United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ely District Office
HC33 Box 33500 (702 N. Industrial Way)
Ely, Nevada 89301-9408
http://www.blm.gov/nv/st/en/fo/ely_field_office.html

In Reply Refer To:
9210 (NVL0044)

Dear Interested Party:

The preliminary environmental assessment (DOI-BLM-NV-L020-2008-0014-EA) for the *Cave Valley Ranch Habitat Improvement and Fuels Reduction Project* is enclosed for a two week public review and comment period.

The Proposed Action and the No Action Alternative have been analyzed in the preliminary EA. The Proposed Action is the BLM's preferred alternative to meet the objectives of the project.

Comments should be received in the Ely District Office by no later than Monday, August 10, 2009. Comments can be sent to the address listed in the letterhead above or by contacting Jeff Fenton, Fire Management Specialist at (775) 289-1800. Before including your address, phone number, e-mail address or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Also, if you wish to receive a copy of the final EA and Decision Record, please notify us. The final EA and Decision Record will only be sent to those who notify us.

Sincerely,

Tye Petersen
Fire Management Officer
Ely District Office

Enclosure

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

Environmental Assessment
DOI-BLM-NV-L020-2008-0014-EA
July 2009

Cave Valley Ranch Habitat Improvement and Fuels Reduction Project

Location:

Township 9 North, Range 63 East, Section 1
Township 9 North, Range 64 East, Section 6
Township 10 North, Range 63 East, Sections 13, 24, 25, 26, 35 and 36
Township 10 North, Range 64 East, Sections 19, 30 and 31
White Pine and Lincoln County, Nevada

Applicant/Address:

Cave Valley Ranch, LLC
1932 Ivy Point Lane
Las Vegas, NV 89134

Preliminary

U.S. Department of the Interior
Bureau of Land Management
Ely District Office
Phone: (775) 289-1800
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NATIONAL SYSTEM OF PUBLIC LANDS

BLM

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1.0 BACKGROUND

1.1 Introduction

The project area analyzed in this Environmental Assessment (EA) is located in Cave Valley approximately 40 miles south of Ely, Nevada in White Pine and Lincoln Counties (Map 1). The area is within the main Cave Valley drainage of the Cave Valley watershed. The project is located at the following legal descriptions:

- Township 9 North, Range 63 East, Section 1
- Township 9 North, Range 64 East, Section 6
- Township 10 North, Range 63 East, Sections 13, 24, 25, 26, 35 and 36
- Township 10 North, Range 64 East, Sections 19, 30 and 31

The total project area to be analyzed in this EA is 1,100 acres. Approximately 57 percent (626 acres) of the project area is public land managed by the Bureau of Land Management's (BLM) Schell Field Office and 43 percent (474 acres) is privately owned and managed by Cave Valley Ranch, LLC. An estimated 75 percent of the total project area, or 825 acres would actually be treated. The project would be completed as a combined effort of the BLM, Cave Valley Ranch and the Rocky Mountain Elk Foundation (RMEF).

According to soil properties, the natural (historic) vegetation community for the project area is big sagebrush (*Artemesia tridentata*) and basin wildrye (*Leymus cinereus*) (USDA – NRCS 2003), but the area has been invaded by rubber rabbitbrush (*Ericameria nauseosa*). Rubber rabbitbrush is a competitive shrub that usually increases as ecological condition declines (USDA – NRCS 2003). Rubber rabbitbrush is difficult to control and often results in the decline of other plant species as it becomes established.

The project area has provided habitat for a host of wildlife species including sage grouse (*Centrocercus urophasianus*), Rocky Mountain elk (*Cervus elaphus nelsoni*) and mule deer (*Odocoileus hemionus*). The continued competition and establishment of rubber rabbitbrush is a concern as it is decreasing habitat values for several wildlife species.

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

- *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, Ten-Year Comprehensive Strategy* was a policy developed in 2001 that placed emphasis on reducing risk to communities and the environment by managing wildland fire, hazardous fuels and ecosystem restoration and rehabilitation on both forests and rangelands. Three of the four goals outlined in this policy include: (1) Improve fire prevention and suppression; (2) Reduce hazardous fuels and (3) Restore fire adapted ecosystems.

- The *Standards and Guidelines for Nevada's Northeastern Great Basin* (page 13) states in part, "Create and maintain a diversity of sagebrush age and cover classes on the landscape through the use of prescribed fire, prescribed natural fire, mechanical, biological and/or chemical means to provide a variety of habitats and productivity conditions" and "Where pinyon pine and/or juniper trees have encroached into sagebrush communities, use best management practices to remove trees and re-establish understory species".

- The *Healthy Forests Restoration Act (HFRA) (2003)* was signed into law on December 3, 2003. It is designed to improve the capacity of the Department of Interior and the Department of Agriculture to implement the National Fire Plan and to conduct hazardous fuels reduction projects to protect communities, watersheds and other at-risk lands from catastrophic wildfire.

1.2 Purpose and Need for Action

The purpose of the Proposed Action is to reduce the rubber rabbitbrush community within the private property and adjacent public land drainages in order to restore ecological site conditions, to reduce hazardous fuels, to improve wildlife habitat and to improve other watershed values.

The need for the proposal results from monitoring data which indicates a dominance of rubber rabbitbrush on the project site which should be comprised of approximately 70 to 80 percent basin wildrye when at the ecological site potential (USDA – NRCS, 2003).

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

Table 1 – Fire Regime Groups

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

Frequency is the average number of years between fires. Severity is the effect of fire on the dominant over story vegetation. The primary fuels (big sagebrush and basin wildrye) within the Cave Valley project area are in Fire Regime Groups IV. Fire Regime Group IV means that fire frequency is at 35 to 100+ years and results in stand replacement severity (LANDFIRE Biophysical Setting Models, 2006).

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

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

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

- Reduce rubber rabbitbrush on sagebrush and basin wildrye dominated ecological sites in order to improve the overall vegetative composition within the ecological site potential and improve the health, vigor and production of perennial herbaceous species

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

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

- Restore the historic disturbance regime within the project area

Resource management objectives include the following:

<u>Short Term (immediately post treatment)</u>

- Reduce the canopy cover of rubber rabbitbrush by at least 90 percent on sagebrush and basin wildrye dominated ecological sites on approximately 75 percent (825 acres) of the 1,100 acre project area parameter

<u>Long Term (5 years post treatment)</u>

- Increase the percent composition by weight (lbs/acre) of perennial grasses to a minimum of 90 percent of the ecological site potential on sagebrush and basin wildrye dominated sites within 5 years following completion of the proposed treatments

BLM
Ely District Office
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Cave Valley Habitat Improvement and Fuels Reduction Project
Proposed Treatment Area
Scale: 1:17,500
June 2009
Ely District Office
Jeff Fenton
T9N, R63E, Sec 1
T9N, R64E, Sec 6
T10N, R63E, Sec 13, 24, 25, 26, 35, 36
T10N, R64E, Sec 19, 30, 31
White Pine County, NV, MDM, NAD83
No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.
0
0.25
0.5
1 Miles

1.3 Relationship to Planning

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

- Ely District Record of Decision and Approved Resource Management Plan (August 2008) The Proposed Action and Alternative Action are in conformance with the following Vegetation Resources Goals and Objectives:

  Goals – 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. (Page 26)

  Northeastern Great Basin Resource Advisory Council Standard Habitats exhibit a healthy, productive and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes; habitat conditions meet the life cycle requirements of threatened and endangered species. (Page 26)

  Objectives – Vegetation Resources To manage for resistant and resilient ecological conditions including healthy, productive and diverse populations of native or desirable non-native plant species appropriate to the site characteristics. (Page 26)

  Management Actions – Vegetation Resources (General Vegetation Management)

  - ✓ VEG-1: Emphasize treatment areas that have the best potential to maintain desired conditions or respond and return to the desired range of conditions and mosaic upon the landscape, using all available current or future tools and techniques. (Page 26)
  - ✓ VEG-2: Develop specific management objectives through the watershed analysis process, incorporating direction from activity plans. (Page 26)
  - ✓ 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). (Page 26)
  - ✓ VEG-5: Focus restoration of undesirable conditions initially on those sites that have not crossed vegetation transitional thresholds. (Page 27)
  - ✓ VEG-6: Emphasize the conservation and maintenance of healthy, resilient and functional vegetation communities before restoration of other sites. (Page 27)
  - ✓ VEG-7: Determine seed mixes on a site-specific basis dependent on the probability of successful establishment. Use native and adapted species that compete with annual invasive species or meet other objectives. (Page 27)
  - ✓ VEG-17: Integrate treatments to: (1) Establish and maintain the desired herbaceous state or early shrub state where sagebrush is present along with a robust understory of perennial species; and (2) Prioritize treatments toward restoration of sagebrush communities on areas with deeper soils and higher precipitation (Page 31)
  - ✓ VEG-18: Manage native range to meet the requirements of wildlife species. Management will focus on maintaining or establishing diversity, mosaics and connectivity of sagebrush between geographic areas at the mid and fine scales. (Page 31)

Parameter – Riparian/Wetlands

Desired Range of Conditions: The Ely District Office is directed to follow the appropriate rangeland health standards. The Northeastern Great Basin Resource Advisory Council states "Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria." In addition to achieving proper functioning condition (PFC), composition, structure and cover of riparian vegetation will occur within capabilities of the site. Ground cover and species composition will be appropriate to the site. Riparian areas with free-flowing water (i.e. undeveloped springs) that are non-functional or functioning at risk will show improving trends toward PFC. (Page 32 and 33)

- ✓ VEG-23: Promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment and dissipating energy, in order to provide for stable water flow and bank stability. (Page 33)
- ✓ VEG-24: Focus management actions on uses and activities that allow for the protection, maintenance and restoration of riparian habitat. (Page 33)

Monitoring – Vegetation Resources

Vegetation communities in both treated and untreated areas will be monitored to determine progress toward attaining desire range of conditions. Monitoring to determine success in meeting vegetation management objectives will shift to measuring cover, composition and structure of the community (i.e. the parameters essential for identification of phases within the state and transition model concept). Periodic measurements of vigor and productivity will continue and will utilize standard methodologies (National Research Council 1994; Swanson 2006). (Page 33)

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

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

- Final Programmatic Environmental Report (PER) – Vegetation Treatments on BLM Lands in 17 Western States (June 2007) Chapter 2 – Vegetation Treatment Programs, Policies and Methods, Pages 2-1 through 2-49.

- Final Programmatic Environmental Impact Statement (EIS) - Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007) Chapter 2 – Alternatives, Pages 2-1 through 2-40.

- Page 8 of the White Pine County Public Land Use Plan (2007 Revision) states, "Identify habitat needs for wildlife species, such as adequate forage, water, cover, etc. and provide for those needs so as to, in time, attain appropriate population levels compatible with other multiple uses as determined by public involvement."

- The White Pine County Elk Management Plan (2007 Revision) was developed by a Technical Review Team (TRT) that consisted of representatives from the United States Forest Service (USFS), the Bureau of Land Management (BLM), the National Park Service (NPS), the Natural Resources Conservation Service (NRCS), Nevada Division of Wildlife (NDOW), sportsmen, ranchers, general public, conservationists and the Goshute Indian Tribe. The plan identified vegetation conversion projects by NDOW management units that would improve wildlife habitat by creating a more diverse mixture of grasses, forbs and shrubs. The project area lies within NDOW Management Unit 221.

- The White Pine County Sage Grouse Conservation Plan (2004) was developed by a Coordinated Resource Management (CRM) Steering Committee comprised of the State of Nevada, the Forest Service, the National Park Service, the Bureau of Land Management, private property owners, Native American tribes and the public. On page 15 of the plan, the following strategies have been identified under "Goals, Objectives and Strategies":

  - ✓ Strategy 2.2.4 (page 21) "Increase the amount and improve condition of sagebrush habitats by implementing projects suggested by and agreed to by local planning groups."
  - ✓ Strategy 3.1.9 (page 21) "Identify decadent sagebrush stands and apply management treatments to replace the decadent sagebrush with young, healthy, robust plants.
  - ✓ Strategy 3.2.2 (page 22) "Increase the amount and improve condition of sagebrush habitats by implementing projects suggested by and agreed to by local planning groups."
  - ✓ Strategy 3.2.4 (page 22) "Use all appropriate means (e.g., fire, mechanical or chemical methods) to treat senescent or degraded sagebrush communities to restore age class diversity."
  - ✓ Strategy 3.3.1 (page 22) "Properly implement the Ely BLM District Managed Natural and Prescribed Fire Plan to benefit the ecological processes and systems associated with healthy sagebrush communities."
  - ✓ Strategy 4.1.1 (page 23) "In cooperation with landowners, identify private lands within PMUs that may include sage grouse habitat."
  - ✓ Strategy 4.2.7 (page 23) "Propose, plan and design habitat treatments for the benefit of multiple species, including sage grouse."

1.4 Issues

Issues are impacts or potential impacts to the human environment. The identification of issues for this EA was accomplished by considering the resources that could be affected by implementation of the proposed action or any of the alternatives, as well as through involvement with the public and input from an interdisciplinary team. The identification of issues is summarized in the following table:

Resource/Concern	Analyzed?	Rationale for Analysis or Dismissal from Analysis
Air Quality	No	Short-term dust during implementation
Cultural Resources	No	Eligible cultural sites would be avoided
Forest/Rangeland Health	No	No conflicts with guidance in Northeastern Great Basin Resource Advisory Council's Standards/Guidelines
Migratory Birds	No	Mowing and drill seeding would occur outside breeding/nesting and fledging; chemical application would be short-term (1 day); Tordon 22K practically non-toxic to birds and 2,4-D has lower toxicity levels to birds
Native American Religious Concerns	No	None identified
FWS listed or proposed threatened (T) or endangered (E) species or critical habitat	No	None present
Wastes, Hazardous or Solid	No	All mitigation measures in 2007 EIS, standards/guidelines in BLM Handbook 9011, MSDS and herbicide specimen labels for Tordon 22K and 2,4-D would be adhered to
Water Quality, Drinking/Ground	Yes	Developed well and riparian seeps
Wilderness	No	Not within wilderness area
Environmental Justice	No	No minority or low income populations identified near or within project vicinity
Floodplains	No	Not within major floodplain
Wetlands/Riparian	Yes	No perennial surface water; riparian vegetation present
Invasive, Non-Native Species	Yes	Potential for establishment of non-native or invasive species
Special Status Animals other than those listed or proposed by FWS as T/E	No	Nearest known sage grouse leks are over 3 miles from proposed project area
Special Status Plants other than those listed or proposed by FWS as T/E	No	None present
Wild Horses	No	Not within wild horse herd management area
Fish and Wildlife	Yes	Short-term displacement during project implementation
Vegetation	Yes	Short-term impacts until vegetative establishment
Soils	Yes	Short-term impacts until vegetative establishment
Fire and Fuels	Yes	Project area in FRCC 2; needs to meet FRCC 1
Special Designations other than Wilderness	No	None present
Visual Resource Management (VRM)	No	Primarily VRM 2; minimal VRM 4; treatment would occur in a mosaic pattern to meet VRM objectives
Livestock Grazing	No	Minimal impacts anticipated to grazing management; project area comprises only less than ½ to 2 percent of total acreage on 3 allotments; Cave Valley Ranch initiated project with plans of resting private property until ecological conditions improve
Land Uses	No	Structural range improvements would be avoided; no other ROWs present
Recreation	No	No affects on recreation in the area; minimal to no recreation within project area
Paleontological Resources	No	None present
Water Rights	No	Water rights to Urrutia Well to Mull Revocable Trust; no new water rights applications filed as a result of project
Mineral Resources	No	No active or pending mining claims present
Commercial Products	No	None present

2.0 DESCRIPTION of PROPOSED ACTION and ALTERNATIVES

2.1 Proposed Action

The proposal is to conduct a mechanical treatment (mowing), followed by a chemical treatment (aerial application of Tordon 22K and 2,4-D) within the proposed project area in order to reduce the densities of rubber rabbitbrush communities on sagebrush and basin wildrye dominated ecological sites. A 100 foot buffer around riparian and wetland areas would be provided for during the aerial chemical application of Tordon 22K and 2,4-D. Areas around wetland and riparian areas would be treated through a ground broadcast application using "Weedar", an aquatically approved herbicide. The project area would then be seeded with a seed mixture comprised of native, perennial grasses and forbs adapted to the site using a Truax "No Till" drill. The total project area would include approximately 1,100 acres. An estimated 75 percent (825 acres) would be targeted for treatment. The proposed treatment schedule would be as follows:

- Mowing treatment would be conducted during the summer/fall of 2009
- Chemical treatment would be conducted during the late spring/early summer of 2010
- Drill seeding would be conducted during the fall of 2010

Tordon is a highly translocated, selective herbicide active through both foliage and roots on many broadleaf herbaceous weeds and woody plants. 2,4-D 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. The herbicides would be applied using aerial (helicopter or airplane) resources. The pilot would be required to have a current Nevada pesticide applicator's license and the aircraft would need to be equipped to precisely dispense the herbicide. A Pesticide Use Proposal (PUP) would be completed and authorized prior to completing the treatment. All mitigation measures outlined in the *Final PEIS – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007)* will be followed. Standards and guidelines for storage facilities, posting and handling, accountability and transportation as listed in BLM Handbook 9011 (Pesticide Storage, Transportation, Spills and Disposal) Section II would be followed. Items listed in the Material Safety Data Sheets (MSDS) provided for Tordon and 2,4-D would also be adhered to. 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 sites and sites. The preferred time of application 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 date and year of 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. Mitigation measures outlined in the Final Programmatic EIS - Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007) would be followed during all stages of the project.

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

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

Livestock grazing would not be scheduled within the treatment area during mowing or chemical treatment activities. Following the mowing treatment (summer/fall of 2009), livestock grazing could resume within the permitted use until the chemical treatment was conducted (late spring/early summer of 2010). Livestock grazing could resume within the permitted use 30 days following chemical application until the drill seeding occurred. Livestock grazing would not be allowed within the treatment area following seeding for two complete growing seasons or until the following vegetation objectives have been achieved:

- The establishment of at least 6 desirable, perennial plants per 9.6 square foot hoop or 10 percent perennial vegetative cover

The closure period within the treatment area may be extended pending the rate of progress towards vegetative establishment. No new fencing is being proposed in order to prevent livestock from entering the treated areas. The livestock grazing permittee would be required to keep livestock out of the treatment area by employing other means of livestock control (e.g., herding or removing livestock from the allotments). Livestock grazing could resume as normally scheduled after the closure period, or when vegetation cover objectives have been met. An interdisciplinary team would conduct a review of resource monitoring data and objectives to determine if and when livestock grazing should be allowed to occur within the project area. If environmental factors prevent attainment of resource management objectives following the mandatory rest period, an interdisciplinary team would review resource monitoring data and determine an appropriate grazing regime with the permittee. Any terms and conditions specific to livestock grazing within the project area would also be discussed and included in any annual grazing authorization.

Vegetative transects were established and monitored within the proposed project area in June of 2009 (pre-treatment) and would be monitored following project implementation (post-treatment) to determine success towards meeting the long-term resource management objectives. The monitoring techniques utilized follow BLM approved methods. Vegetative establishment would be monitored to determine if the project is promoting soil protection, providing forage and protective cover and improving the overall ecological and watershed conditions. All vegetative trend monitoring site locations were marked and recorded. The treatment areas would be monitored to ensure any potential noxious weeds and undesirable species infestations are controlled. If noxious weeds are found, suppression measures would be taken. The noxious weed infestations would be reported to the Ely District Office Noxious Weed and Invasive Species Coordinator in order to be included on the treatment schedule as soon as possible.

2.2 No Action Alternative

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

2.3 Alternatives Considered but Eliminated from Detailed Analysis

One alternative considered was prescribed burning to reduce or remove rubber rabbitbrush communities which have established on sagebrush and basin wildrye dominated ecological sites. This alternative was eliminated from detailed analysis because of the ability of rubber rabbitbrush to re-sprout from the crown following fire disturbance. Recovery of rubber rabbitbrush after fire is described as "rapid" or "very rapid" and recovery may occur by means of vigorous sprouting aided by the release of nutrients after fire (Tirmenstein, D. 1999). Prescribed fire would not meet the needs of the proposal.

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

3.1 General Description

The proposed project area occurs within the Cave Valley Watershed. Elevations at the proposed project site average approximately 6,000 and slopes are estimated at less than 5 percent. Annual precipitation levels average from approximately 10 to 14 inches. The primary vegetation within the project area consists of rubber rabbitbrush communities. Big sagebrush is also present on the site. Understory, herbaceous, species consist of basin wildrye, Baltic rush, Nebraska sedge, western yarrow, common dandelion and bluegrass. The affected environment is described below followed by the environmental consequences for each resource. Refer to the Cave Valley Watershed Evaluation (2008) for other resource information relevant to the project area.

3.2 Vegetation

Affected Environment

The primary vegetation within the project area consists of mature rubber rabbitbrush communities. Big sagebrush is also present on the site. Understory, herbaceous, species consist of basin wildrye, Baltic rush, Nebraska sedge, western yarrow, common dandelion and bluegrass. Perennial grasses occur at levels below ecological site potential. There has been an overall reduction in the production and vigor of perennial, cool-season grasses within the proposed treatment area. Rubber rabbitbrush has become established on ecological sites dominated which are dominated by sagebrush and basin wildrye when at or near site potential.

The primary ecological site which occurs in the bottoms is identified as a Loamy Bottom 10-14 Inch Precipitation Zone, 028BY003NV, ARTRT/LECI4. The potential vegetative composition is approximately 85 percent grasses, 5 percent forbs and 10 percent shrubs.

The primary ecological site which occurs in the upper side draws is identified as a Loamy Fan 12+ Inch Precipitation Zone, 028BY082NV, ARTR2/LECI4-HECO26. The potential vegetative composition is approximately 70 percent grasses, 10 percent forbs and 20 percent shrubs.

Resource Monitoring was conducted by the BLM to determine the existing percent species composition by weight on a representative site within the proposed project area at Township 9 North, Range 64 East, Section 6 NW ¼. The data was collected on the primary ecological site within the project area (Loamy Bottom 10-14 Inch Precipitation Zone, 028BY003NV, ARTRT/LECI4). The monitoring data is summarized in the following:

Species	Percent Composition	Percent Allowable at Site Potential
Baltic rush (*Juncus balticus*)	35.1	0-2
common dandelion (*Taraxacum officinale*)	3.1	0
western yarrow (*Achillea millefolium*)	8.9	0
basin wildrye (*Leymus cinereus*)	10.3	70-80
rubber rabbitbrush (*Chrysothamnus nauseosus*)	42.6	0-2

Existing Vegetative Composition			Potential Vegetative Composition		
Grasses	Forbs	Shrubs	Grasses	Forbs	Shrubs
45.4	12.0%	42.6%	85%	5%	10%

The percentage of grasses, forbs and shrubs which should comprise the site when the site is at its potential is relative to environmental factors which are most suitable for certain vegetative species. These factors include, but are not limited to, soil texture, soil depth, slope, aspect and precipitation.

Impacts

Under the Proposed Action, vegetative conditions are expected to improve following implementation of the proposed vegetation treatments. The health, vigor, recruitment and production of perennial grasses, forbs and shrubs would improve to provide a more palatable and nutritional source of forage for livestock and wildlife and also protect the soil resource and other associated watershed values. Reducing the establishment of rubber rabbitbrush on sagebrush and basin wildrye ecological sites would assist in improving ecological conditions within the project area. Under the mowing treatments, minimal to no impacts are expected to the existing grass communities which would remain on the site and provide for soil protection and stability. The existing forb communities are limited, but would be removed from the chemical application. However, seeding the treatment area with desirable, perennial forb species would allow for the re-establishment of forbs within the project area. The existing mature sagebrush communities would be mowed but seed dispersed from the mature plants along with the younger, shorter plants would allow for continued establishment and recruitment of sagebrush.

It is expected that the plant species diversity and the plant species composition would be in better balance with the endemic native wildlife needs when at ecological site potential. The expansion of rubber rabbitbrush has reduced the overall health, vigor, recruitment and production of a variety of grass and shrub species and disrupted the desired plant succession. The proposed treatments would help the project area meet FRCC 1 by reducing fuel loading and continuity. 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 portions of the Cave Valley Watershed in conforming with the Standards and Guidelines for Nevada's Northeastern Great Basin and the Fundamentals of Rangeland Health (Title 43 CFR 4180) by improving soil protection, vegetative diversity, habitat quality and other watershed values. Rangeland Health Standard 1 (Upland Sites) states the following:

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

As indicated by:

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

Under the No Action Alternative, vegetative conditions are expected to remain the same for the short-term and further decline in condition over the long-term as densities of rubber rabbitbrush increase. The health, vigor, recruitment and production of native, perennial grasses, forbs and other shrubs would decline in the long-term due to competition with rubber rabbitbrush for water, nutrients and sunlight. The continued establishment of rubber rabbitbrush would result in the decline in ecological site conditions due to the reduction of perennial grasses, forbs and other shrubs which are important for grazing, browsing, soil protection, soil stability and other watershed values. The No Action Alternative may also eventually prevent portions of the allotments within the project area from conforming with the Standards and Guidelines for Nevada's Northeastern Great Basin and the Fundamentals of Rangeland Health (Title 43 CFR 4180).

Cumulative Impacts

Cumulative impacts are the effects on the environment which result from the incremental impacts of actions in this EA when added to other past, present and reasonably foreseeable actions. Under many situations, uncontrolled wildfires affect continuous expanses of vegetation and habitat, leaving minimal mosaic to the burn pattern. Rehabilitation efforts are generally expensive and difficult due to the lack of species diversity in many plant communities which have burned. Long-term changes in ecological conditions affect vegetative diversity and habitat quality. Past actions to adjust livestock and wildlife use on vegetation combined with present and future actions to implement various fuels and vegetation treatments would allow for an improvement in vegetative recruitment, establishment, production, vigor and diversity and help facilitate the establishment of the natural (historic) fire regime and improve habitat conditions for many species of wildlife. Implementing the Proposed Action, combined with present and future actions, would improve the overall condition of vegetative communities, their resiliency to future disturbance and provide a mosaic of differing ecological conditions which would reduce and minimize cumulative impacts.

3.3 Soils

Affected Environment

The primary soil mapping units within the project area include the Duffer-Kolda Association and the Tulase-Pern Association (USDA - NRCS, 1998 and 2007). The project area is within Major Land Resource Area (MLRA) 28B. The physiographic, climatic, soils and vegetative characteristics of these sites are outlined in USDA - NRCS Ecological Site Guides (2003).

The Duffer-Kolda Association occurs from 5,800 to 6,200 feet in elevation and within the 8 to 9 inch precipitation zone. These soils occur on slopes from 0 to 2 percent. The soil association is comprised primarily of silt loams. These soils have slow to moderately slow permeability and have very slow runoff potential.

The Tulase-Pern Association occurs from 6,000 to 6,500 feet in elevation and within the 10 inch precipitation zone. These soils occur on slopes from 0 to 4 percent. The soil association is comprised

primarily of silt loams. These soils have moderate permeability and have slow to medium runoff potential.

Impacts

Under the Proposed Action, there would be minimal soil erosion expected from implementation of the mowing and chemical treatments. The mowing and chemical treatments would target rubber rabbitbrush which has established on sagebrush and basin wildrye ecological sites. The mowing of mature shrubs within the project area would leave the basal portion of the shrubs along with their deep root structure embedded into the soil. The embedded root structure, along with the existing grasses and other plants would allow for soil stability until such time that the herbaceous understory increased in density and improved ground cover. It is expected that the basin wildrye and other existing grass communities would increase in density and ground cover quite rapidly due to lower competition and the overall site conditions. The establishment of the seeded perennial grasses and forbs will also provide valuable soil protection.

The chemical application would remove the limiting, existing forb communities and a majority of the shrubs on the site. However, seeding the treatment area with desirable, perennial forb species would allow for the re-establishment of forbs within the project area. The existing mature sagebrush communities would be mowed but the root mass would remain embedded in the soil and the seed dispersed from the mature plants and the presence of the younger, shorter plants would allow for soil protection during the time vegetative succession advanced toward site potential.

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

Under the No Action Alternative, impacts to soils from erosion are expected to be minimal in the absence of wildfire. Rubber rabbitbrush can be an important structural and ecological component in stable and disturbed plant communities. Its ability to stabilize soil and reduce wind and water erosion preserves habitat for other shrubs, forbs and grasses. This shrub is an excellent plant for erosion control because it has deep roots, produces heavy litter and is able to establish on severe sites (Aldon, Pase 1981; McArthur, 1995). In the presence of fire, impacts to soil erosion from wind and water are expected to increase until such time the rubber rabbitbrush re-established on the site. Recovery of rubber rabbitbrush after fire is described as "rapid" or "very rapid" and recovery may occur by means of vigorous sprouting aided by the release of nutrients after fire (Tirmenstein, D. 1999). However, adverse impacts to soil erosion could occur during the recovery period following fire in the event of a high wind or flooding event.

Cumulative Impacts

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

implementation of various treatments would improve the overall watershed stability which would indirectly reduce cumulative impacts.

3.4 Wildlife

Affected Environment

The entire proposed project area occurs within yearlong habitat for mule deer and elk. None of the habitat for mule deer or elk is identified as key or crucial habitat. There is considerable elk use in Cave Valley, particularly on seeded lands. There is no occupied pronghorn antelope habitat identified in or near the proposed project area. However, NDOW completed an emergency transplant of pronghorn antelope north of the project area during the fall of 2007. Potential sage grouse habitat occurs throughout the Cave Valley Watershed. However, the nearest known sage grouse lek occurs over 3 miles from the proposed project area.

Impacts

Under the Proposed Action, there would be an overall net benefit to neighboring mule deer and elk populations within the project area by improving vegetative production, regeneration, diversity and vigor. Ecological conditions should be improved and progress towards the potential natural community. The proposed project is not located near any wildlife watering facilities, but there is one developed water source (well). Mule deer and elk would be expected to temporarily avoid the area during the proposed treatment activities. However, the activity would be of relatively short duration. The potential long-term effects on habitat would result in a greater mosaic of vegetative communities. A mosaic pattern benefits wildlife populations by allowing for greater vegetative diversity, diverse age-class distribution and a patchiness effect which provides thermal and protective cover. The expected increase in perennial grasses and forbs, as well as desirable shrubs, would be beneficial for mule deer and elk. By improving the overall ecological conditions and vegetative diversity, the proposed action has the potential to improve habitat for a variety of other wildlife species such as, but not limited to, sage grouse, migratory birds, small mammals, rodents and raptors.

Implementation of the Proposed Action is expected to benefit wildlife populations, the associated habitat conditions and assist portions of the Cave Valley Watershed in conforming with Rangeland Health Standard 3 (Habitat) which states the following:

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

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

Under the No Action Alternative, resource conditions are expected to remain the same for a short-term period and continue to decline over the long-term. The continued establishment of rubber rabbitbrush onto sagebrush and basin wildrye ecological sites will result in the further decline in production, vigor

and diversity of native grass, forb and shrub species and result in a further decline in habitat conditions. Forage quality and quantity would continue to decline. Overall habitat conditions would decline in the long-term for all wildlife species endemic to the area. Under the No Action Alternative, conformance with Rangeland Health Standard 3 is not expected to be met within the proposed project area.

Cumulative Impacts

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

3.5 Riparian and Wetland Areas

Affected Environment

Riparian vegetation such as Baltic rush occurs within the proposed project area. Other species such as basin wildrye which are adaptable to sites such as swales, drainages and floodplains are also present. There are numerous ephemeral washes which drain into the proposed project area, but no perennial or intermittent water sources are present. One well occurs within the proposed project area.

Impacts

Under the Proposed Action, the removal of rubber rabbitbrush on sites within the project area is expected to improve potential riparian habitat which occurs along the bottoms and surrounding ephemeral washes. The removal of upland species such as rubber rabbitbrush is expected to result in an increase in desirable riparian species over the long term and may result in the eventual presence of surface water along the bottom and ephemeral washes. An increase in surface water would encourage the establishment of desirable riparian woody species, riparian grasses or riparian grass-like species which would improve bank cover and stability on soils which are vulnerable to scouring and degradation from natural activities such as flooding. Over the long term, the establishment of riparian herbaceous and shrub species would assist in providing soil protection and stability which would reduce the potential for soil erosion during flooding and other natural weather events and in turn, reduce the potential for sedimentation into nearby riparian areas. The 100 foot buffer around riparian and wetland areas during the aerial chemical application of Tordon 22K and 2,4-D and the ground broadcast use of "Weedar", an aquatically approved herbicide, would eliminate any potential chemical impacts to riparian areas.

Implementation of the Proposed Action may assist in promoting surface water development and help any potential riparian areas in maintaining PFC or make progress towards achieving PFC over the long term and conforming with Rangeland Health Standard 2 (Riparian and Wetland Sites) which states the following:

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

As indicated by:

Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows. Elements indicating proper functioning condition such as avoiding accelerating erosion, capturing sediment and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:

- *Width/Depth ratio;*
- *Channel roughness;*
- *Sinuosity of stream channel;*
- *Bank stability;*
- *Vegetative cover (amount, spacing, life form);*
- *Other cover (large woody debris, rock)*

Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.

Chemical, physical and biological water constituents are not exceeding the State water quality Standards."

Under the No Action Alternative, adverse impacts to riparian and wetland areas are expected to occur over time with a continued increase in the establishment of rubber rabbitbrush within the proposed project area. The establishment of these species would reduce the opportunity for the establishment of desirable riparian species and the potential for perennial surface water flow within the proposed project area resulting in an increasing vulnerability to scouring and degradation from natural activities such as flooding. Impacts to riparian areas due to the absence or low density of desirable, perennial herbaceous and shrub species on rubber rabbitbrush infested areas is expected to result in reduced soil protection and stability which would increase potential for soil erosion during flooding and other natural weather events. The soil erosion would likely result in the increase of future sedimentation into nearby riparian areas. The No Action Alternative is not expected to assist in maintaining PFC or making progress towards achieving PFC on riparian areas and in conforming with Rangeland Health Standard 2 (Riparian and Wetland Sites).

Cumulative Impacts

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

3.6 Fire and Hazardous Fuels

Affected Environment

Historically, the Cave Valley area and adjacent mountains were fire adapted. Fire played a regular disturbance role in the ecosystem. Fire exclusion has occurred throughout the west since Europeans arrived, which is thought to have affected the natural role of fire. Vegetation volume has increased, and vegetative composition has changed as a result of this natural disturbance alteration. Fire history and fire effects in the Great Basin are a vital component of resource health.

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

The proposed project area is within the Dry Lake Fire Management Unit (FMU).

Impacts

Under the Proposed Action, fire behavior would be decreased as a result of reduced fuel loading. Future natural fires within the proposed project area would be less extensive and have reduced intensity due to a change in the fuel type. Ecological conditions are expected to be restored following a lower intensity fire due to the ability of native grasses and other plants to respond favorably to a low to moderate intensity fire. A lower intensity fire would be easier to manage, reducing the risk to natural resources, private lands, private withholdings, physical structures associated with ROWs and aesthetic values. Under the Proposed Action, the FRCC should be within the natural (historic) range.

Under the No Action Alternative, fuel conditions would continue to increase and accumulate beyond levels representative of the natural (historic) fire regime which would increase the burn intensity potential. Ecological conditions would not be restored to the site potential due to the ability for rubber rabbitbrush to re-sprout following fire. Recovery of rubber rabbitbrush after fire is described as "rapid" or "very rapid" and recovery may occur by means of vigorous sprouting aided by the release of nutrients after fire (Tirmenstein, D. 1999). Under the No Action Alternative, fuel loading and fire intensity potential would remain the greatest in the long-term and fires would be more difficult to manage.

Cumulative Impacts

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

3.7 Invasive, Non-Native Species (Including Noxious Weeds)

Affected Environment

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

According to the Ely District weed inventory data, the only species occurring within the proposed project area boundaries is whitetop or hoary cress (*Lepidium draba*). Other species found along roadways and drainages leading to the project area include Russian knapweed (*Acroptilon repens*), bull thistle (*Cirsium vulgare*) and whitetop or hoary cress (*Lepidium draba*). There is also probably cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomeratus*) and Russian thistle (*Salsola kali*) scattered along roads in the area. The area was last inventoried for noxious weeds in 2003.
A Risk Assessment for Noxious and Invasive Weeds was completed for this project proposal in July of 2008 and the risk rating was identified as a "32" which means that preventative management measures should be developed for the proposed project to reduce the risk of introduction or spread of noxious weeds into the area. Preventative management measures should include seeding the project area to occupy disturbed sites with desirable species. The project area should be monitored for at least 3 consecutive years in order to provide for the control of newly established populations of noxious weeds and implement follow-up treatment for previously treated infestations.

Impacts

Under the Proposed Action, noxious and non-native, invasive weeds which have been identified within or outside the proposed project area could become established or increase within the area in the short-term following the mowing treatment due to perennial grasses and forbs at levels less than site potential. However, the chemical treatment which targets rubber rabbitbrush would also be effective in controlling noxious, broadleaf weeds. The establishment of seeded desirable, perennial grasses and forbs should also prevent the establishment of noxious and invasive species over the long-term.

Another way that new species could be introduced to the area could result from vehicles, heavy equipment and activities associated with the use of the vehicles and equipment. Conformance with the Ely District Noxious Weed Prevention Schedule and mitigation measures identified in the Risk Assessment for Noxious and Invasive Weeds would reduce the risk of noxious weeds and non-native, invasive species establishment.

Under the No Action Alternative, noxious and non-native, invasive weeds may eventually increase into the targeted treatment area, particularly along traveled roads. Declining understory species in sagebrush and woodland sites would increase the risk of weed species establishment following a natural disturbance (e.g., wildfire) due to the lack of competition from desirable, perennial grasses and forbs.

Cumulative Impacts

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

3.8 Water Quality

Affected Environment

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

Impacts

Under the Proposed Action, there is a possibility intense precipitation events related to soil erosion could result in short-term impacts to water quality. It is anticipated that the impacts would be short duration, not lasting long after the initial sediment influx or the initial high water flow. Any potential runoff events resulting from implementation of the Proposed Action would not be expected to increase the frequency or intensity of events above historical occurrence. With an increase in the perennial grass and forb understory, soil surface erosion from intense precipitation events should be reduced resulting in lesser impacts to water quality. The mitigation measures outlined in the Final Programmatic EIS - Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States, the standards and guidelines outlined in BLM Handbook 9011 (Pesticide Storage, Transportation, Spills and Disposal) Section II and the MSDS and herbicide specimen labels for Tordon 22K and 2,4-D would be adhered to in order to avoid impacts to water quality. The 100 foot buffer around riparian and wetland areas during the aerial chemical application of Tordon 22K and 2,4-D and the ground broadcast use of "Weedar", an aquatically approved herbicide, would eliminate any potential chemical impacts to water quality.

Under the No Action Alternative, impacts to water quality are expected to remain the same as the present over the short-term. Long-term impacts could result in reduced water quality as watershed stability would decrease through a decline in ecological conditions and accelerated soil erosion potential on the treatment site. Under the No Action Alternative, herbaceous ground cover is expected to remain at levels below the ecological site potential and further decline as rubber rabbitbrush densities increase.

With a decline herbaceous ground cover, the potential for soil surface erosion will increase over the long-term and may adversely impact water quality on sites within the general project area.

Cumulative Impacts

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

4.0 PROPOSED MITIGATION MEASURES

Appropriate mitigation measures have been incorporated into the Proposed Action and the Alternative Action and none are proposed in response to the anticipated impacts. Mitigation measures include considerations for noxious weeds and invasive species and water quality.

5.0 SUGGESTED MONITORING

Appropriate monitoring has been incorporated into the Proposed Action and no additional monitoring is suggested. Monitoring has been implemented to establish baseline conditions and to measure the effects of the proposed treatments over a period of time. Monitoring would also be used to determine if, and when, resource management objectives have been achieved. An interdisciplinary team, including members of the public expressing interest, would be included in the monitoring efforts. Monitoring information would be collected, analyzed and interpreted using BLM approved methods. Monitoring data would be available for review at the BLM Ely District Office.

6.0 CONSULTATION and COORDINATION

- Steve Foree (NDOW Supervisory Habitat Biologist)
- Dana Johnson (Cave Valley Ranch Manager)
- Rocky Mountain Elk Foundation
- Cave Valley Ranch (Cave Valley Ranch Permittee)
- Bruce Jensen (Shingle Pass Permittee)
- Kevin Whipple (Sheep Pass Permittee)
- John Whipple (Sheep Pass Permittee)
- Larry Howard (Interested Public)
- Laurel Marshall (Interested Public)
- Nevada State Clearinghouse

Public involvement also consisted of the following:

- a letter to all the identified public interests on August 11, 2008;
- a Tribal coordination meeting conducted at the Ely District Office on March 19, 2009;
- a notice in BLM Nevada News on August 20, 2008;
- a notice under "NEPA" at http://www.blm.gov/nv/st/en/fo/ely_field_office.html in August of 2008;
- coordination with the Cave Valley Ranch, Sheep Pass and Shingle Pass permittees;
- coordination with Cave Valley Ranch and RMEF;
- and through consultation with partner agencies such as NDOW

Internal District Review		
Name	Title	Resources
Cody Coombs	Fuels Program Manager	Fire, Fuels, Vegetation
Chelsy Simerson	Rangeland Management Specialist	Livestock Grazing
Mark D'Aversa	Soil Scientist	Riparian/Wetlands/Floodplains; Soil/Water/Air
Paul Podborny	Wildlife Biologist	Wildlife; Migratory Birds; T&E and Special Status Species
Bonnie Million	Noxious Weed Coordinator	Noxious Weeds, Invasive Species
Elizabeth Townley	Outdoor Recreation Planner	VRM, Recreation
Kurt Braun	Archeologist	Cultural/Paleontological/Historical Resources
Melanie Peterson	Environmental Protection Specialist	Hazardous Materials
Elvis Wall	Native American Coordinator	Native American Religious Concerns
Brenda Linnell	Realty Specialist	Lands and Realty Uses
Zachary Peterson	Forester/NEPA Coordinator	NEPA Compliance

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