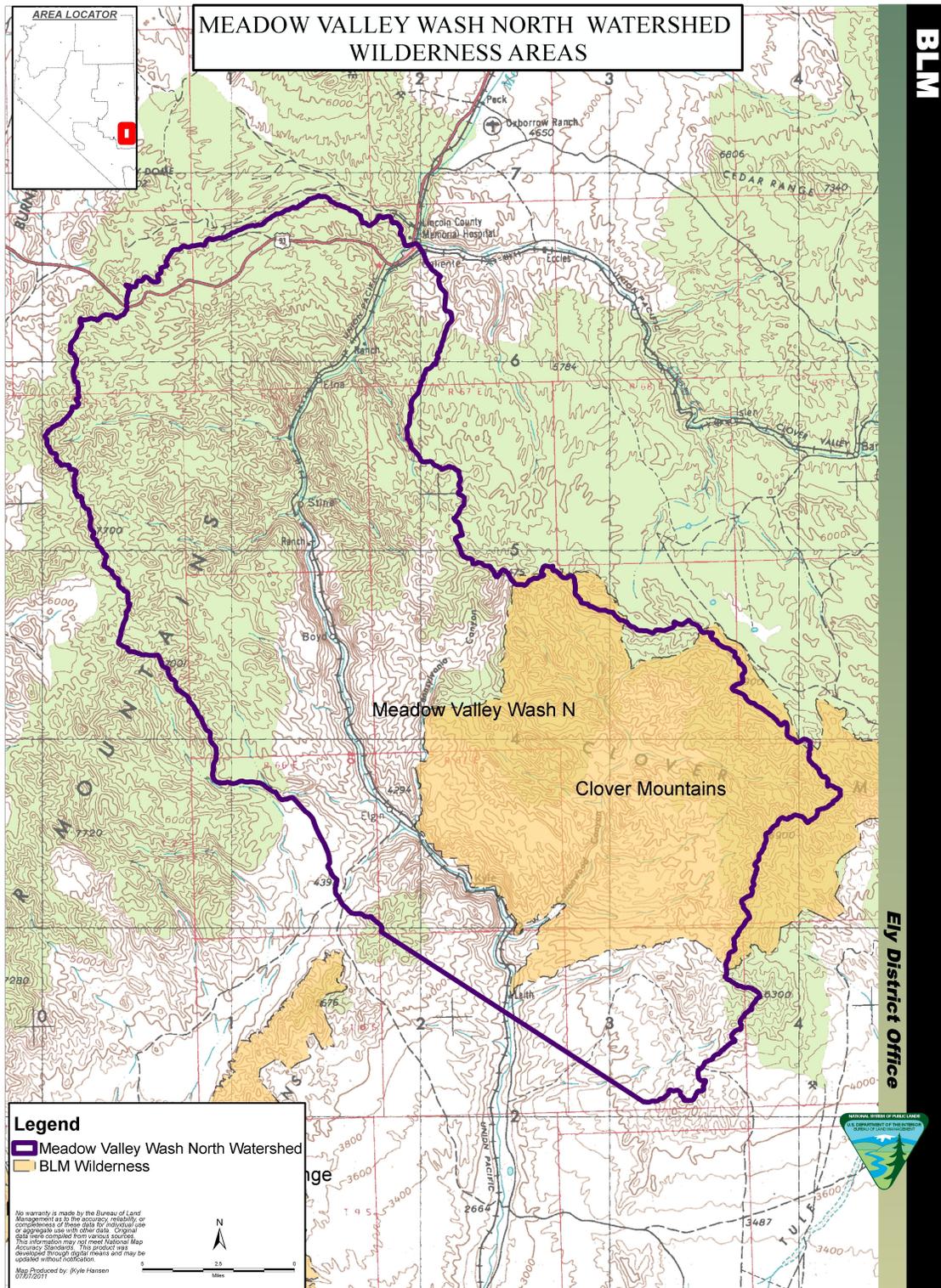
The Chief Mountain SRMA is managed for limited OHV use, where such use is restricted to designated roads and trails. There are approximately 370 miles of existing roads, routes, and trails in the Chief Mountain SRMA, and with expected increases in OHV recreation use in the future, the BLM has completed a trail development plan that designates a system of OHV trails based on existing routes, closures of certain existing segments, the creation of trailhead facilities and staging areas, and the creation of a limited amount of new trail. New trail routes would be minimal, utilizing currently disturbed areas and resulting in no net gain of trail mileage in the SRMA.

3.12. Wilderness

Approximately 80 percent of the Clover Mountain Wilderness Area lies within the boundaries of the Meadow Valley Wash North Watershed (see Map 3.2, “Meadow Valley Wash North Wilderness Areas” (p. 54)).

The Wilderness Act of 1964 defines wilderness and mandates that the primary management direction is to preserve wilderness character. Although wilderness character is a complex idea and was not explicitly defined in the Wilderness Act, it may be described as the combination of biophysical, experiential, and symbolic ideals that distinguish wilderness from all other lands. Wilderness areas, regardless of size, location, or any other feature, are unified by this statutory definition of wilderness. The four qualities of wilderness, related to wilderness character are:

- *Untrammeled* — area is unhindered and free from modern human control or manipulation.
- *Natural* — area appears to have been primarily affected by the forces of nature.
- *Undeveloped* — area is essentially without permanent improvements or human occupation and retains its primeval character.
- *Outstanding opportunities for solitude or a primitive and unconfined type of recreation* — area provides outstanding opportunities for people to experience solitude or primeval and unrestricted recreation, including the values associated with physical and mental inspiration and challenge.

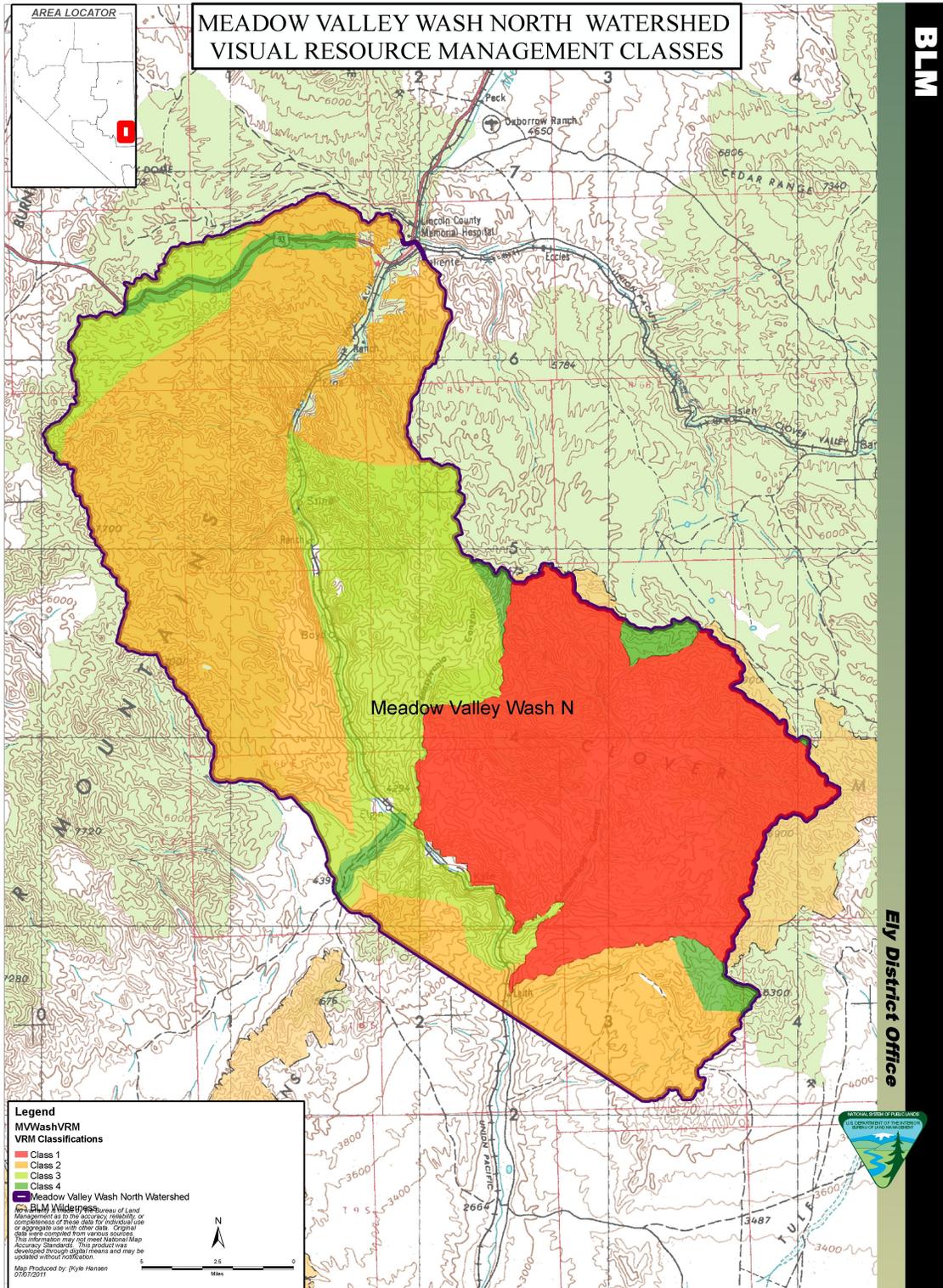


Map 3.2. Meadow Valley Wash North Wilderness Areas

3.13. Visual Resource Management

Visual resources are identified through the Visual Resource Management (VRM) inventory. This inventory consists of a scenic quality evaluation, sensitivity level analysis and a delineation of distance zones. Based on these factors, BLM-administered lands are placed into four visual resource inventory classes: VRM Class I, II, III and IV (BLM Manual 8400, 1984). Class I and II are the most valued, Class III represents a moderate value and Class IV is of the least value. VRM classes serve two purposes: (1) as an inventory tool that portrays the relative value of visual resources in the area, and (2) as a management tool that provides an objective for managing visual resources.

The proposed project area occurs within Visual Resource Management (VRM) classes I (approximately 30%), II (approximately 35%), III (approximately 25%) and IV (approximately 10%).



Map 3.3. Visual Resource Management (VRM) classes in the Meadow Valley Wash North Watershed

The Class I VRM objective is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

The Class II VRM objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The Class III VRM objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the landscape. Changes caused by management activities may be evident and begin to attract attention, but these changes should remain subordinate to the existing landscape.

The Class IV VRM objective is to allow for management activities that involve major modification of the existing character of the landscape. The level of contrast can be high – dominating the landscape and the focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the characteristic landscape.

3.14. Fuels and Fire Management

3.14.1. Fuels

Fuel types within the Meadow Valley Wash Watershed represent a broad range of vegetation from pinyon and juniper woodlands to Mojave creosotebush. Presently, fire suppression within the non-desert portion of the planning area has led to an alteration of fire cycles leading to an increase in fuel build up and continuity of fuels, causing an increase in the potential for large uncontrollable fires.

Biophysical setting (BPS) models describe the vegetation, geography, biophysical characteristics, succession stages, disturbance regimes and assumptions for each vegetation type (Barrett et al, 2010). For each BPS model reference conditions have been developed to describe the distribution of seral stages within a landscape prior to European influence. Seral classes represent a scale of vegetative succession as a community progresses from post-replacement to later successional states.

BPS models were utilized within the Ely RMP, which lists vegetation types and a desired future condition expressed as percentages of seral classes. The RMP has grouped some BPS models (such as sagebrush models), which incorporates all of the sagebrush systems.

FRCC ratings are based on the comparison of the current seral states of the vegetation as compared to the reference condition on a large scale. The appropriate scale to calculate stratum FRCC ratings, as presented within the Interagency FRCC Guidebook (Barrett et al. 2010), is dictated by the fire regimes present as shown in Table 3.4, “Fire regime as described by frequency

and severity as well as FRCC assessment size and the relative percentage of the Meadow Valley Wash North Watershed.” (p. 58).

Table 3.4. Fire regime as described by frequency and severity as well as FRCC assessment size and the relative percentage of the Meadow Valley Wash North Watershed.

Fire Regime Group	Fire Frequency (years)	Fire Severity	FRCC Assessment Area Size (acres)	Percent of Watershed
I	0-35	Low/mixed	500-5,000	1
II	0-35	Replacement	500-10,000	0
III	35-200	Mixed/low	5,000-20,000	37
IV	35-200	Replacement	20,000-500,000	17
V	200+	Any Severity	1,000-20,000	45

Fire Regime Condition Class is a measure commonly used and accepted for the measurement and characterization of fuels conditions. Fire regimes represent classifications of wildfire within vegetation types based on two criteria: fire severity and fire frequency. Fire frequency represents the average number of years between fire occurrences. Fire severity, in terms of fire regime, is defined by the replacement of the upper canopy of vegetation. This replacement of vegetation is independent from the degree of mortality of the vegetation that composes the upper canopy. Fire severity is described as Low (<5% replacement), Mixed (26-75% replacement), Replacement (>75% replacement).

FRCC refers to the amount of departure from the Historical Range of Variability (HRV). The Interagency FRCC Guidebook (Barrett et al. 2010) defines HRV as the variability and central tendencies of biophysical, disturbance, and climatic systems, across landscapes and through time, in the absence of modern human interference. FRCC is characterized into three classes:

- FRCC 1 – Less than 33% departure from the central tendency of the historical range of variation (HRV): Fire regimes are within the natural or historical range and risk of losing key ecosystem components is low. Vegetation attributes (composition and structure) are well intact and functioning.
- FRCC 2 – 33 to 66% departure from the HRV: Fire regimes have been moderately altered. Risk of losing key ecosystem components is moderate. Fire frequencies may have departed by one or more return intervals (either increased or decreased). This departure may result in moderate changes in fire and vegetation attributes.
- FRCC 3 – Greater than 66% departure from the HRV: Fire regimes have been substantially altered. Risk of losing key ecosystem components is high. Fire frequencies may have departed by multiple return intervals. This may result in dramatic changes in fire size, fire intensity and severity, and landscape patterns. Vegetation attributes have been substantially altered.

FRCC ratings for the Meadow Valley Wash Watershed have been calculated utilizing the BPS data collected and ground truthed by The Nature Conservancy. Current FRCC ratings for the Meadow Valley Wash Watershed demonstrate a departure of 55% and an FRCC 2 classification. Stratum FRCC ratings for the major BPS models present are presented in Appendix D.

Vegetation treatments previously conducted within the Meadow Valley Wash Watershed total approximately 900 acres of mechanical pinyon pine and juniper removal.

3.14.2. Fire Management

Fire occurrence within the watersheds since 1980 has resulted in 220 fires for a total of approximately 68,000 acres. The fire size varied from less than 1/10th of an acre to 26,522 acres with an average of 309 acres. Fire size has been limited due to aggressive suppression efforts and relative good access to fires within the watershed.

Current fire management is guided by the Ely District Fire Management Plan (FMP) (USDI–BLM, 2004). The FMP is divided into 25 different Fire Management Units (FMUs). Each of these FMUs is assigned a classification or type that defines the primary resource management objective, fire protection values and fire size constraints. The Meadow Valley Wash Watershed occurs within five FMUs (See Figure 1, Map of Fire Management Units Figure 3.1, “Fire Management Units in Meadow Valley Wash North Watershed” (p. 61)

Treatment acres are listed in the FMP and are listed below in Table 3.5, “Fire constraints listed within the Fire Management Plan.” (p. 59). Wildland fire for Resource Benefit and prescribed fire are approved within all FMUs within the project area.

Table 3.5. Fire constraints listed within the Fire Management Plan.

Fire Management Unit	Percent of Watershed	FMU Type	Fire Size Constraint*
Elgin/Blue Nose/Kane Spring PJ	23	Vegetation (Mtn. Shrub)	High – 50 acres
Mojave	6	Special Mgt. Area	High – 25 acres
Clover/Delamar/S. Pahroc/Irish	70	High Value Habitat (Low Constraints)	Low – 1,000 acres
Lincoln County WUI	1	WUI (Urban)	High – 1 acres
Southern Benches HVH	<1	High Value Habitat (High Constraints)	High – 50 acres

*90 percent of the time. Deviation from the acre target would be allowed.

The number of acres that can be treated via fire are listed in the FMP and are listed below in Table 3.6, “Fire and treatment limitations listed within the Fire Management Plan.” Wildland fire for Resource Benefit is approved in the Clover/Delamar/S. Pahroc/Irish and Southern Benches HVH FMUs. Prescribed fire is approved within all FMUs except the Lincoln County WUI FMU. Approximately 900 acres of non-fire treatments within the Meadow Valley portion of the Clover/Delamar/S. Pahroc/Irish FMU have been completed.

Table 3.6. Fire and treatment limitations listed within the Fire Management Plan

Fire Management Unit Name	Wildland Fire		Wildland Fire for Resource Benefit		Non Fire Treatments		Prescribed Fire Treatments	
	Individual Fire Limitation (Acres)	Decadal Tolerance (acres)	Individual Fire Targets Acreage	Decadal Acres	Annual Acre Target	Decadal Acres	Annual Acre Target	Decadal Acres
Elgin/Blue Nose/Kane Spring PJ	50*	4,800	0	0	1,000	3,000	1,000	3,000
Mojave	25*	500	0	0	1,000	5,000	1,000	5,000
Clover/Delamar/S. Pahroc/Irish	1,000*	50,000	50,000	100,000	1,000	20,000	25,000	100,000

Lincoln County WUI	1*	100	0	0	5,000	50,000	0	0
Southern Benches HVH	50*	5,000	10,000	50,000	100,000	20,000	10,000	50,000

*90 percent of the time. Deviation from the acre target would be allowed.

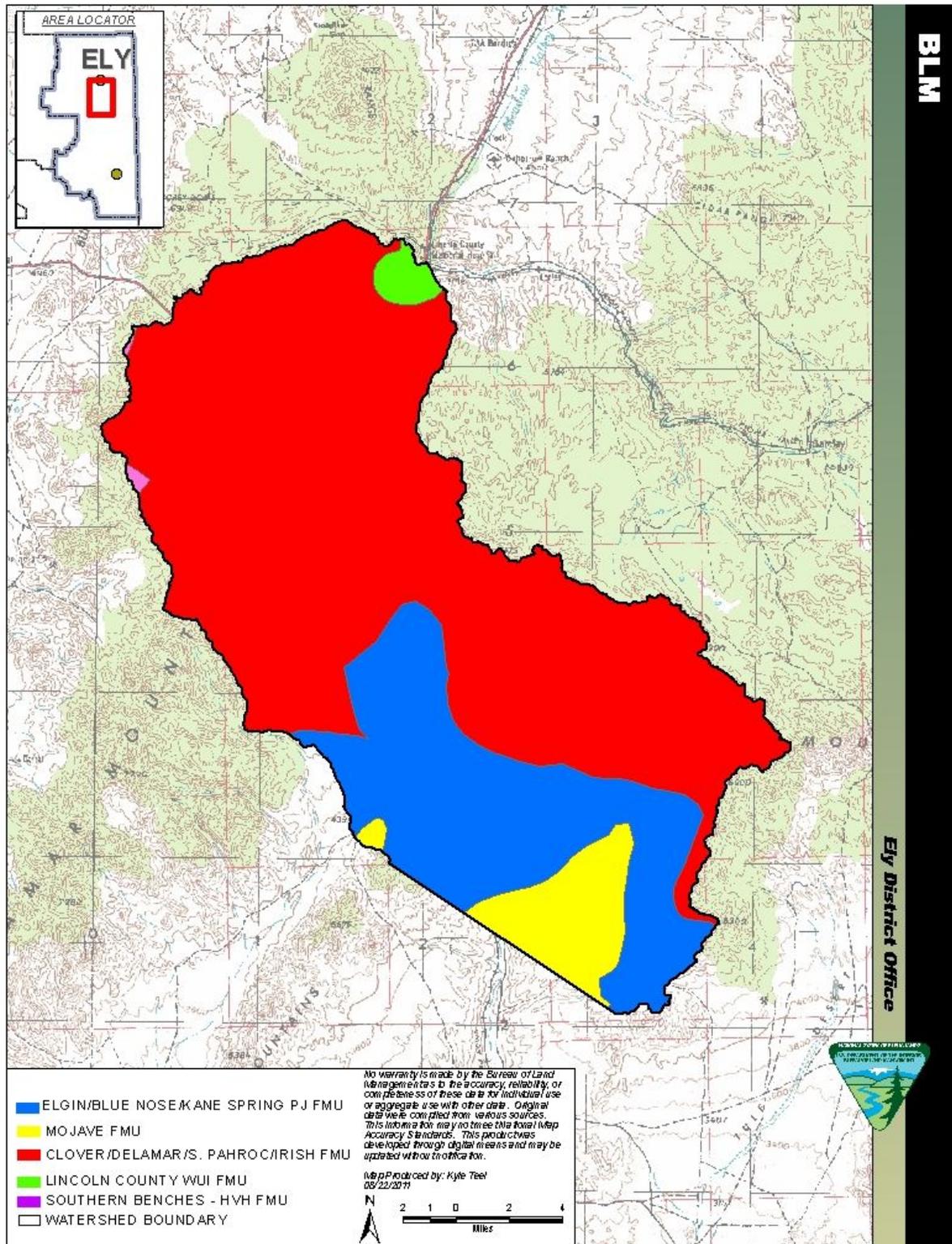


Figure 3.1. Fire Management Units in Meadow Valley Wash North Watershed

3.15. Climate Change

According to the “Global Climate Change Impacts in the United States” report (Karl et al. 2009) produced by the U.S. Global Change Research Program, the Meadow Valley Wash North Watershed is located in the Southwest region of the United States. The report states that recent warming has occurred in this region more rapidly than in other areas of the nation. The warmer temperatures and drier conditions that are being observed in some areas of the Southwest are predicted to potentially alter the vegetative distribution across the region, including possible increases in invasive species. The increased temperatures are also predicted to support increased wildfire activity.

Chapter 4. Environmental Effects:

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4.1. Air Quality

4.1.1. Impacts from the Proposed Action

The prescribed fire component of the Proposed Action would introduce fine and coarse particulates into the atmosphere within the Meadow Valley Wash North Watershed and Lincoln County, Nevada. The BLM would follow the State of Nevada, Division of Environmental Protection, Bureau of Air Quality Planning, Smoke Management Plan requirements for air quality. Any particulates liberated to the air during prescribed fire operations would not affect the air quality of Lincoln County.

4.1.2. Impacts from the No Action Alternative

There would be no impacts on air quality from the No Action Alternative.

4.2. Soil Resources

4.2.1. Impacts from the Proposed Action

Tree Removal or Woodland Restoration: Mechanical treatments would disturb soils by directly compacting and displacing surface and subsurface horizons, which could lead to an increased risk of wind and water erosion. The degree to which soils are compacted is a function of the depth of organic material and vegetation at the surface upon which the vehicles travel and the pressure the equipment exerts on the soil surface. The amount of soil compaction in any treatment unit is expected to be small given the occurrence only appears where the equipment was used, which accounts for an overall small percentage of a given treatment unit.

Moving and stacking of biomass whether for burning or fuelwood disposal could lead to limited and localized areas of soil displacement if mechanized methods are used, especially where the equipment may make frequent turns and where soils may become “dished-out”. The compaction effects would be lessened further as equipment use occurs over tree and shrub material and may not occur at all if material is thick enough to support the equipment and disperse the ground pressure effects. Soil disturbance effects are expected to be short-term and only last until vegetation re-establishes on bare soils.

Fire, whether pile burning post-mastication or hand cutting, could leave areas of soil hydrophobicity if fires burn too severely. Large slash piles may exhibit small areas of hydrophobic soil underneath and adjacent to the piles due to high temperatures generated while burning. Sites exhibiting hydrophobic characteristics are expected to be rare and to account for very minimal land area in treatment units which are burned as a secondary treatment. General conditions needed to form hydrophobic soils are a thick litter layer before the fire, sandy texture soils, and a severe slow-moving fire usually with a crown fire. Conditions in the proposed treatment units are coarse loam soils, no crown fire potential, and lack a thick organic layer component in the soil horizon.

Chemical Treatments: Use of chemicals to affect vegetation would not directly have soil effects. Loss of ground cover vegetation may affect soil retention or soil stability. It is expected that the efficacy of chemical treatments across landscape settings would not lead to increased potential for

soil erosion or soil loss. Chemical treatment of target species would leave sufficient ground cover from non-target vegetation to retain soil resources.

Prescribed Fire: Burning treatment units to reduce fuel loading or biomass and to attain other resource targets would follow guidelines in an established project specific burn plan. The creation of control lines and fire lines would necessitate the exposure of bare mineral soil. Lines could be areas of increased risk to soil erosion if rehabilitation does not occur prior to the onset of the first precipitation event. Loss of target vegetation from prescribed burning is not expected to result in a total elimination of organic texture from hillsides or the ability of the natural system to buffer sediment if erosion does occur. Understory vegetation and heterogeneous topography are expected to naturally buffer and protect hillsides from soil and water movement prior to the establishment of new or release of existing plants.

The risk of creating hydrophobic soil conditions is identical to that described for use of fire as a secondary treatment in Tree Removal or Woodland Restoration.

Seeding: Use of seeding as a treatment would tend to stabilize and protect soils, especially where sown on bare or exposed soil. Establishing target species ground cover is expected to hold soil on slopes and buffer against erosion as well as working as an important part of soil health by organic matter integration.

Fencing: Use of fences would not directly affect soil resources. Fencing areas to exclude entry into sensitive areas could protect soils from trampling until target vegetation is established and capable of handling intended use.

Wildland Fire for Resource Benefit and the Fire Management Plan: Use of Wildland Fire for Resource Benefit would rely on circumstances as defined in the Fire Management Plan before application to the project area. Effects to soil resources are expected to be similar to those described in Tree Removal or Woodland Restoration and Prescribed Fire. Wildland fires can be less predictable and thus have a higher risk associated with the use.

4.2.1.1. Impacts from the No Action Alternative

There would be no short-term effects to soil resources. There could be a long-term effect to soil productivity from the slow change from shrub-grassland dominated systems to shrub-tree dominated systems. In other words, there could be a change in the timing and processes involved in the way nutrients and organic matter enter the soils; finer vegetation potentially changing to coarser vegetation or shorter nutrient cycling times versus potentially longer times.

4.3. Vegetation

4.3.1. Rangeland Vegetation

4.3.1.1. Impacts from the Proposed Action

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

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

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

As indicated by:

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

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

The risk of large scale high intensity and severity wildfires would continue to increase as more areas progress towards FRCC 3. As vegetation progresses towards a homogenous fuel bed of late seral woodlands and rangeland with dense pinyon pine and juniper the risk for large scale wildfires increases. These wildfires would be difficult to control and may cause more damage as a result.

4.3.2. Forest and Woodland Vegetation

4.3.2.1. Impacts from the Proposed Action

The following treatment methods have the potential to impact forests and/or woodlands. Other treatment methods would have no impact because they occur outside forest or woodland areas.

Chaining: Pinyon pine and juniper woodlands are incidental vegetation types for chaining. Chaining removes all pinyon pine and juniper trees over approximately four feet in height within the chaining treatment area, except for islands and stringers left by design. This treatment method is not mimicking a natural disturbance as prescribed fire or individual tree removal methods do, but does effectively revert succession class C, D, E and UN (for uncharacteristically high canopy cover) woodlands back to a succession class A and B woodlands. Currently in the watershed, succession classes A and B are underrepresented by 5% each. Thus some chaining in pinyon pine and juniper woodlands would have an impact consistent with the purpose and need of the proposal. However, if more than 15% of the pinyon pine and juniper woodlands are treated through chaining, herbicide or stand-replacing prescribed or wild fire, then the ecological departure of the pinyon pine and juniper woodland system would increase contrary to the purpose and need for treatment. Regeneration following chaining is typically quite successful, however young pinyon pine and juniper trees would be at increased risk of being trampled, browsed, scrapped or otherwise disturbed due to the increased amount of livestock grazing that would occur after understory vegetative objectives are met.

Individual tree removal: Individual tree removal includes hand thinning, mastication and mechanical tree removal treatment techniques. Target and incidental vegetation for these treatment methods include pinyon pine and juniper woodlands, white fir forests, and aspen forests. The impact to these vegetation types from the proposed action is to reduce tree density in targeted stands. This reduction of tree density would open up stands (converting a succession class UN (for uncharacteristically high canopy cover) stand in many cases to a C, D or E stand depending on the average size of the remaining trees). This impact would be consistent with the goals of the project in all forest and woodland vegetation types because all vegetation types are either becoming encroached by an unwanted species (pinyon pine and juniper in ponderosa) or are over-representing in the later successional classes, or both.

Chemical Treatments: Herbicide (Tebuthiuron) has varying impacts on woodland vegetation. If applied at a high enough rate (more than 1.5 oz. of active ingredient per acre), nearly all trees would die. At lesser application rates, pinyon pine is more vulnerable than juniper and juniper will often survive. If the rate is high enough to kill all trees in the application area, the effect would be to return the area to a succession class A if in large enough blocks. If the application is mosaic in nature, the result could be to open up the stand, creating class C or D structures. Both of these results are consistent with the purpose and need, so long as more acreage isn't converted to one succession class than is stated in the reference condition percentage (from the Ely RMP), which would increase rather than decrease ecological departure.

Prescribed Fire and Fire for Resource Benefit: Prescribed fire reduces densities of trees generally in a mosaic pattern, and increases grass, forb and shrub regeneration in some ecosystems. Because every forest and woodland community within the Meadow Valley Wash North Watershed is over-dense and overrepresenting in the late successional age classes, the reduction of tree density and increased regeneration would return the stands to a condition closer to the reference condition and therefore reduce ecological departure. Prescribed fire also burns very heterogeneously across the burn unit, allowing for a more natural distribution of age classes and increased patchiness in the watershed increasing ecological resistance and resilience on a landscape level. This impact is consistent with the purpose and need for the proposal.

4.3.2.2. Impacts from the No Action Alternative

The No Action Alternative would not impact forests and woodlands in a manner consistent with the purpose and need. Rather stand densities would continue to increase and stands would continue to become more departed from the reference condition (higher FRCC). Forests and woodlands would be at increased risk to high severity, high intensity wildfire that is uncharacteristic and would revert large areas back to successional class A or potentially to class U, thus increasing the ecological departure in most vegetation types even more.

4.3.3. Non-native Invasive and Noxious Species

4.3.3.1. Impacts from the Proposed Action

Direct impacts could include an initial increase of cheatgrass and other weed species in treatment areas, especially where soils are disturbed or following prescribed or natural fire. The design features include chemical treatments and targeted grazing to reduce cheatgrass monocultures, allowing desired plant species to re-establish. There is also the potential for noxious weeds to move into the disturbed areas following treatment. This impact is reduced by using weed free seed, cleaning equipment, and treating current weed infestations along access routes.

Indirect impacts could include an increase in fire frequency if large monocultures of cheatgrass establish, preventing desired vegetation from recovering following treatment. Managing cheatgrass following treatments will reduce this risk. By managing weeds in these treatment units, native vegetation will re-establish and be more resilient to future weed infestations.

4.3.3.2. Impacts from the No Action Alternative

Direct impacts to weeds would not occur. Weed populations would remain stable as long as no other large disturbances, such as fire, occurred within the treatment units.

Indirect impacts would include a less resilient native plant community that could be prone to weeds following a disturbance such as fire.

4.4. Fish and Wildlife Resources

4.4.1. Fish and Wildlife

4.4.1.1. Impacts from the Proposed Action

Under the Proposed Action, impacts to big game and other wildlife would be minimal with implementation of timing stipulations and design features. Individual animals may be disturbed and displaced from the area temporarily during implementation; however there is adjacent suitable habitat to provide wildlife needs. A mosaic pattern is expected to provide wildlife populations with greater vegetative diversity and diverse age-class distribution. Woodland sites would continue to provide thermal protection and escape cover for many species.

4.4.1.2. Impacts from the No Action Alternative

Under the No Action Alternative, resource conditions are expected to stay the same with continual pinyon pine and juniper encroachment on sagebrush communities and decline in the production, vigor, and diversity of grass, forb, and shrub species. Forage values would continue to decline in terms of both nutrition and palatability. The increase of pinyon pine, juniper, and decadent sagebrush stands could result in large, uncontrolled wildfires that have the potential to eliminate large tracts of existing habitat for big game and other wildlife.

4.4.2. Migratory Birds and Raptors

4.4.2.1. Impacts from the Proposed Action

Under the Proposed Action, impacts to migratory birds and raptors would be minimal due to timing restrictions and design features. Treatment implementation would occur outside the breeding bird nesting season or the area would be surveyed for nesting birds prior to treatment. Due to the difficulty of identifying all nests within a project area, some nests or eggs may be destroyed during implementation; however due to adjacent and available suitable habitat within the watershed, re-nesting is likely to occur and local migratory bird populations would not be impacted by the Proposed Action. All active raptor nests would be avoided during implementation of the Proposed Action.

Changes in habitat condition and abundance as a result of the proposed action may result in increases in the populations of some bird species at the expense of other bird species. Thus, there is no change that would benefit or adversely affect all bird species. Additionally, treatment design is to incorporate varying succession stages of pinyon pine and juniper woodlands throughout the watershed and would benefit pinyon-juniper obligate bird species. Additionally, improving sagebrush communities would increase the prey base (small mammals) for raptors and increase insect populations.

4.4.2.1.1. Impacts from the No Action Alternative

Under the No Action Alternative, resource conditions are expected to stay the same with continual pinyon pine and juniper encroachment on sagebrush communities and decline in the projection, vigor, and diversity of grass, forb and shrub species. The increase of pinyon pine, juniper, and decadent sagebrush stands could result in large, uncontrolled wildfires that have the potential to eliminate large tracts of existing habitat for migratory birds and raptors.

4.4.3. Special Status Plant Species

4.4.3.1. Impacts from the Proposed Action

Needle Mountains Milkvetch (*Astragalus eurylobus*)

As all of the proposed treatment areas are outside of the drainage; there should be no effect on this species, on an individual or population scale.

Long-calyx Eggvetch (*Astragalus oophorus* var. *lonchocalyx*)

This plant does have the potential to exist within our treatment areas, though there is only one documented case of existence. If located in a treatment area, it could easily be avoided, thus there would be no effect to this species, on an individual or population basis

Nevada Willowherb (*Epilobium nevadense*)

As the planned treatments for steep slopes or talus piles would primarily utilize hand treatments these plants could be easily avoided; there should be no effect to this species, on an individual or population scale.

In the case of all three plants, if they occur, they would occur in small isolated areas and are situated such that they only occur in areas that would unlikely be selected for treatments; there should be no effect to these species, either on individual plants or populations.

4.5. Wetlands and Riparian Areas

4.5.1. Impacts from Proposed Action

Riparian areas would be buffered during ground disturbing treatments, excluding prescribed fire. Chemical treatment buffers would range from 25 feet near drainages if applied by hand, 100 feet if applied from ground-based motorized equipment (e.g. ATV), to 300 feet if aerially applied. Site specific determination of appropriate buffers for drainage features, riparian systems, and water collection points would occur prior to treatment. Mechanical treatments and hand felling operations could occur adjacent to riparian areas.

Chemical and mechanical treatments near riparian zones are not expected to affect the function or resilience of the systems. Buffers utilized to protect drainages that may possess or flow towards riparian systems are expected to capture and hold any materials used or liberated during mechanical or chemical treatments and preclude their introduction into the riparian systems. Any materials that do enter drainages or riparian systems would have negligible and lead to immeasurable effects on riparian resources.

Removal of conifer trees in or near riparian systems would retain groundwater for riparian species use and possibly help to retain groundwater levels closer to the ground surface. Reducing upland species competition in and around riparian zones would reduce competition for limited water resources.

4.5.2. Impacts from the No Action Alternative

Riparian systems would continue to be surrounded and encroached by upland shrub and tree species in competition for limited water resources in the short-term. Riparian habitats could become rarer in the long-term.

4.6. Floodplains

4.6.1. Impacts from the Proposed Action

Floodplains would not be affected by the proposed project. The Proposed Action would not alter natural stream flow patterns or alter the natural variability of snowfall distribution, which could lead to changing the timing and distribution of stream flow. No change to the amount, duration, intensity, or frequency of stream flow events emanating from drainage networks in the analysis area would occur as a result of the Proposed Action.

4.6.2. Impacts from the No Action Alternative

There would be no impacts to floodplains resulting from the No Action Alternative.

4.7. Prime and Unique Farmlands

4.7.1. Impacts from the Proposed Action

The Proposed Action would use mechanical and chemical treatments, some of which would use equipment traversing treatment units and disturbing soils. The mastication and mechanical tree removal, mowing, and some actions associated with prescribed fire, such as fireline construction, could displace and disturb soils. The only two components that the Proposed Action and any treatment chosen to carry out the action could affect would be: (1) altering soil structure sufficiently enough to impede water and air movement into and through the soil (compaction); or (2) disturbing the landscape sufficiently to alter the soil's susceptibility to water and/or wind erosional forces that would in turn affect the other components that are important to prime farmlands. Similar to the analysis of Soil Resources above, soil compaction would only occur where direct contact was made between the equipment and the surface, which would account for only a small percentage of the total area of the treatment units and the watershed as a whole.

4.7.2. Impacts from the No Action Alternative

There would be no impacts resulting from the No Action Alternative.

4.8. Livestock Grazing

4.8.1. Impacts from the Proposed Action

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 should improve, which would provide a more palatable and nutritional source of forage for livestock and wildlife and also protect the soil resource and other associated watershed values. The rejuvenation of decadent, even-aged stands of sagebrush and the thinning of established pinyon and juniper woodlands would assist in improving the ecological condition of sites within the proposed project area. No reductions

or increases in permitted livestock use would occur as a result of increased forage availability from the proposed project.

Implementation of the Proposed Action would assist those portions of allotments within the project area in conforming to the Mojave-Southern Great Basin Standards and Guidelines for grazing administration (Title 43 CFR 4180) by increasing the quantity and quality of herbaceous vegetation and assisting those ecological sites in progressing toward achieving the reference condition community.

Implementation of the Proposed Action should not result in any short-term economic effect on the permittees due to a mandatory rest period of the treatment areas. The rest period is necessary in order to ensure the establishment, protection, and long-term viability of the vegetation enhancement project. The rest period would be for a minimum of two years or until vegetation management objectives have been met as identified in Chapter 2. The rest period may be extended pending the rate of progress towards vegetative establishment. The overall impacts to the grazing permittees on the allotments would be minimal, as the permittees would herd livestock and avoid the treatment areas while they are being rested or deferred.

Seed germination, drought-related influences, wildfire, or other unforeseen natural events could potentially affect the rate of vegetative establishment. The type of treatment implemented may also affect the rate of recovery (e.g. mechanical, chemical, etc.). Seed establishment is expected to occur with the use of site-adapted seed sources and under normal precipitation levels. Resource management objectives would be met at a more rapid rate on sites with adequate existing understory vegetation in comparison to those sites with a depleted understory component. In the long-term, the Proposed Action should benefit all users by providing more palatable, nutritious forage for livestock and wildlife due to the establishment of seeded perennial vegetation and the recovery and improved vigor of existing vegetation. Long-term viability of the vegetative treatments would be expected as long as utilization levels do not exceed 50%, and the season of use corresponds with plant phenology. Any adjustments in stocking levels, the incorporation of management guidelines such as 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 permits would allow for proper vegetation management. Impacts to the permittees' grazing schedules would be minimal under the Proposed Action. Very small portions of each allotment are identified for treatment (less than 10%).

4.8.2. Impacts from the No Action Alternative

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

thereby affecting the recruitment and establishment of new grasses, forbs and shrubs. Available forage would be reduced over a period of time.

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

4.9. Recreation

4.9.1. Impacts from the Proposed Action

Short term impacts could include visual and noise disturbance near dispersed recreation sites for a period of less than one month. In the long term recreationists may see healthier rangelands possibly leading to increased recreational opportunities.

4.9.2. Impacts from the No Action Alternative

There would be no impacts resulting from the No Action Alternative.

4.10. Wilderness

4.10.1. Impacts from the Proposed Action

As none of the proposed treatments occur within wilderness areas there would be no impact from the selection of the Proposed Action.

4.10.2. Impacts from the No Action Alternative

Wilderness values would remain the same without vegetation manipulation.

4.11. Visual Resources

4.11.1. Impacts from the Proposed Action

Predominant natural features of the characteristic landscape are mosaic burned and disturbed patches within the landscape resulting from a historic fire regime of generally 35 to 100 years. The proposed action would repeat the basic elements of form, line, color and texture and therefore conform to the appropriate VRM class objectives and the Ely RMP.

4.11.2. Impacts from the No Action Alternative

Visual resources would remain the same without vegetation manipulation.

4.12. Fire and Fuels Management

4.12.1. Fuels

4.12.1.1. Impacts from the Proposed Action

Impacts of the proposed action are analyzed based on the conversion of vegetation targets to the seral class objectives listed within the Proposed Action and compared to the desired future condition (DFC). This analysis is based on the target vegetation only and does not include the treatment of the incidental vegetation types. As the incidental vegetation types are not targeted and would not constitute a substantial portion of the treatment area, it is not possible to quantify the impacts to these vegetation types. However, the treatment of these incidental vegetation types with the methods listed should bring them closer to the DFC.

BPS model data sets and model descriptions have been used to conduct the analysis and determine departure both for FRCC values and departure from the DFC. Fire Regime Condition Class analysis is based upon the reference condition listed in the BPS model descriptions. The reference conditions described in a BPS model represents the combination of the desired composition of vegetation and the natural disturbance regime believed to have been present prior to European influence. The reference condition is used to represent the span of seral classes that should be present.

The analysis of the impacts of the proposed action is based on the assumption that the objectives for the treatment areas would be met through the implementation of the primary or secondary actions listed. The analysis is also based on the assumption that the treatments would be completed over a ten year period. The information utilized for this analysis is presented in the tables and provided in Appendix C. Based on the results from past treatments it is reasonable to expect that the objectives would be met.

Within the proposed action there are 12,029 acres of Pinyon-Juniper Woodlands (BPS Model Great Basin Pinyon Juniper Woodland) was targeted for treatment. The combined impact of the proposed action in relation to the DFC as well as current conditions is presented within Table 4.1, “Proposed Action impacts to Pinyon-Juniper Woodlands in relation to the desired future condition.” (p. 75) below. Under the proposed action there would be a shift in the composition towards seral class A. No initial increases in classes B, C and D is expected as the vegetation would have to progress from class A to these other classes over time.

Table 4.1. Proposed Action impacts to Pinyon-Juniper Woodlands in relation to the desired future condition.

BPS MODEL & Class		Desired Future Condition (DFC)	Current Condition Percentages	Current Condition Difference from DFC	Proposed Action Potential Resulting Percentages	Proposed Action Difference from DFC
GREAT BASIN PINYON JUNIPER WOODLAND	A	5%	0%	-5%	1%	-4%
	B	5%	0%	-5%	1%	-4%
	C	20%	18%	-2%	20%	2%
	D	65%	32%	-33%	38%	-27%
	E	5%	25%	20%	21%	16%
	U	0%	25%	25%	20%	20%
Average Departure from DFC				15%		12%

The FRCC calculations for the Pinyon-Juniper Woodlands show a departure of 53% pretreatment. The post treatment departure shows a decrease to 35%. This change in departure is a result of seral class D, E, and U acres converting to earlier seral classes of A, B and C. It is likely that when the U class is inventoried those acres falling into the native U class of tree cover in excess of 60% would be treated with the E class vegetation increasing the acres treated and decreasing the departure from the DFC and the BPS reference condition.

Within the Proposed Action there are 176 acres of ponderosa pine (BPS Model Southern Rocky Mountain Ponderosa Pine Woodland) targeted for treatment. The combined impact of the Proposed Action in relation to the DFC, as well as current conditions is presented within Table 4.2, "Proposed Action impacts to Southern Rocky Mountain Ponderosa Pine Woodland in relation to the desired future condition." (p. 76) below. Under the proposed action there would be a negligible impact to the seral percentages in reference to the watershed as a whole. The treatment of the vegetation on a project specific scale would shift the classes towards classes A, B, and C, however the acres targeted for treatment compared to the acres of pinyon-juniper woodlands within the watershed does not make a measurable difference.

Table 4.2. Proposed Action impacts to Southern Rocky Mountain Ponderosa Pine Woodland in relation to the desired future condition.

BPS MODEL & CLASS		Desired Future Condition (DFC)	Current Condition Percentages	Current Condition Difference from DFC	Proposed Action Resulting Percentages	Proposed Action Difference from DFC
Southern Rocky Mountain Ponderosa Pine Woodland	A	10%	11%	1%	11%	1%
	B	5%	39%	34%	33%	28%
	C	20%	32%	12%	30%	-2%
	D	60%	0%	-60%	10%	-50%
	E	5%	0%	-5%	1%	-4%
	U	0%	18%	18%	16%	16%
Average Departure from DFC				22%		17%

The FRCC calculations for the Ponderosa Pine Woodlands show a departure of 91% pretreatment. The post treatment departure shows a decrease to 57%. This change in departure is a result of seral class D and E acres converting to earlier seral classes of A, B and C. It is likely that when the U class is inventoried those acres falling into the native U class of tree cover in excess of 60% would be treated with the E class vegetation increasing the acres treated and decreasing the departure from the DFC and the BPS reference condition.

4.12.1.2. Impacts from the No Action Alternative

Under the No Action Alternative, fuels management and vegetation treatments would continue as currently directed within the RMP and FMP. Vegetation treatments within the area would continue to be planned and prioritized as they are currently. Treatments identified and completed within the last ten years are used to calculate what would likely be completed over the next ten years. Over the last ten years there have been 3,107 acres treated within the planning area totaling 1.6% of the overall watershed. Of these treatments 95% of them have occurred in sagebrush habitats with seral classes C, D, E and U. If there were an additional 1.6% of acres treated within the watershed, with the same distribution, departure within the watershed from DFC or BPS reference condition would not improve measurably. Overall vegetation communities would continue to progress towards later seral classes.

4.12.2. Fire Management

4.12.2.1. Impacts from the Proposed Action

Fire management within the Meadow Valley Wash North Watershed would continue as prescribed within the 2004 FMP with the amendments listed under the Proposed Action. Following the achievement of the objectives listed within the Proposed Action, there would be an increase in the amount of natural fuel breaks and a reduction in the continuity of the fuels. This would lead to a reduction in the risk for large wildfires outside of the natural disturbance regime. As vegetation within the watershed moves closer to FRCC 1, disturbances would more likely occur more similar to the natural disturbance regime and thus further assist the watershed in reducing departure from the DFC and reference conditions.

4.12.2.1.1. Impacts from the No Action Alternative

Under the No Action Alternative fire management would continue as currently directed within the RMP and FMP. As vegetation progresses towards the later seral classes, fire would primarily play a replacement role where fires are potentially larger and more severe than the mixed severity fires within the reference condition for most BPS models. This would increase the risk of losing key ecosystem components and for conversion of communities to nonnative annual grasses. Allowing wildland fire for resource benefit would be less probable as the risk of losing key ecosystem components and threatening property increases. The probability of introducing fire to the landscape where it can play a natural role in the environment would be reduced.

4.13. Climate Change

4.13.1. Impacts from Alternative A: Proposed Action

The Proposed Action incorporates several vegetation treatments targeted at reducing dense fuel loads primarily through the removal of pinyon pine and juniper trees from areas traditionally occupied predominantly by sagebrush. This may serve to counteract some of the potential increases in wildfire risk if, in fact, overall warming and drying occurs within the project area as predicted. The removal of the trees in large areas would eliminate some of the existing shading, but would allow additional moisture and space for growth for the remaining sagebrush and other smaller vegetation. The carbon sink properties lost with any tree removal may at least be partially offset by the increased vigor and abundance of the sagebrush and smaller vegetative species. Quantification of any of these impacts relative to the overall warming trend in the region is not possible due to the lack of site-specific research and general controversy surrounding the topic of climate change.

4.13.2. Impacts from No Action Alternative:

The No Action Alternative does not include any vegetation treatments and would not potentially counteract any of the trends predicted to support increased risk of wildfires. However, quantification of any of these impacts relative to the overall warming trend in the region is not possible due to the lack of site-specific research and general controversy surrounding the topic of climate change.

4.14. Cumulative Effects

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

The general area reviewed as the Cumulative Effects Study Area (CESA) includes: the entire Meadow Valley Wash Watershed and areas within the surrounding watersheds, including Clover Creek South, Delamar Valley, Kane Spring Wash, Tule Desert, Toquop Wash and Panaca Valley Watersheds. In addition to the site specific analysis included below, a comprehensive cumulative effects analysis can be found in Section 4.28 of the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007).

4.14.1. Past, Present, and Reasonably Foreseeable Future Actions

4.14.1.1. Past Actions

Past actions in the area include grazing, mining, recreation, hunting, fuels treatments (generally chainings and mowings), range improvement projects, development subject to rights-of-way and wildfire.

4.14.1.2. Present Actions

Present actions include wildfire management, mining, recreation, grazing and hunting.

4.14.1.3. Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions include hunting, recreation, grazing, travel management, and wildfire management. Watershed Restoration Plans are currently being developed for the areas surrounding the Meadow Valley Wash North Watershed, surrounding watersheds, including Clover Creek South, Delamar Valley, Kane Spring Wash, Tule Desert, Toquop Wash and Panaca Valley Watersheds. Each of the efforts is at various stages in the process, but all would incorporate vegetation and other treatments targeted to improve the health of the landscape.

4.14.2. Cumulative Effects Summary

4.14.2.1. Soil Resources

Past actions, such as from wildfires, have increased soil erosion on areas outside the proposed project areas. Past actions combined with the lack of treatments within the proposed project area has increased soil erosion vulnerability, especially if large unplanned disturbances such as wildfires, wind events or precipitation events were to occur. The implementation of present and future fuels treatments would increase soil stability in the area as vegetative diversity and ground cover is increased. Through planned treatments, natural disturbances would be smaller in size

and manageable and would reduce soil erosion levels over the long term. Cumulative impacts from implementing the Proposed Action 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.

4.14.2.2. Rangeland Vegetation

Under many situations, uncontrolled wildfires affect continuous expanses of vegetation and habitat, leaving minimal mosaic to the burn pattern. Rehabilitation efforts are generally expensive and difficult due to the lack of species diversity in many plant communities that have burned. Long term changes in ecological conditions affect vegetative diversity and habitat quality. Past actions to adjust livestock and wildlife use on vegetation combined with present and future actions to implement various fuels and vegetation treatments would allow for an improvement in vegetative recruitment, establishment, production, vigor and diversity and help facilitate the establishment of the natural (historic) fire regime and improve habitat conditions for many species of wildlife. Wildfires and past range improvement projects, combined with the Meadow Valley Wash North Watershed Restoration Project will improve the fire regime condition class of the area and maintain or improve vegetative diversity and abundance.

4.14.2.3. Forest and Woodland Vegetation

Wildfire and other natural disturbances would burn in a natural and often a heterogeneous mosaic pattern following treatments across watersheds increasing the diversity and heterogeneity of the vegetative successional classes and returning the watersheds to a more natural state with less ecological departure. Harvesting of forest and woodland products in the CESA will continue to occur and further reduce the densities of woodland vegetation. Combined, past, present, and reasonably foreseeable future actions will decrease the ecological departure of a large landscape area and reduce the FRCC of that area in woodland and forest vegetation.

4.14.2.4. Vegetative Products

In general, the short term effects in the CESA are; the availability of fuelwood and native seed would increase and the availability of posts, poles, Christmas trees and pine nuts would decrease. The long term effects are; the availability of fuelwood and pine nuts would decrease and the availability of posts, poles, Christmas trees and native seed would increase. Other past, present and reasonably foreseeable future projects would alter the potential availability of vegetative products at such small amounts that they round to zero and become negligible across the larger landscape.

4.14.2.5. Nonnative Invasive and Noxious Species

The primary cumulative impact to the watershed would be if cheatgrass increased the fire frequency regime and an increasing area was converted to a cheatgrass monoculture. The design features of the Proposed Action should prevent increases in fine fuel loads from cheatgrass and prevent cheatgrass monocultures from establishing.

4.14.2.6. Fish and Wildlife Resources, including Migratory Birds and Special Status Species

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

4.14.2.7. Livestock Grazing

Past, present, and reasonably foreseeable future actions combined with treatments included in the Proposed Action would 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, improve water quality by reducing erosion potential; and promote herd health and economic stability by increasing the quantity and quality of forage for livestock use. Over a period of time, forage conditions would improve, which would benefit long term livestock grazing management.

4.14.2.8. Fuels and Fire Management

The cumulative effects study area for fuels and fire management is the Meadow Valley Wash North Watershed. Past and present actions occurring within the watershed have been incorporated into the analysis for the Proposed Action and the No Action Alternative. In general, past projects have been relatively small in size and, while beneficial in accomplishing the objective for the specific treatment (fuel breaks for Wildland Urban Interface), they are not substantial enough to contribute to a reduction in departure within the overall watershed. Future actions within the watershed include the continuation of land management as prescribed under the current RMP. Cumulative impacts resulting from the combination of the reasonably foreseeable future actions with the past and present actions within the watershed are minimal and not measurable when added to the impacts of the Proposed Action or No Action Alternative.

Fire management would continue to occur as dictated by the current Fire Management Plan (USDI–BLM, 2004) and RMP. The combination of past, present and reasonably foreseeable future actions with the impacts of the Proposed Action or No Action Alternative are minimal and not measurable.

Chapter 5. Tribes, Individuals, Organizations, or Agencies Consulted:

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- Eastern Nevada Landscape Coalition
- Ely Shoshone Tribe
- Nevada Department of Wildlife
- U.S. Fish and Wildlife Service

5.1. Tribal Coordination

On October 19, 2011 the Meadow Valley Wash North Watershed Restoration proposal was presented via letter to the tribes that have expressed interest in the area as a means of Tribal coordination. The tribes were specifically asked to help develop alternatives for analysis in this NEPA action. Additionally, the Ely District Office Tribal Coordinator, Elvis Wall, contacted the tribes that have previously expressed interest in activities in the area and informed them of the forthcoming letter and of the BLM's desire that the tribes participate. No concerns or alternatives were identified as a result of this letter.

5.1.1. Request for input from Interested Publics

On November 30th, 2010, a letter was mailed to those parties that had previously expressed interest in the watershed assessment process. In this letter, the results of the evaluation and determination were summarized and input on the preparation of this document and any alternatives were solicited. Comments were received from two entities; however neither of these provided any input on an alternative actions.

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Chapter 6. List of Preparers

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Table 6.1. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Kyle Hansen	Watershed Coordinator	General Information/Project Lead
Travis Young	Planning and Environmental Coordinator	NEPA Compliance, Environmental Justice
Kyle Teel	Fire Ecologist	Fuels and Fire Management
Zach Peterson	Forester	Forest and Woodland Vegetation, Vegetative Products
Andy Daniels	Wildlife Biologist	Wildlife, Migratory Birds, Threatened and Endangered, Special Status Species
Mark D'Aversa	Hydrologist	Air Quality, Soil, Water Resources, Water Quality, Floodplains, Wetlands/Riparian Areas, Farmlands
Nicholas Pay	Archeologist	Cultural/Paleontological/Historical Res.
Melanie Peterson	Environmental Protection Specialist	Hazardous Materials, Human Health and Safety
Cameron Boyce	Natural Resource Specialist	Non-native Invasive and Noxious Species
Dave Jacobson	Planning and Environmental Coordinator (Wilderness)	Wilderness, Special Designations, Visual Resources, Land with Wilderness Characteristics
Elvis Wall	Native American Coordinator	Native American Coordination
Brenda Linnell	Realty Specialist	Lands and Realty
Domenic Bolognani	Range Management Specialist	Livestock Grazing, Rangeland Vegetation
John Miller	Park Ranger (Wilderness)	Recreation
Alan Kunze	Geologist	Mineral Resources

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Chapter 7. References

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Appendix A. Risk Assessment for Noxious & Invasive Weeds

Meadow Valley Wash North Watershed Restoration Project
 Lincoln County, Nevada

On August 17, 2011 a Noxious & Invasive Weed Risk Assessment was completed for The Meadow Valley Wash Restoration Environmental Assessment to conduct ecological restoration in Lincoln County, NV. The Proposed Action is to treat identified areas of vegetation that are currently in an FRCC condition class other than FRCC 1. Treatment of these areas is designed to take these areas from their current state to a vegetative condition that is more similar to what should be present based upon biophysical setting. The primary goal of the project is to reduce overstory species and increase understory plant communities. The project location is the northern half of the Meadow Valley Wash North watershed.

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

Centaurea stoebe	Spotted knapweed
Cirsium vulgare	Bull thistle
Tamarix spp.	Salt cedar

There is also probably cheatgrass, Russian thistle, tumble mustard, halogeton, and bur buttercup scattered along roads in the area and within the treatment area. The project area was last inventoried for noxious weeds in 2008.

A list of species documented in the District follows:

Bromus tectorum	Cheatgrass
Ceratocephala testiculata	Bur buttercup
Halogeton glomeratus	Halogeton
Salsola kali	Russian thistle
Sysimbrium altissimum	Tumble mustard

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

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

For this project, the factor rates as Moderate (7) at the present time. This rating is based on the presence of the listed weeds within and around the project area. The project will free up

solar, water, and soil resource from the removal of pinion/juniper trees in the area. This could allow the release of any weed species stored within the seed bank. Also, weed species could be transported to the site by equipment and personnel working on the project. It is expected to be frequently monitored after restoration treatments are completed. This will give early detection of any noxious weeds that may establish after treatment.

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

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

This project rates as moderate (6) at the present time. The consequences of noxious/invasive weed establishment could be the reduced success of seeded species or native species already present in the seed bank, decreased fire return interval, and reduction in grazing and browse value over the short term. However, it is likely that after 3-5 years seeded and native species will become established and increase in density reducing the frequency and density of weed species.

Table A.3. The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

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

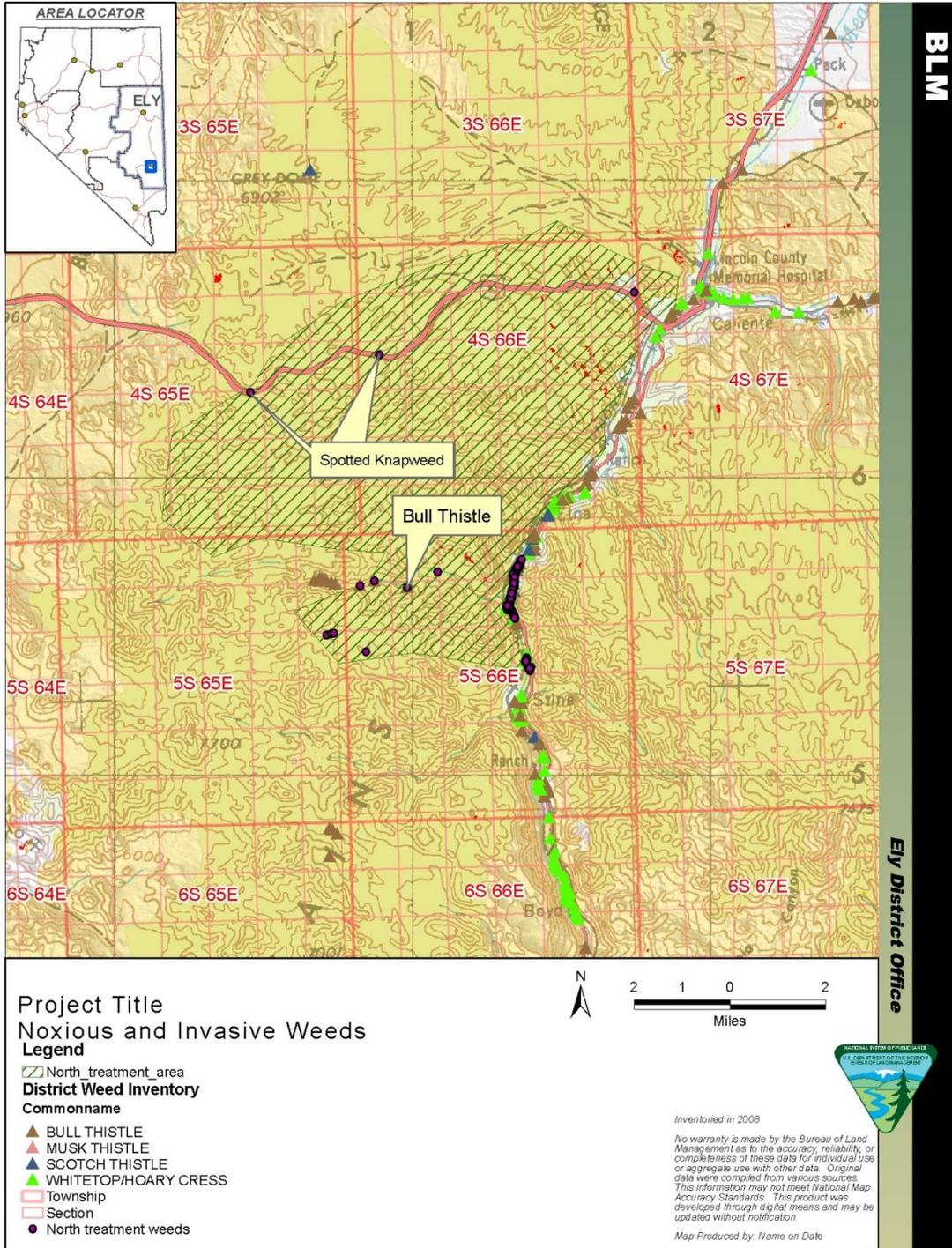
For this project, the Risk Rating is Moderate (42). This indicates that the project can proceed as planned as long as the following measures are followed:

- Continue to use integrated weed management to treat weed infestations and use principles of integrated pest management to meet management objectives and to reestablish resistant and resilient native vegetation communities
- Develop weed management plans that address weed vectors, minimize the movement of weeds within public lands, consider disturbance regimes, and address existing weed infestations.
- When manual weed control is conducted, remove the cut weeds and weed parts and dispose of them in a manner designed to kill seeds and weed parts
- All straw, hay, straw/hay, or other organic products used for reclamation or stabilization activities, must be certified that all materials are free of plant species listed on the Nevada noxious weed list or specifically identified by the Ely District Office.

- Prior to entry of vehicles and equipment to a planned disturbance area, a weed scientist or qualified biologist will identify and flag areas of concern. The flagging will alert personnel or participants to avoid areas of concern.
- Determine seed mixes on a site specific basis dependant on the probability of successful establishment. Use native and adapted species that compete with annual invasive species or meet other objectives.
- When managing in areas of special status species, carefully consider the impacts of the treatment on such species. Wherever possible, hand spraying of herbicides is preferred over other methods.
- Conduct mixing of herbicides and rinsing of herbicide containers and spray equipment only in areas that are a safe distance from environmentally sensitive areas and points of entry to bodies of water (storm drains, irrigation ditches, streams, lakes, or wells).
- Re-spread weed-free vegetation from the project area to provide protection, nutrient recycling, and seed source.
- Prior to entering public lands, the contractor, operator, or permit holder will provide information and training regarding noxious weed management and identification to all personnel who will be affiliated with the implementation of the project. The importance of preventing the spread of weeds to un-infested areas and importance of controlling existing populations of weeds will be explained.
- All applications of approved pesticides will be conducted only by certified pesticide applicators or by personnel under the direct supervision of a certified applicator.
- Prior to commencing any chemical control program, and on a daily basis for the duration of the project, the certified applicator will provide a suitable safety briefing to all personnel working with or in the vicinity of the herbicide application. This briefing will include safe handling, spill prevention, cleanup, and first aid procedures.
- Store all pesticides in areas where access can be controlled to prevent unauthorized/untrained people from gaining access to chemicals.
- Do not apply pesticides within 440 yards (0.25 mile) of residences without prior notification of the resident.
- Areas treated with pesticides will be adequately posted to notify the public of the activity and of safe re-entry dates, if a public notification requirement is specified on the label of the product applied. The public notice signs will be at least 8 ½" x 11" in size and will contain the date of application and the date of safe re-entry.
- Whenever possible, hand spraying of herbicides is preferred over other methods at heavily used recreation sites (i.e. campgrounds, trailheads, etc.).
- When manual weed control is conducted, remove the cut weeds and weed parts and dispose of them in a manner designed to kill seeds and weed parts.

Reviewed by: /s/Cameron Boyce
Cameron Boyce
Caliente Field Office Noxious and Invasive
Weed Coordinator

8/17/2011
Date



Map A.1. Locations of Noxious and Invasive Weeds in the Meadow Valley Wash North Watershed

Appendix B. Special Status and Migratory Bird Tables

Table B.1. BLM Special Status species documented to occur within the Meadow Valley Wash North Watershed.

	Common name	Scientific name
Mammal	Scientific Name	Status
Desert Bighorn Sheep	(<i>Ovis canadensis nelsoni</i>)	BLM Sensitive
Reptile		
Banded Gila Monster	(<i>Heloderma suspectum cinctum</i>)	BLM Sensitive
Aquatic		
Meadow Valley Wash Desert Sucker	(<i>Catostomus clarkii</i> ssp.)	BLM Sensitive
Meadow Valley Wash Speckled Dace	(<i>Rhinichthys osculus</i> ssp.)	BLM Sensitive
Arizona Toad or Southwestern Toad	(<i>Bufo microscaphus</i>)	BLM Sensitive
Plants		
Needle Mountains Milkvetch	(<i>Astragalus eurylobus</i>)	BLM Sensitive
Long-calyx eggvetch	(<i>Astragalus oophorus</i> var. <i>lonchocalyx</i>)	BLM Sensitive
Nevada Willowherb	(<i>Epilobium nevadense</i>)	BLM Sensitive
Birds		
Golden Eagle	(<i>Aquila Chrysaetos</i>)	BLM Sensitive
Le Conte's Thrasher	(<i>Toxostoma lecontei</i>)	BLM Sensitive
Loggerhead Shrike	(<i>Lanius ludovicianus</i>)	BLM Sensitive
Phainopepla	(<i>Phainopepla nitens</i>)	BLM Sensitive
Prairie Falcon	(<i>Falco mexicanus</i>)	BLM Sensitive
Short-eared Owl	(<i>Asio flammeus</i>)	BLM Sensitive
Southwestern Willow Flycatcher	(<i>Empidonax traillii extimus</i>)	F. Endangered
Yellow-billed Cuckoo	(<i>Coccyzus americanus occidentalis</i>)	F. Candidate
Yellow-breasted Chat	(<i>Icteria virens</i>)	BLM Sensitive

Table B.2. BLM Special Status bat species documented to occur in the Meadow Valley Wash North watershed.

Common name	Scientific name
California Myotis	(<i>Myotis californicus</i>)
Pallid Bat	(<i>Antrozous pallidus</i>)
Western Pipistrelle	(<i>Pipistrellus hesperus</i>)
Big Brown Bat	(<i>Eptesicus fuscus</i>)
Small-footed Myotis	(<i>Myotis ciliolabrum</i>)
Fringed Myotis	(<i>Myotis thysanodes</i>)
Big Free-tailed Bat	(<i>Nyctinomops macrotis</i>)
Brazilian Free-tailed Bat	(<i>Tadarida brasiliensis</i>)
Western Red Bat	(<i>Lasiurus blossevilli</i>)
Yuma Myotis	(<i>Myotis yumanensis</i>)
Long-legged Myotis	(<i>Myotis volans</i>)
Silver-haired Bat	(<i>Lasionycteris noctivagans</i>)

The following data reflect survey blocks and/or incidental sightings of bird species within the allotments boundaries from the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). These data represent birds that were confirmed, probably, or possibly breeding within or near the project

boundaries. The list also includes Species of Conservation Concern that have a high probability of inhabiting the project area. These data are not comprehensive, and additional species not listed here may be present within the project boundary.

Table B.3. Bird species and breeding status reported within Atlas of the Breeding Birds of Nevada (Floyd et al. 2007) adjacent or within the Meadow Valley Wash North Watershed.

Common Name	Scientific Name
Abert's Towhee	Pipilo aberti
American Bittern	Botaurus lentiginosus
American Crow	Corvus brachyrhynchos
American Kestrel	Falco sparverius
American Robin	Turdus migratorius
Ash-throated Flycatcher	Myiarchus cinerascens
Bald Eagle	Haliaeetus leucocephalus
Barn Owl	Tyto alba
Bell's Vireo	Vireo bellii
Belted Kingfisher	Ceryle alcyon
Bendire's Thrasher	Toxostoma bendirei
Bewick's Wren	Thryomanes bewickii
Black Phoebe	Sayornis nigricans
Black-chinned Hummingbird	Archilochus alexandri
Black-chinned Sparrow	Spizella atrogularis
Black-tailed Gnatcatcher	Polioptila melanura
Black-throated Sparrow	Amphispiza bilineata
Blue Grosbeak	Passerina caerulea
Blue-gray Gnatcatcher	Polioptila caerulea
Brewer's Sparrow	Spizella breweri
Broad-tailed Hummingbird	Selasphorus platycercus
Brown-crested Flycatcher	Myiarchus tyrannulus
Brown-headed Cowbird	Molothrus ater
Bullock's Oriole	Icterus bullockii
Cactus Wren	Campylorhynchus brunneicapillus
Canyon Wren	Catherpes mexicanus
Cassin's Kingbird	Tyrannus vociferans
Chipping Sparrow	Spizella passerine
Chukar	Alectoris chukar
Common Raven	Corvus corax
Common Yellowthroat	Geothlypis trichas
Cooper's Hawk	Accipiter cooperii
Dusky Flycatcher	Empidonax oberholseri
Gambel's Quail	Callipepla gambelii
Golden Eagle	Aquila Chrysaetos
Gray Flycatcher	Empidonax wrightii
Great Blue Heron	Ardea herodias
Great Horned Owl	Bubo virginianus)
Greater Roadrunner	Geococcyx californianus
Great-tailed Grackle	Quiscalus mexicanus
Green-tailed Towhee	Pipilo chlorurus
Hairy Woodpecker	Picoides villosus
Hooded Oriole	Icterus cucullatus
House Finch	Carpodacus mexicanus
Indigo Bunting	Passerina cyanea
Ladder-backed Woodpecker	Picoides scalaris
Lazuli Bunting	Passerina amoena

Le Conte's Thrasher	Toxostoma lecontei
Lesser Goldfinch	Carduelis psaltria
Loggerhead Shrike	Lanius ludovicianus
Mallard	Anas platyrhynchos
Marsh Wren	Cistothorus palustris
Mourning Dove	Zenaida macroura
Northern Harrier	Circus cyaneus
Northern Mockingbird	Mimus polyglottos
Osprey	Pandion haliaetus
Phainopepla	Phainopepla nitens
Prairie Falcon	Falco mexicanus
Red-breasted Sapsucker	Sphyrapicus ruber
Rock Wren	Salpinctes obsoletus
Say's Phoebe	Sayornis saya
Scott's Oriole	Icterus parisorum
Sharp-shinned Hawk	Accipiter striatus
Short-eared Owl	Asio flammeus
Song Sparrow	Melospiza melodia
Sora	Porzana carolina
Southwestern Willow Flycatcher	Empidonax traillii extimus
Spotted Towhee	Pipilo maculatus
Steller's Jay	Cyanocitta stelleri
Summer Tanager	Piranga rubra)
Tree Swallow	Tachycineta bicolor
Turkey Vulture	Cathartes aura
Verdin	Auriparus flaviceps
Vermillion Flycatcher	Pyrocephalus rubinus
Violet-green Swallow	Tachycineta thalassina
Virginia Rail	Rallus limicola
Western Kingbird	Tyrannus verticalis
Western Screech-owl	Otus kennicottii
Western Scrub Jay	Aphelocoma californica
Western Tanager	Piranga ludoviciana
Western Wood-Pewee	Contopus sordidulus
White-breasted Nuthatch	Sitta carolinensis
White-crowned Sparrow	Zonotrichia leucophrys
White-throated Swift	Aeronautes saxatalis
Wild Turkey	Meleagris gallopavo
Willow Flycatcher	Empidonax traillii
Yellow Warbler	Dendroica petechia
Yellow-billed Cuckoo	Coccyzus americanus occidentalis
Yellow-breasted Chat	Icteria virens

Table B.4. Raptor species documented to occur in the Meadow Valley Wash North Watershed.

Common name	Scientific name
American Kestrel	(Falco sparverius)
Bald Eagle	(Haliaeetus leucocephalus)
Barn Owl	(Tyto alba)
Cooper's Hawk	(Accipiter cooperii)
Golden Eagle	(Aquila Chrysaetos)
Northern Harrier	(Circus cyaneus)
Osprey	(Pandion haliaetus)
Prairie Falcon	(Falco mexicanus)

Sharp-shinned Hawk	(Accipiter striatus)
Short-eared Owl	(Asio flammeus)
Western Screech-owl	(Otus kennicottii)

Appendix C. Biophysical Setting Classes

MEADOW VALLEY WASH WATERSHED SUMMARY							PROPOSED ACTION IMPACTS BY TREATMENT UNIT				OVERALL PROPOSED ACTION		DEPARTURE FROM DESIRED FUTURE CONDITION BY PERCENT COMPOSITION		
							DELMAR TREATMENT UNITS		CLOVER TREATMENT UNITS		PROPOSED ACTION IMPACT (ACRES)	PROPOSED ACTION IMPACT (% COMPOSITION)	PROPOSED ACTION	CURRENT CONDITION	
BpS MODEL & CLASS	COUNT	CURRENT ACRES	CURRENT PERCENT	RMP Desired Future	REFERENCE ACRES	Acres Removed	Acres Added	Acres Removed	Acres Added						
						Sonoran- Mojave Creosotebush- White Bursage Desert Scrub 131087	A	2	0	0%	14%	27			
B	504	112	57%	40%	78										
C	0	0	0%	35%	69										
D	0	0	0%	10%	20										
E	0	0	0%	1%	2										
U	376	83	43%	0%	0										
TOTALS	882	196	100%	100%	196										
North American Warm Desert Riparian Systems-Stringers 1311552	A	2316	514	41%	15%	189									
	B	2699	599	48%	30%	378									
	C	667	148	12%	55%	694									
	D	0	0	0%	0%	0									
	E	0	0	0%	0%	0									
	U	0	0	0%	0%	0									
TOTALS	5682	1261	100%	100%	1261										
Inter-Mountain Basins Grassewood Flat 131153	A	4	1	0%	5%	19									
	B	1068	237	62%	95%	365									
	C	2	0	0%	0%	0									
	D	0	0	0%	0%	0									
	E	0	0	0%	0%	0									
	U	656	146	38%	0%	0									
TOTALS	1730	384	100%	100%	384										
Rocky Mountain Bigtooth Maple Ravine Woodland 171012	A	0	0	0%	10%	11									
	B	231	51	45%	20%	23									
	C	223	50	43%	70%	80									
	D	0	0	0%	0%	0									
	E	0	0	0%	0%	0									
	U	60	13	12%	0%	0									
TOTALS	514	114	100%	100%	114										
Great Basin Pinyon-Juniper Woodland 171019	A	0	0	0%	5%	3596	0	421.1673	0	180.3029	601	1%	-4%	-5%	
	B	427	95	0%	5%	3596	0	421.1673	0	180.3029	696	1%	-4%	-5%	
	C	58502	12987	18%	20%	14385	693.528	1684.6692	588.078	721.2114	14112	20%	2%	-2%	
	D	102127	22672	32%	65%	46752	2265.177	5475.1749	1073.259	2343.937	27153	38%	-27%	-33%	
	E	80956	17972	25%	5%	3596	2642.022	421.1673	1048.062	180.3029	14884	21%	16%	20%	
	U	81983	18200	25%	0%	0	2822.619	0	896.658	0	14481	20%	20%	25%	
TOTALS	323995	71927	100%	100%	71927	8423.346	8423.346	3606.057	3606.057	71927	100%	12%	15%		
Southern Rocky Mountain Ponderosa Pine Woodland 171054	A	540	120	11%	10%	111			17.649	17.6934	120	11%	1%	1%	
	B	1969	437	39%	5%	56			79.92	8.8467	366	33%	28%	34%	
	C	1603	356	32%	20%	223			58.497	35.3868	333	30%	-2%	12%	
	D	21	5	0%	60%	668			0.222	106.1604	111	10%	-50%	-60%	
	E	0	0	0%	5%	56			0	8.8467	9	1%	-4%	-5%	
	U	882	196	18%	0%	0			20.646	0	175	16%	16%	18%	
TOTALS	5015	1113	100%	100%	1113			176.934	176.934	1113	100%	17%	22%		
Inter-Mountain Basins Curl-leaf Mountain Manzanita Woodland and Shrubland 171062	A	1086	241	23%	10%	104									
	B	1342	298	29%	10%	104									
	C	803	178	17%	20%	208									
	D	147	33	3%	15%	156									
	E	1156	257	25%	45%	467									
	U	141	31	3%	0%	0									
TOTALS	4675	1038	100%	100%	1038										

MEADOW VALLEY WASH WATERSHED SUMMARY							PROPOSED ACTION IMPACTS BY TREATMENT UNIT				OVERALL PROPOSED ACTION		DEPARTURE FROM DESIRED FUTURE CONDITION BY PERCENT COMPOSITION	
							DELMAR TREATMENT UNITS		CLOVER TREATMENT UNITS		PROPOSED ACTION	PROPOSED ACTION IMPACT %		
Bps MODEL & CLASS	COUNT	CURRENT ACRES	CURRENT PERCENT	REFERENCE PERCENT	REFERENCE ACRES	Acres	Acres	Acres	Acres					
						Removed	Added	Removed	Added					
Great Basin Xeric Mixed Sagebrush Shrubland 171079	A	4	1	0%	25%	3085	0	451.548	0	202.4918	655	5%	-20%	-25%
	B	5840	1296	11%	35%	4319	35.631	632.1672	180.042	283.4885	1996	16%	-19%	-24%
	C	9281	2060	17%	25%	3085	143.634	451.548	120.99	202.4918	2450	20%	3%	-8%
	D	8218	1824	15%	5%	617	483.183	90.3096	82.584	40.49835	1389	11%	6%	10%
	E	0	0	0%	5%	617	0	90.3096	0	40.49835	131	1%	-4%	-5%
	U	32249	7159	58%	5%	617	1143.744	90.3096	426.351	40.49835	5720	46%	41%	53%
	TOTALS	55592	12341	100%	100%	12341	1806.192	1806.192	809.967	809.967	12341	100%	16%	21%
Inter-Mountain Basins Big Sagebrush Shrubland 171080	A	107	24	0%	25%	2273	0	111.6105	0.111	77.2005	212	2%	-23%	-25%
	B	3712	824	9%	35%	3183	4.218	156.2547	26.418	108.0807	1058	12%	-23%	-26%
	C	9536	2117	23%	25%	2273	162.948	111.6105	60.051	77.2005	2083	23%	0%	-2%
	D	2990	664	7%	5%	455	5.328	22.3221	4.773	15.4401	691	8%	3%	2%
	E	5338	1185	13%	5%	455	25.197	22.3221	39.072	15.4401	1159	13%	8%	8%
	U	19280	4280	47%	5%	455	248.751	22.3221	178.377	15.4401	3891	43%	38%	42%
	TOTALS	40963	9094	100%	100%	9094	446.442	446.442	308.802	308.802	9094	100%	16%	18%
Inter-Mountain Basins Mixed Salt Desert Scrub 171081	A	0	0	0%	5%	38								
	B	1007	224	29%	40%	304								
	C	718	159	21%	37%	281								
	D	0	0	0%	0%	0								
	E	0	0	0%	0%	0								
	U	1702	378	50%	18%	137								
	TOTALS	3427	761	100%	100%	761								
Mojave Mid-Elevation Mixed Desert Scrub 171082	A	14195	3151	4%	15%	13392								
	B	205655	45655	51%	75%	66958								
	C	0	0	0%	0%	0								
	D	0	0	0%	0%	0								
	E	0	0	0%	0%	0								
	U	182302	40471	45%	10%	8928								
	TOTALS	402152	89278	100%	100%	89278								
Great Basin Semi-Desert Chaparral 171103	A	254	56	1%	15%	1284	0.111	169.61355	3	104.8784	328	4%	-11%	-14%
	B	12069	2679	31%	85%	7277	228.216	961.14345	243	594.3107	3764	44%	-41%	-54%
	C	0	0	0%	0%	0	0	0	0	0	0	0%	0%	0%
	D	0	0	0%	0%	0	0	0	0	0	0	0%	0%	0%
	E	0	0	0%	0%	0	0	0	0	0	0	0%	0%	0%
	U	26242	5826	68%	0%	0	902.43	0	454	0	4470	52%	52%	68%
	TOTALS	38565	8561	100%	100%	8561	1130.757	1130.757	699.189	699.189	8561	100%	17%	23%
Mojave Chaparral 171104	A	7110	1578	45%	15%	531								
	B	3647	810	23%	85%	3008								
	C	0	0	0%	0%	0								
	D	0	0	0%	0%	0								
	E	0	0	0%	0%	0								
	U	5184	1151	33%	0%	0								
	TOTALS	15941	3539	100%	100%	3539								
Rocky Mountain Gambel Oak-Mixed Montane Shrubland 171107	A	172	38	7%	5%	28								
	B	1304	289	51%	35%	198								
	C	905	201	36%	60%	339								
	D	0	0	0%	0%	0								
	E	0	0	0%	0%	0								
	U	163	36	6%	0%	0								
	TOTALS	2544	565	100%	100%	565								

MEADOW VALLEY WASH WATERSHED SUMMARY							PROPOSED ACTION IMPACTS BY TREATMENT UNIT				OVERALL PROPOSED ACTION		DEPARTURE FROM DESIRED FUTURE CONDITION BY PERCENT COMPOSITION	
							DELAWARE TREATMENT UNITS		CLOVER TREATMENT UNITS		PROPOSED ACTION	PROPOSED ACTION IMPACT (%)		
Bps MODEL & CLASS	COUNT	CURRENT ACRES	CURRENT PERCENT	REFERENCE PERCENT	REFERENCE ACRES	Acres	Acres	Acres	Acres					
						Removed	Added	Removed	Added					
Sonoran/Jojoba Semi-Desert Chaparral 171108	A	2525	561	6%	65%	5990	10,656	339,89865	53,835	306,5654	1143	12%	-53%	-59%
	B	9377	2082	23%	35%	3225	24,864	183,02235	195,249	165,0737	2210	24%	-11%	-12%
	C	0	0	0%	0%	0	0	0	0	0	0	0%	0%	0%
	D	0	0	0%	0%	0	0	0	0	0	0	0%	0%	0%
	E	0	0	0%	0%	0	0	0	0	0	0	0%	0%	0%
	U	29608	6573	71%	0%	0	487,401	0	222,555	0	5863	64%	64%	71%
TOTALS	41510	9215	100%	100%	9215	522,921	522,921	471,639	471,639	9215	100%	21%	24%	
Columbia Plateau Low Sagebrush Steppe 171124	A	0	0	0%	25%	133	0	36,10275	0	19,56375	56	10%	-15%	-25%
	B	14	3	1%	35%	186	0	50,54385	0,888	27,38925	80	15%	-20%	-34%
	C	1006	223	42%	25%	133	37,629	36,10275	60,828	19,56375	181	34%	-8%	17%
	D	0	0	0%	5%	27	0	7,22055	0	3,91275	11	2%	-3%	-5%
	E	0	0	0%	5%	27	0	7,22055	0	3,91275	11	2%	-3%	-5%
	U	1373	305	57%	5%	27	106,782	7,22055	16,539	3,91275	193	36%	31%	52%
TOTALS	2393	531	100%	100%	531	144,411	144,411	78,255	78,255	531	100%	13%	23%	
Inter-Mountain Basins Montane Sagebrush Steppe 171126	A	44	10	0%	25%	2222	0	542,87325	0	15,9285	569	6%	-19%	-25%
	B	455	101	1%	35%	3111	0,888	760,02255	0,555	22,2999	882	10%	-25%	-34%
	C	2710	602	7%	25%	2222	55,944	542,87325	5,217	15,9285	1099	12%	6%	-18%
	D	14788	3283	37%	5%	444	343,878	108,57465	0	3,1857	3051	34%	29%	32%
	E	20973	4656	52%	5%	444	1738,926	108,57465	54,945	3,1857	2974	33%	28%	47%
	U	1066	237	3%	5%	444	31,857	108,57465	2,997	3,1857	314	4%	-1%	-2%
TOTALS	40036	8888	100%	100%	8888	2171,493	2171,493	63,714	63,714	8888	100%	18%	26%	
Inter-Mountain Basins Semi-Desert Shrub-Steppe 171127	A	0	0	0%	25%	140								
	B	166	37	7%	35%	196								
	C	0	0	0%	25%	140								
	D	0	0	0%	5%	28								
	E	0	0	0%	5%	28								
	U	2360	524	93%	5%	28								
TOTALS	2526	561	100%	100%	561									
Inter-Mountain Basins Montane Riparian Systems 171154	A	267	59	1%	20%	2183								
	B	243	54	0%	50%	5457								
	C	8105	1799	16%	30%	3274								
	D	0	0	0%	0%	0								
	E	0	0	0%	0%	0								
	U	40547	9001	82%	0%	0								
TOTALS	49162	10914	100%	100%	10914									

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Appendix D. Departure Matrix

BPS MODEL NAME	BPS MODEL NUMBER	CURRENT		PROPOSED ACTION	
		DEPARTURE (%)	FRCC	DEPARTURE (%)	FRCC
Sonora-Mojave Creosotebush-White Bursage Desert Scrub	131087	43	2	43	2
Inter-Mountain Basins Greasewood Flat	131153	38	2	38	2
North American Warm Desert Riparian Systems-Stringers	1311552	43	2	43	2
Rocky Mountain Bigtooth Maple Ravine Woodland	171012	49	2	49	2
Great Basin Pinyon-Juniper Woodland	171019	53	2	35	2
Southern Rocky Mountain Ponderosa Pine Woodland	171054	91	3	57	2
Inter-Mountain Basins Curl-leaf Mountain Mahogany Woodland and Shrubland	171062	62	2	62	2
Great Basin Xeric Mixed Sagebrush Shrubland	171079	64	2	48	2
Inter-Mountain Basins Big Sagebrush Shrubland	171080	58	2	48	2
Inter-Mountain Basins Mixed Salt Desert Scrub	171081	50	2	50	2
Mojave Mid-Elevation Mixed Desert Scrub	171082	45	2	45	2
Great Basin Semi-Desert Chaparral	171103	68	3	52	2
Mogollon Chaparral	171104	62	2	62	2
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	171107	69	3	69	3
Sonora-Mojave Semi-Desert Chaparral	171108	71	3	64	2
Columbia Plateau Low Sagebrush Steppe	171124	79	3	41	2
Inter-Mountain Basins Montane Sagebrush Steppe	171126	77	3	58	2
Inter-Mountain Basins Semi-Desert Shrub-Steppe	171127	93	3	93	3
Inter-Mountain Basins Montane Riparian Systems	171154	83	3	83	3

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Appendix E. Scoping Comment Matrix

Commenter	Date Received	Comment	BLM Response
Western Watersheds Project	12/27/2011	A current EIS that examines all direct, indirect, and cumulative impacts on wildlife - including PJ wildlife - must be conducted.	An EA is being prepared to determine if an EIS is necessary. A decision will be made following the public comment period for the Preliminary EA. Additionally, impacts to wildlife are discussed in the Preliminary EA.
Western Watersheds Project	12/27/2011	BLM Cannot rely on the biased and already outdated Ely RMP	The EA will be tiered to the Ely RMP as a programmatic overview. The EA will include all of the site-specific analysis necessary to determine if an EIS should be pursued or a FONSI should be issued.
Western Watersheds Project	12/27/2011	WWP incorporates by reference ALL Of our comments, and our Protest, of the Ely RMP	BLM does not accept comments by reference from another project
Western Watersheds Project	12/27/2011	What role has mining deforestation - and the current reoccupation by PJ of lands where deforestation occurred - and played in the development of the current veg. communities here?	Prior removal of trees would only affect the project where it caused further departure from the reference condition. These areas are accounted for in the assessment of current departure, regardless of the cause.
Western Watersheds Project	12/27/2011	Instead of killing, thinning, and destroying trees, we ask that Ely BLM focus on restoration of weed lands, areas with crested wheatgrass and other disturbance zones.	
Western Watersheds Project	12/27/2011	It does not appear that the ecological and habitat values of forested areas - and the value of lands for pine nut, cooling the earth and other factors - have been taken into account in this or other Ely watershed analyses.	These issues are addressed under the following sections of the EA: Vegetation, Fish and Wildlife, and Vegetative Products. The cooling effect has been dismissed from further analysis since the remaining vegetation following treatment will provide substantially similar effects.