

**PRELIMINARY
ENVIRONMENTAL ASSESSMENT**

DOI-BLM-NV-WO10-2011-0005-EA

**Montana Mountains Cooperative Fuels
Treatment Project**

September 2011

Prepared by:

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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

DOI-BLM-NV-WO10-2011-0005-EA

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Plan Goals and Objectives.....	1
1.2	Purpose and Need.....	2
1.3	Decisions to Be Made.....	2
1.4	Land Use Plan Conformance.....	3
1.5	Relationship to Laws, Regulations, and other Plans.....	3
1.6	Tiering and Incorporating by Reference.....	4
1.7	Potential Issues.....	4
2.0	PROPOSED ACTION AND ALTERNATIVES	4
2.1	Location of Proposed Action.....	4
2.2	Proposed Action-Vegetation Management and Habitat Rehabilitation.....	5
2.2.1	<i>Fuelbreaks and Greenstrips</i>	6
2.2.2	<i>Road Maintenance and Improvement</i>	7
2.2.3	<i>Rangeland and Habitat Improvement and Restoration</i>	7
2.2.4	<i>Acquisition of Easement</i>	10
2.2.5	<i>Maintenance and Monitoring</i>	11
2.3	Proposed Environmental Protection Measures.....	11
2.4	Alternatives.....	12
2.5	No Action Alternative.....	13
3.0	AFFECTED ENVIRONMENT	13
3.1	Supplemental Authorities (Formerly referred to as Critical Elements).....	14
3.1.1	<i>Air Quality</i>	15
3.1.2	<i>Cultural Resources</i>	15
3.1.3	<i>Invasive Non-native Species</i>	17
3.1.4	<i>Migratory Birds</i>	18
3.1.5	<i>Native American Religious Concerns</i>	18
3.1.6	<i>Threatened and Endangered Species</i>	19
3.1.7	<i>Water Quality</i>	20
3.1.8	<i>Wetland and Riparian Zones</i>	21
	Additional Affected Resources.....	21
3.1.9	<i>Fisheries</i>	21
3.1.10	<i>Fire and Fuels Management</i>	21
3.1.11	<i>Geology and Minerals</i>	24
3.1.12	<i>Lands and Realty</i>	25
3.1.13	<i>Lands with Wilderness Characteristics</i>	25
3.1.14	<i>Public Health and Safety</i>	26
3.1.15	<i>Rangeland Management</i>	26
3.1.16	<i>Recreation</i>	27
3.1.17	<i>Soils</i>	27
3.1.18	<i>Special Status Species</i>	28
3.1.19	<i>Vegetation</i>	32
3.1.20	<i>Visual Resource Management</i>	33
3.1.21	<i>Wildlife</i>	34
4.0	ENVIRONMENTAL CONSEQUENCES	35
4.1	Proposed Actions and Alternatives.....	35

4.1.1	<i>Air Quality</i>	35
4.1.2	<i>Cultural Resources</i>	36
4.1.3	<i>Invasive Non-Native Species</i>	37
4.1.4	<i>Migratory Birds</i>	38
4.1.5	<i>Native American Religious Concerns</i>	39
4.1.6	<i>Threatened and Endangered Species</i>	40
4.1.7	<i>Water Quality</i>	40
4.1.8	<i>Wetlands and Riparian Zones</i>	40
4.1.9	<i>Fisheries</i>	41
4.1.10	<i>Fire and Fuels Management</i>	42
4.1.11	<i>Geology and Minerals</i>	42
4.1.12	<i>Lands and Realty</i>	43
4.1.13	<i>Lands with Wilderness Characteristics</i>	44
4.1.14	<i>Public Health and Safety</i>	44
4.1.15	<i>Rangeland Management</i>	44
4.1.16	<i>Recreation</i>	46
4.1.17	<i>Soils</i>	46
4.1.18	<i>Special Status Species</i>	47
4.1.19	<i>Vegetation</i>	49
4.1.20	<i>Visual Resource Management</i>	50
4.1.21	<i>Wildlife</i>	50
5.0	CUMULATIVE IMPACT ANALYSIS	51
5.1	Cumulative Impacts	53
5.1.1	<i>Air Quality</i>	53
5.1.2	<i>Cultural Resources</i>	54
5.1.3	<i>Invasive Non-native Species</i>	56
5.1.4	<i>Migratory Birds</i>	57
5.1.5	<i>Native American Religious Concerns</i>	58
5.1.6	<i>Threatened and Endangered Species</i>	59
5.1.7	<i>Water Quality</i>	59
5.1.8	<i>Wetlands and Riparian Zones</i>	60
5.1.9	<i>Fisheries</i>	61
5.1.10	<i>Fire and Fuels Management</i>	62
5.1.11	<i>Geology and Minerals</i>	63
5.1.12	<i>Lands and Realty</i>	63
5.1.13	<i>Lands with Wilderness Characteristics</i>	64
5.1.14	<i>Public Health and Safety</i>	64
5.1.15	<i>Rangeland Management</i>	64
5.1.16	<i>Recreation</i>	65
5.1.17	<i>Soils</i>	66
5.1.18	<i>Special Status Species</i>	67
5.1.19	<i>Vegetation</i>	69
5.1.20	<i>Visual Resource Management</i>	70
5.1.21	<i>Wildlife</i>	70
6.0	MITIGATION AND MONITORING	71
6.1	Mitigation and Monitoring During and After Treatment	71

7.0	CONSULTATION AND COORDINATION	72
8.0	LIST OF PREPARERS	72
9.0	PUBLIC OUTREACH	72
10.0	REFERENCES	73
10.0	MAPS	78
11.0	APPENDICES	79

**Montana Mountains Cooperative Fuels Management
and Habitat Restoration Plan and Preliminary Environmental Assessment
DOI-BLM-NV-WO10-2011-0005-EA
Winnemucca District Office**

1.0 INTRODUCTION

The Montana Mountains contains some of the most important Threatened and Endangered and sensitive species habitat within the state of Nevada. Threatened species present include Lahontan cutthroat trout. Candidate species present include the greater sage-grouse, and sensitive species present include pygmy rabbits, burrowing owls and others. Vegetation and habitat within the range are at substantial risk of wildfire due to previous drought years which have led to die-off of mature foliage. The past two years which have been wetter than average have led to an excess of fine fuel build up, leading to an abundance of fuels within the area.

The Montana Mountains are located within the Lone Willow Population Management Unit (PMU) and within the Healthy Lands Initiative (HLI) Boundary. A population management unit defines distribution of sage-grouse within certain geographical areas and defines conservation goals to protect sage-grouse. Conservation goals within the PMU recognize the need for a proactive fuels and habitat management within this PMU to protect sage-grouse habitat. One of the goals of this PMU is to; “Actively protect the remaining unburned portions of the nesting and summer use areas within the PMU from wildfire. PMU Objective 1, further states; “Decrease the potential for large catastrophic fires through manipulations of fuel loads and connectivity.”

The HLI is a Bureau of Land Management (BLM) cooperative conservation effort to restore important wildlife habitat on a landscape scale. HLI has six project areas throughout the west. The Montana Mountains are located within the HLI Oregon-Idaho-Nevada Shrub Steppe Landscape project area. The emphasis of the Montana Mountains Cooperative Fuels and Habitat Restoration Plan (PLAN) is protecting, maintaining and restoring sagebrush steppe sage-grouse habitat subject to the following goals and objectives.

The BLM coordinated with multiple interested agencies and governments early in the planning process and through public scoping of the PLAN. Four meetings and two field trips were held to receive important input which contributed towards development of the PLAN. Involvement included; the Nevada Department of Wildlife (Cooperating Agency), Nevada Division of Forestry, U.S. Fish and Wildlife Service, N-2 Grazing Board, University of Nevada Cooperative Extension, Natural Resources Conservation Service, affected permittees and other interested publics.

1.1 Plan Goals and Objectives

BLM developed goals and objectives base on interdisciplinary team input and public input received from meetings and field trips.

Goals: The goal of the PLAN is to reduce the risk of unwanted wildland fire and to protect and maintain healthy resilient, ecologically diverse habitats and rangeland within the Montana Mountains (See Map 1: Project Location Map).

PLAN Objectives Identify Specific Desired Outcomes To:

- Improve or restore vegetation communities, habitats, and rangeland.
- Match fuel treatments with ecological conditions of the treatment areas and that are compatible with sagebrush obligate species.
- Design treatments that are compatible with livestock grazing.
- Ensure fuel treatments are compatible with existing plans.
- Where possible, utilize existing fuelbreaks, barriers, roads and fence lines to create or support fuelbreaks.
- Strategically place fuelbreaks to ensure effectiveness and to support fire suppression operations.
- Where practicable, design treatments to blend with the natural topography and create a natural mosaic within sagebrush communities allowing for regeneration of sage and an increase in forbs and grasses within the treatment area.
- Consider cumulative effects to vegetation and habitats when developing fuel treatments.
- Protect Threatened and Endangered, candidate and sensitive species habitat.
- Provide long term maintenance and effectiveness of treatments for long term viability of the project.
- Utilize monitoring to ensure fuelbreak effectiveness, maintain ecosystem health and to ensure achievement of goal and objectives.

1.2 Purpose and Need

The purpose of the PLAN is to achieve PLAN goals and objectives by removing hazardous fuels through mechanical, chemical, prescribed fire, and seeding to limit the potential spread of wildfire and to; protect, improve or rehabilitate vegetation and wildlife habitat. The purpose of the PLAN is also to provide for public safety, protection of property and infrastructure and provides off-site sage-grouse and pygmy rabbit habitat mitigation for the Ruby Pipeline project.

According to the Healthy Forest Restoration Act of 2003 the BLM has a responsibility to conduct hazardous fuels reduction projects to protect watersheds and address threats to rangeland health across the landscape. The need for this PLAN is to protect critical sagebrush obligate species habitat including Sage-grouse and Pygmy rabbit habitat and protect threatened species habitat for Lahontan cutthroat trout that are at substantial risk from wildfire due to drought conditions and from hazardous fuels at a landscape level. There is also a need to maintain and improve vegetation communities, improve Fire Regime Condition Classes (FRCC), wildlife habitat and rangeland especially, in areas that have become decadent or have been affected by; Fire, Drought, Disease, or have been altered by establishment of invasive annual species.

1.3 Decisions to Be Made

The authorized officer will decide whether or not to implement the PLAN and which alternative or portions of alternatives will be selected. Any decisions would be issued under this PLAN utilizing applicable authorities and regulations under Federal Land Management and Policy Act (FLPMA), Forest Management authorities per regulations 43 CFR 5000 and Rangeland Management under 43 CFR 4100 regulations and “full force and effect” regulations applicable to the Healthy Forests Initiative and Healthy Forest Restoration Act.

1.4 Land Use Plan Conformance

The proposed action and alternatives described are in conformance with the Paradise-Denio Management Framework Plan III (MFP) July 1982. Although not specifically addressed, the proposed treatments conform to wildlife objectives, fire and management decisions, or standard operating procedures.

Fire F-1 Objective:

“To minimize the wildfire damage to life, property, and resources.”

Wildlife MFPIII Decisions WL-1.21 P.D.-WL 1.27 SG: Maintain and improve habitat for sensitive, protected, threatened and endangered species listed on the U.S. Fish and Wildlife Service Endangered and Threatened List, BLM-Nevada Department of Wildlife Sensitive Species List and those existing Federal and state laws and regulations.

1.5 Relationship to Laws, Regulations, and other Plans

This Environmental Assessment follows the guidance provided in the Healthy Forest Restoration Act under Section 102(a) (5) and has been incorporated by reference:

“Enhance protection from catastrophic wildland fire for threatened and endangered species or their habitats and that maintain and restore such habitats”.

The proposed actions and alternatives described are consistent with state and local laws, regulations and plans to the maximum extent allowable under federal law.

The proposed action and alternatives correspond to the actions recommended in the Nevada and Eastern California Sage-grouse Conservation Plan, 2004 developed by the (Nevada) Governor’s Sage-grouse Conservation Team.

Any and all treatments that alter sagebrush habitat would conform to Management Guidelines for Sage-Grouse and Sagebrush Ecosystems in Nevada (developed by Nevada BLM, October 2000) which includes a newer draft version of the Western States Sage-Grouse Guidelines as amended and developed by the Western Association of Fish and Wildlife Agencies (WAFWA), (Appendix IV).

The following documents provide support for the proposed actions within this EA:

- WFO Environmental Assessment Herbicide Application for Control of Noxious Weeds NV-020-99-10 (January 19, 1999).
- Programmatic Environmental Assessment of Integrated Weed Management on Bureau of Land Management Lands NV-020-08-11.
- Vegetation Treatment Using Herbicide on Bureau of Land Management Lands in Seventeen Western States Programmatic EIS, Record of Decision September 29, 2007.
- Winnemucca Field Office Green Stripping Environmental Assessment No. 020-02-24, Winnemucca Nevada, May, 2002.

These documents are available for review at the BLM, Winnemucca Field Office

1.6 Tiering and Incorporating by Reference

The Council of Environmental Quality regulations at 40 CFR 1508.28, provides for tiering this EA to a broader Environmental Impact Statement (EIS). This EA tiers to the “Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States, Final Programmatic Environmental Impact Statement and Record of Decision (September 2007).” This EA also incorporates by reference, the environmental analysis with respect to herbicides as presented in Chapter 4, pages 4-1 to 4-253.

1.7 Potential Issues

An interested party letter was sent out on August 24, 2010 informing known interested parties that the Bureau of Land Management (BLM) is proposing to implement a variety of restoration and fuelbreak treatments in the Montana Mountains. The BLM has also held multiple Inter Disciplinary Team (ID Team) meetings. Issues identified from public scoping and ID Team meetings are;

- What can be done to maintain, protect and improve sage-grouse, sensitive species, candidate species and Threatened and Endangered species habitat?
- Is it possible to restore cheatgrass “die off” areas?
- What are the potential public safety and health concerns from use of herbicides?
- What are possible detrimental effects to sage-grouse habitat by constructing fuelbreaks?
- Can the potential for wildfire to spread from the valley floors, up drainages into upper elevations containing important sage-grouse habitat be mitigated?
- What are erosion and sediment impacts to important resources from roads?
- Restoration of stringer meadows.
- Habitat enhancement and rehabilitation.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Location of Proposed Action

The Montana Mountains are situated between Quinn River Valley and Kings River Valley, in northern Humboldt County. The project area boundary covers a large expanse of land between Townships 44-48 North, and Ranges 33-38 East (See Map 1: Project Area).

2.2 Proposed Action-Vegetation Management and Habitat Rehabilitation

The BLM WDO in conjunction with Nevada Department of Wildlife (NDOW) is proposing a number of treatments that would create fuelbreaks and improve or rehabilitate habitat within the Montana Mountains Project Area (see Map 1 and Map 1a-d: project location, and treatment areas). Treatments would occur within defined treatment zones. Actual treatments within these zones would vary in widths based on fuel types and topography. Establishment of fuelbreaks would limit the spread and intensity of wildfire. Habitat improvement and rehabilitation actions would enhance and rehabilitate rangeland and wildlife habitat. These management actions would be phased in over time depending on available funding. Treatment techniques (see list below) would be used individually or collectively to achieve desired status for sagebrush habitat.

Mechanical Treatment

A Dixie harrow or rotary mower or other mastication equipment would be used to remove vegetation from the proposed fuelbreak locations. Use of a Dixie Harrow in conjunction with mowing would occur in areas where there is existing native vegetation that has not been altered or burned. Mastication equipment would be pulled by rubber tired/tracked farm type tractors or a dozer.

Herbicide Treatment

The herbicides Imazapic, Glyphosate, and Tebuthiuron, would be used to remove undesirable vegetation and hazardous fuels and control the growth of annual species such as cheatgrass, tumble mustard, and Russian thistle.

Herbicides would be applied in the spring or fall by aircraft, truck, or ATV; herbicide may also be applied with crews utilizing backpack pumps to spray noxious weeds or annual invasive species.

Seeding Treatment

Portions of treated areas would be seeded or planted in the fall after any applicable mechanical treatments and/ or herbicide treatments are completed, depending on degree of surface disturbance and type of understory vegetation. Where possible, seeding would occur in areas where there is no spring grazing, where rest rotation grazing occurs to allow for seeds to establish (see Appendix III for seed mixes).

Seed would be planted using a rangeland drill seeder or broadcasted utilizing an ATV, a tractor or by aircraft. Hand planting of shrub seedlings would also occur where applicable.

Prescribed Fire

Use of Prescribed fire is proposed to pre-treat the cheatgrass die off areas if cheatgrass biomass is great enough to inhibit seeding treatments. Prescribed fire treatments would adhere to BLM policy and guidance. Prior to implementing burning, a prescribed fire burn plan would be prepared, which addresses; burn complexity, appropriate personnel and suppression equipment, fire weather, permits and contingency planning.

Hand Thinning

Hand thinning would involve crews removing vegetation utilizing saws or other hand tools.

Approximate acreage to be impacted by proposed actions would be about 14,313 acres of which about 3,802 acres would be located within existing disturbed areas (roads, previously burned, previously seeded). About 10,511 acres would be new disturbance.

2.2.1 Fuelbreaks and Greenstrips

Proposed fuelbreaks would be constructed and maintained using a combination of treatments including; mechanical, herbicides, prescribed fire, hand thinning, and seeding. Fuelbreaks would range from 100-800 feet wide, depending on fuel types and location. Where possible fuelbreaks would be constructed in a mosaic pattern or strips to blend with existing vegetation and topography and would be constructed adjacent to existing roads or in areas previously disturbed. In addition, the existing Thacker Pass fuelbreak would be maintained.

Greenstrips are a type of fuelbreak that is seeded with fire resistive vegetation (such as kochia, Crested Wheatgrass, Sandberg’s Bluegrass) to slow or prevent the spread of wildfire. Proposed greenstrips would be established in previously burned areas on the west side or Kings River side of the project area. Greenstrips would be constructed by seeding along existing roads with fire resistive vegetation (See Appendix III for seed mixes). Mechanical treatments may be needed to remove existing vegetation biomass. Herbicide treatments would be used to control invasive and annual species and maintain greenstrips after seeding.

Name	Acres	Width	Action
Kings River Fuelbreak	344	400	Mechanical/Seeding/Herbicide
Ikes Canyon Fuelbreak	33	300	Mechanical/Seeding/Herbicide
Gold Hill Fuelbreak	47	300	Mechanical/Seeding/Herbicide
South Fork Fuelbreak	104	300	Mechanical/Seeding/Herbicide
South End Fuelbreak	359	400-800	Mechanical/Seeding/Herbicide
Thacker Pass Fuelbreak	195	300	Mechanical/Seeding/Herbicide
TOTALS	1,082 Acres		
Kings River Rd Greenstrip	258	200	Herbicide/Seeding
Lateral #1 Greenstrip	5	200	Herbicide/Seeding
Lateral #2 Greenstrip	6	200	Herbicide/Seeding
Lateral #3 Greenstrip	6	200	Herbicide/Seeding

Lateral #4 Greenstrip	16	200	Herbicide/Seeding
Lateral #5 Greenstrip	14	200	Herbicide/Seeding
Lateral #6 Greenstrip	15	200	Herbicide/Seeding
Lateral #7 Greenstrip	35	200	Herbicide/Seeding
Lateral #8 Greenstrip	29	200	Herbicide/Seeding
TOTALS	384		
	Acres		

2.2.2 Road Maintenance and Improvement

Proposed road maintenance and improvement actions would include using heavy equipment to blade or grade existing roadways to remove vegetation and improve access. Grading of road surfaces would allow for maintenance, improvement and creation of ditches and shoulders (maximum width for improvements would be 22 feet wide). Maintenance of roads would also include installation of culverts, construction of rolling dip gravel stream crossings, excavating the road base and replacing with gravel and boulder fill (in meadow areas), installing cattleguards, sediment barriers and surfacing areas with gravel. Application of pre-emergent herbicides, prior to grading is also proposed to reduce the spread and establishment of noxious weeds. Once maintained, roads would serve as fuelbreaks and allow for better access for fire suppression equipment. All existing and proposed road improvements would be subject to periodic maintenance.

Road	Length	Acres	Action
Crowley-Jordan	22 miles	59	Maintenance
Pole Creek Road	34 miles	91	Maintain and Improve
Long Canyon	18 miles	48	Improve
Jordan Meadow Mtn.	7 miles	19	Improve
TOTALS	81 Miles	217 Acres	

2.2.3 Rangeland and Habitat Improvement and Restoration

Habitat restoration projects would include manipulation of large stands of decadent sagebrush with poor age class distribution to create a multiple age class stand which would increase the health and vigor of the stand. Mechanical treatments would be applied in a mosaic pattern to change the age class and stand structure. No more than 1/3 of any block would be treated during a one year period and no more than 1/2 of the entire block would be treated within a six year period. Treated areas would be seeded with a mixture of native grasses and forbs (see Appendix III-Native Seeding Species). Treated areas may be treated with herbicide to ensure cheatgrass does not out-compete native species. These treated areas would also serve as fuelbreaks.

Habitat restoration would also address Cheatgrass die-off areas on the East side of the Project Area. The cheatgrass in these areas has died off and presents an opportunity to re-establish native and/or introduced vegetation with little to no pre-treatment (to remove cheatgrass biomass). Potential pre-treatments include

site preparation (mechanical or prescribed fire) and chemical treatments. Following pre-treating, re-seeding to establish native shrubs and native and/or introduced grasses is proposed depending on site potential (see Appendix III-Native Seeding Species and Introduced Seeding Species Tables). Blocks may be temporarily fenced depending on the grazing system to allow for establishment of seeded species. Test plots may be installed prior to seeding to determine if the “die-off” areas are the result of a pathogen spillover where transmissions of pathogens in the seed bank attack other seeds.

Habitat improvement projects include fencing of several springs (see table below) identified in the Lone Willow PMU recovery plan. Fencing (Permanent Fence) sections of the stringer meadows and springs, would allow the springs and meadows to become properly functioning by improving water retention allowing for more effective fuelbreak barriers

Wet meadow restoration and or stabilization would occur in the 4th of July and Bull Spring Meadows. In both locations channel stabilization and rehabilitation would be of primary concern. The BLM would also commit to preserving currently existing vehicular access while negating or minimizing the impacts that current roads cause.

Bull Spring Meadow Restoration Plan:

In the Bull Spring meadow, severe headcuts would need to be stabilized using hardened, flow retarding structures. Moderate headcuts may be stabilized by slope adjustment and replanting of appropriate soil stabilizing vegetation (juncus, carix, salix, etc). Minor headcuts would be allowed to heal naturally with regular (~once per year) monitoring to ensure that minor headcuts are not becoming more exaggerated.

The road through Bull Springs meadow would be divided uphill (to the south) of the spring source. Maximum road widths would be no more than 22 feet wide. The east arm of the road would closely follow a route of equal elevation to a nearby clay mine it would be approximately 0.6 miles long. The west arm of the road would remain outside of the Bull Spring enclosure and rejoin the existing road slightly to the north of the proposed Bull Spring enclosure it would be approximately 0.76 miles long. An existing trough, which is in the meadow would be moved out of the meadow and placed in a different location outside of the proposed enclosure.

4th of July Meadows Restoration Plan:

Prior to restoration of the currently degraded 4th of July meadow, extensive modification of Pole Creek Road would be required. Where distinct stream channels would not likely have occurred prior to the installation of modern culverts, culverts would be removed and the road base excavated and replaced with boulder fill (to just below the historic meadow surface elevations), creating a permeable rock dam. Gravel fill would be added

(bringing the road surface up to historic meadow surface elevations) to provide a more appropriate driving surface. Boulder and gravel fills would be keyed into the adjacent uplands to ensure that high flows would not be able to erode around the ends of the structure. Where distinct stream channels would have likely existed prior to installation of modern culverts, the culverts would be removed and a structure would be installed which would allow for passage of higher flows and lateral migration of the stream channel. Maximum road widths would be no more than 22 feet wide, approximate length of road modification would be 0.3 miles or less.

Restoration in the 4th of July meadow would be divided into two main areas, the areas to the west (upstream side) and to the east (downstream side) of Pole Creek Road. West 4th of July meadow would mainly rely on natural processes to restore channel morphologies, vegetative communities, and water retention and conveyance with regular (~once per year) monitoring to ensure that minor headcuts are not becoming more exaggerated. Moderate headcuts may be targeted for re-contouring and revegetation. East 4th of July meadows would require substantial modification requiring the use of heavy machinery. Vertical stream banks would be terraced to create floodplains which can be accessed by surface water during high flow events. These terraces would also be designed to ensure access of wetland vegetation to groundwater. Once terraced, replanting of appropriate soil stabilizing vegetation (juncus, carix, salix, etc) would occur.

In addition the eastern edge of the 4th of July Exclosure fence would be extended to tie into the rocky ridges approximately 600 feet to the east. Additional fencing would occur along each side of the existing road prohibiting vehicular access to the meadow area. Any fence installed would match existing steel fence designs and specifications. Total meadow restoration described in this EA would impact an area on the order of 60 acres.

Old Man Spring and Spring North of Old Man Spring

Additional wet meadow preservation work would occur near the Old Man Spring exclosure where a reinforced, low water crossing would be installed. The existing fence around Old Man Spring would be replaced with appropriate fence materials including metal brace posts, new wire, and snow clips to accommodate the winter snow loads in the area.

The un-named spring directly north of Old Man Spring would be fenced to create an exclosure. Water from the spring area would be piped to a trough away from the riparian area.

Upper Lone Willow and Lone Willow Riparian Area

A trough located in the upper reaches of the Lone Willow meadow complex would be moved downhill approximately 300 feet away from the riparian

area and re-installed. In addition the existing barbed wire and wood fence around Lone Willow Spring would be removed. The fenced area would be expanded to include additional meadow area and re-fenced with pipe fence (which is a more wildlife friendly design).

Riser Creek Fence

A section of fence, approximately 1/2 mile in length would be installed between the existing allotment boundary fence and the rimrocks of Riser Creek. This fence would prohibit cattle movement into upland areas until grazing is scheduled to occur (as defined in Jordan Meadows Grazing Permit).

Jordan Meadow Spring

Two sections of fence would be installed above Jordan Meadow Spring prohibiting the movement of cattle through the riparian area except during designated cattle movement times. The proposed fence sections would be approximately 1.5 miles long.

Name	Acres	Actions
Sage Block 1	1,785	Dixie Harrow and Seed (Herbicide if necessary)
Sage Block 2	3,113	Dixie Harrow and Seed (Herbicide if necessary)
Sage Block 3	1,629	Dixie Harrow and Seed (Herbicide if necessary)
Sage Block 4	1,738	Dixie Harrow and Seed (Herbicide if necessary)
TOTALS	8,265 Acres	
Die off Block 1	559	Burn/Mow, Herbicide and Seed
Die off Block 2	767	Burn/Mow, Herbicide and Seed
Die off Block 3	1,011	Burn/Mow, Herbicide and Seed
Die Off Block 4	1,681	Burn/Mow, Herbicide and Seed
TOTALS	4,018 Acres	
Wet Meadow Restoration	60	60 acres over the life of the project.
Meadow and Drainage Brush Removal	150	150 acres over the life of the project. 5 acres per project area, no more than 15 acres per year. Includes hand thinning and use of a small mower.
TOTOALS	210 Acres	
4 th of July Meadow	20	Extension of fence around spring and along road, and meadow restoration.
Old Man Exclosure	0	Re-fence spring.
Spring North of Old Man Exclosure	33.4	Fence Spring and pipe water to trough.
Bull Springs	58.2	Fence Spring and pipe water to trough, meadow restoration, re-route road around meadow.
Lone Willow Meadow and Upper Lone Willow	24.6	Fence Spring and pipe water to trough. Relocation of pipeline and existing trough away from meadow area.
TOTALS	136.2 Acres	

2.2.4 Acquisition of Easement

BLM proposes to pursue acquisition of an easement from the private property owner along a portion of the Crowley-Jordan road. Potential easements would be acquired along the roadway within two private parcels of land. One parcel is located at; T46N., R36E., Section 29 the other parcel is located at T45N., R36E., Sections 20 & 29 (see Map 1d: Potential Easements). Acquiring easements would allow BLM to maintain and improve the existing road through these areas ensuring the road is an effective fuelbreak and to allow for continued public access to BLM managed lands within the Montana Mountains.

2.2.5 Maintenance and Monitoring

All proposed actions and existing fuelbreaks would be maintained to ensure effectiveness. Maintenance would include a combination of treatments where and when necessary based on monitoring. Herbicide would be applied in areas where invasive annual species have established or where fuels have built up affecting fuelbreak effectiveness. Habitat rehabilitation or restoration projects would also be maintained to ensure and promote project success.

Monitoring would be implemented to ensure PLAN goals and objectives are achieved. In addition, monitoring would establish baseline data, gauge the effectiveness of treatments and mitigation measures, and would be used to determine the need for treatment maintenance. The methods used to monitor vegetation treatments may include a combination of photo point, paced and permanent density, line-point intercept, gap intercept, belt transects, production plots, and Rangeland Health Assessments. Monitoring for riparian restoration will follow the Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation protocol (Burton, Smith, and Cowley, 2011). Monitoring for invasive species would also include infestation size, density and damage potential. Monitoring would also include fire regime condition class evaluation and disease or “die off” monitoring.

2.3 Proposed Environmental Protection Measures

In addition, the following environmental measures are components of the proposed action and would be implemented:

1. Herbicidal application rate (range of rates) and application would be subject to label restricting and standard operating procedures (See Appendix I).
2. The proposed action includes Fuels Management Best Management Practices for Sage-Grouse Conservation as described in Instruction Memorandum #FA IM 2010 (Appendix IV).
3. All proposed actions (with the exception of road maintenance and improvement) would be performed outside of the migratory bird nesting season.

4. Prior to implementation of treatments, cultural and pygmy rabbit surveys would be conducted. Based on survey results, cultural resources and pygmy rabbit burrows would be avoided.
5. For any proposed actions that are not performed outside of the burrowing owl breeding season (March 1 – August 31), a burrowing owl survey would be conducted in potential habitat areas and burrows would be avoided.
6. Existing documented populations of lonesome milkvetch that occur near proposed treatment areas would be flagged and avoided.
7. For any proposed actions occurring within 0.3 miles of sage-grouse leks between March 1 and May 15, human activity in early morning and late evening would be avoided.
8. Shrubs and native vegetation would not be treated within ten feet of perennial drainages with mechanical treatments.
9. Protective fences would be constructed to BLM wildlife friendly specifications. Fences requiring four wires would be built with a smooth bottom wire to allow for antelope movement. Wire fencing would be installed to include reflectors in order to deter collisions with sage grouse. Steel pipe-rail fence may also be constructed, which eliminates the possibility of sage-grouse entanglement.
10. All terrestrial equipment (e.g. vehicles, hand tools, tractors, etc.) to be used in treatments would be washed offsite prior to being brought to the project site, to avoid spreading noxious weed seeds.
11. All historic properties (i.e. archaeological sites listed unevaluated or eligible for inclusion on the National Register of Historic Places) would be avoided during project implementation. Avoidance buffers of at least 30 meters from National Register sites will be observed during project implementation.
12. If any significant paleontological resources are found during operations, impacts would be mitigated through avoidance and/or data recovery. Any unanticipated vertebrate fossil discovery on BLM lands will be reported immediately to the Project Archaeologist.
13. Drill seeding operations would be completed following the contour of the land as much as possible to reduce potential water erosion and impacts to visual resources.
14. Two weeks before herbicides are applied, the tribal council of the Fort McDermitt Paiute and Shoshone Reservation would be notified of when, where and how herbicides would be applied.

2.4 Alternatives

The following alternatives were developed based on discussion with ID Team Members, Montana Mountains CORE Team members, public comments, and several field trips with interested parties.

2.4.1 *Alternative B - Road Maintenance, Construction, and Improvement*

Alternative B is identical to the proposed road maintenance actions identified under Proposed Action.

No construction of linear fuelbreaks, other greenstrips, habitat restoration treatments or fencing would occur. Approximately 81 miles of roads would be maintained and/or improved.

2.4.2 *Alternative C – Enhanced Vegetation Management Including Site Specific Prescribed Grazing*

Alternative C is identical to the proposed action with the exception that the Kings River fuelbreak would be modified. This alternative would include expansion of the fuelbreak to approximately 1/2 mile wide which would increase the acreage of that fuelbreak to 2,281 acres. The area would be mechanically treated, fenced and seeded with a mixture of native and introduced grasses. After seeding the area would be closed to grazing for a minimum of two growing seasons. Besides serving a purpose as a fuelbreak this area would provide forage for wildlife and livestock. Once objectives are met, these fuelbreaks would be maintained using a combination of mechanical, herbicide, and prescribed grazing.

Under this alternative prescribed grazing would be implemented as needed to meet resource objectives on the proposed Kings River fuelbreak expansion area. Approximately 16,249 acres would be impacted by this alternative.

2.5 No Action Alternative

Under the no action alternative, the management plan would not be implemented. Hazardous fuels would continue to build up increasing the potential for wildfire. All existing fuelbreaks would be maintained and periodic road maintenance would occur.

3.0 AFFECTED ENVIRONMENT

The proposed project plan is located within the Montana Mountains Planning area which totals 345,735 acres (see Map 5: Planning Area Boundary and Cumulative Impact Area). Of which approximately 26,876 acres are private, and approximately 318,859 are public. The Planning area's northern border extends slightly past the Oregon state line, and its southern border is the Thacker Pass Road. The eastern edge of the planning area follows the Quinn River, in the Quinn River Valley and the western edge follows the Kings River, in the Kings River Valley.

There are multiple creeks that flow through the Planning area. Several of the creeks are occupied by Lahontan Cutthroat Trout (LCT) or are defined as LCT Recovery Streams. A variety of wildlife such as mule deer, bighorn sheep, antelope, pygmy rabbits, sage-grouse and others thrive within the area. The Planning area lies within the Lone Willow Sage-grouse Population Management Unit (PMU) which is regarded as one of the most important and intact PMU's in Nevada.

The terrain within the Planning area is varied and diverse. The planning area encompasses an entire mountain range from adjacent valley bottoms to the mountain top. The vegetation within the planning area includes vast stands of Wyoming Big Sagebrush, Low Sagebrush, Salt Desert Shrub, Greasewood, and cheatgrass.

The planning area is a very popular recreation and hunting area for local residents. There are several Lithium and Uranium exploration sites scattered along the southwestern edge of the planning area. There is also a clay prospect located near the Pole Creek road in Bull Basin in the middle, western portion of the planning area.

One Wilderness Study Area (WSA) exists within the project area: Disaster Peak WSA (NV-020-859). All proposed treatment actions fall outside this WSA boundary within the Planning Area.

There are no known vertebrate paleontological resources within the Montana Range. The project area has been modeled as Potential Fossil Yield Categories (PFYC) 1 and 2, which are low potential or PFYC 3, moderate potential. Plant fossils, specifically petrified wood, are known to occur in the Planning Area.

The Planning area is bordered on both the eastern and western edges by agricultural lands and rural ranches. Producers in this area grow a wide variety of crops such as alfalfa hay and seed, potatoes, onions, barley, native meadow hay, mint, and Kentucky Bluegrass seed. Many of the ranches located on the edges of the Planning area hold livestock grazing permits within the Planning area.

3.1 Supplemental Authorities (Formerly referred to as Critical Elements)

The following critical elements or supplemental authorities are present and could be affected by the proposed action and alternative: Air Quality, Cultural Resources, Floodplains, Invasive Non-native Species, Migratory Birds, Threatened and Endangered Species, and Native American Religious Concerns, Water Quality, and Wetland and Riparian Zones.

Table 1. Supplemental Authorities

<i>Critical Element</i>	<i>Present</i>		<i>Affected</i>		<i>Rationale</i>
	Yes	No	Yes	No	
Air Quality	Present		Affected		
ACEC's		Not Present		Not Affected	
Cultural Resources	Present			Not	

				Affected	
Environmental Justice		Not Present		Not Affected	
Floodplains	Present			Not Affected	Quinn River Side/Kings River
Invasive, Non-native Species	Present		Affected		
Migratory Birds	Present		Affected		
Native American Religious Concerns	Present				
Prime or Unique Farmlands		Not Present		Not Affected	
Threatened and Endangered Species	Present		Affected		Lahontan Cutthroat Trout
Wastes, Hazardous or Solid		Not Present		Not Affected	
Water Quality (Surface and Ground)	Present		Affected		
Wetlands and Riparian Zones	Present		Affected		
Wild and Scenic Rivers		Not Present		Not Affected	Crowley Creek and Washburn Creek were evaluated in the Winnemucca District Draft RMP-EIS.
Wilderness		Not Present		Not Affected	

3.1.1 Air Quality

The project area is located within an unclassified air basin. Air quality within the general area of the proposed action is considered good. In most undeveloped regions in Nevada the ambient pollutant levels are below measurable limits. In the past ten years Nevada has been through several severe/extreme drought periods. Based on data from the U.S. Drought Monitor 2002-2004 and 2007-2008 were periods of severe/extreme drought over the majority of the state which contributed to dust storms and increased wildfire danger. Dust storms, wildfire, and commercial burning within the Quinn River and Kings River Valleys occur seasonally.

3.1.2 Cultural Resources

A complete inventory of archeological sites within the Montana Mountains Planning area has not been completed. Inventory currently being done specifically for this project (Cardno-Entrix nd. *in progress*), plus past cultural inventories show a wide range of prehistoric site types spanning the entire archaic period through Euroamerican contact in the nineteenth century. Previous inventories have identified rock shelters, temporary/seasonal open-air camps, lithic scatters, isolated projectile points, etc.). The highest concentration of prehistoric sites is in association with permanent and intermittent water sources. Over-all site density is high, in part due to the presence of an abundance of lithic resources, including obsidian from the **Double H source**. In addition, the Montana

Range is rich in an abundance of wildlife and botanical resources. Springs and seasonal creeks, which may have flown year-round during periods in the past when snowfall was heavier, are also abundant in the range.

Point types found within the Montana Mountains Planning area reflect a wide variety of types that are time sensitive (temporally diagnostic). These include: Northern Side Notch (Early Archaic), Elko Series (Middle Archaic), Great Basin Stemmed (PaleoIndian) and Rosegate and Desert Side-Notched (Late Archaic to EuroAmerican Contact). Based on these temporally diagnostic projectile points, the Montanas were occupied during a prehistoric time range from the Paleo-Indian period (11,000 BP) to the Early Historic (mid-nineteenth century) (Justice 2002).

At contact the Atsaküdükwa tuviwarai (Red Butte Dwellers) were the Northern Paiute band most closely affiliated with the Montanas Range. Summit Lake was the closest major body of water, although several creeks run through the mountains and the Quinn and King's rivers skirt the boundaries of the range.

The prehistoric archaeology, as to settlement pattern and site type distribution, is heavily influenced by the presence of the Double H/Whitehorse National Register Eligible Lithic Procurement District. This district overlaps the project area and, as a key obsidian toolstone location probably attracted more human use of the Montanas Range than would otherwise be expected.

Historic:

It is uncertain where the Montana Range got its name from. Montana is the anglicized form of montaña which means mountain in Spanish.

Historic sites in the project area are generally associated with ranching, and, to a much smaller extent, mining operations from the mid-19th century on.

Disaster Peak is the most prominent geographic land mark within the Montana Range. Local lore as to the origin of the name "Disaster Peak" varies. One story reports that Disaster Peak gets its name from an event in 1864. As the story goes, in that year, a party of seven miners made camp near the as yet to be named peak. They were ambushed by a party of Bannock Indians and four of the prospectors were killed. After this event the location became forever-known as Disaster Peak. A somewhat different version claims that miners returning to the East from California were ambushed by Indians and had to bury their gold on the peak. To this day the treasure has not been found. Losing such a fortune would have been a disaster in deed. One wonders why the miners would have been transporting their gold back East instead of cashing in at an assayer's office in California. Another story isn't nearly as entertaining as the previous two; talk has it that the peak got its name from the first person who climbed it. He broke his leg and considered that a real "disaster."

The first mining claims filed in the Montana's were during the 1890s (Leszcykowski 1986). Large scale mining has never been a major economic concern within the Montanas

Range. For the most part mining in the range has been characterized by small family subsistence operations (Berg 2008). The Disaster Peak Mining District was established in 1914 (Carlson 1974 pg. 98). American Collide currently operates the Disaster Peak Mine. This mine yields a clay consisting largely of the mineral hectorite. Hectorite is mostly used in cosmetics but is also a mineral source for refined lithium.

In the early 1950s the Moonlight mine (site CrNV-2-8587) began operation. On-again off-again small scale exploration, largely for uranium, has been occurring since then to the present.

3.1.3 Invasive Non-native Species

An "invasive species" is defined as a species that is nonnative to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112). Invasive, nonnative species are species that are highly competitive, highly aggressive, and spread easily. They include plants designated as "noxious" and animals designated as "pests" by federal or state law.

The Nevada Department of Agriculture maintains a Nevada Noxious Weed List. The noxious weed species that have been identified in the Project Area are Scotch thistle (*Onopordum acanthium*), a Category B weed and hoary cress (*Cardaria draba*), a Category C weed. Category B weeds are "established in scattered populations in some counties of the state; actively excluded where possible, actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur". Category C noxious weeds are defined by NAC 555.010 as "weeds that are generally established and generally widespread in many counties of the State."

Nevada Revised Statutes, Chapter 555.05 defines "noxious weeds" and mandates land owners and land management agencies to include control of noxious weeds on lands under their jurisdiction.

Nevada has listed 47 non-native invasive plant species that require control. Of these 47 species, 14 species have been identified in the Winnemucca District (for a complete list of weed species, see Appendix II).

Noxious weeds, native and non-native invasive species generally occupy areas of disturbance, such as along commonly used travel routes. Native and non-native invasive species known in the planning area include clasping pepperweed (*Lepidium perfoliatum*), tumble mustard (*Sisymbrium altissimum* L.) and cheatgrass (*Bromus tectorum*). Known noxious weeds in the planning area include Scotch thistle (*Onopordum acanthium* L.), hoary cress (*Cardaria draba* (L.) Desv.) and saltcedar (*Tamarix* L.). Nevada Revised Statutes, Chapter 555.05 defines "noxious weeds" and mandates land owners and land management agencies to include control of noxious weeds on lands under their jurisdiction.

3.1.4 Migratory Birds

Neo-tropical migrant bird species are those species that breed in the temperate portions of North America and winter in the tropics in either North or South America. Migratory birds are protected and managed under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 *et. seq.*) and Executive Order 13186. The MBTA, prohibits take of migratory birds and nests (nests with eggs or young). Executive Order 13186 directs federal agencies to promote the conservation of migratory bird populations and emphasizes maintaining and improving migratory bird habitat.

Treatment areas are dominated by sagebrush/grass vegetative communities. Wyoming Big Sagebrush is the most common habitat type with smaller pockets of Low sagebrush. Small areas of Salt Desert Shrub, Greasewood, and cheatgrass are also present. Migratory birds commonly associated with these vegetative communities include: black-throated sparrow (*Amphispiza bilineata*), Brewer's blackbird (*Euphagus cyanocephalus*), Brewer's sparrow (*Spizella breweri*), burrowing owl (*Athene cunicularia*), canyon wren (*Catherpes mexicanus*), gray flycatcher (*Empidonax wrightii*), green-tailed towhee (*Pipilo chlorurus*), loggerhead shrike (*Lanius ludovicianus*), rock wren (*Salpinctes obsoletus*), sage sparrow (*Amphispiza belli*), sage thrasher (*Oreoscoptes montanus*), western meadowlark (*Sturnella neglecta*), and vesper sparrow (*Pooecetes gramineus*) (Great Basin Bird Observatory, 2003). The burrowing owl, loggerhead shrike, sage thrasher, and Brewer's sparrow are BLM designated sensitive species and are discussed in section 3.1.20.

3.1.5 Native American Religious Concerns

Numerous laws and regulations require consideration of Native American concerns. These include the National Historic Preservation Act of 1966 as Amended (NHPA), the American Indian Religious Freedom Act of 1978 (AIRFA) as amended, Executive Order 13007 (Indian Sacred Sites), Executive Order 13175 (Consultation and Coordination with Tribal Governments), the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), the Archaeological Resources Protection Act of 1979 (ARPA) as well as NEPA and FLPMA.

The proposed action occurs in the traditional territories of the the *Aga' ipañinadökadö* ("fish lake eaters") and *Atsakudöka tuviwarai* ("red butte dwellers") (Stewart 1939, 1941). These two bands are identified with the Summit Lake Paiute Tribe and Fort McDermitt Paiute and Shoshone Tribe. The Shoshone and Paiute Tribes of Duck Valley also claim this area. Consultation letters were sent out to the following tribes on March 2nd, 2011: Fort McDermitt Paiute and Shoshone Tribe, Shoshone and Paiute Tribes of Duck Valley, Winnemucca Indian Colony and Summit Lake Paiutes. A consultation meeting with Fort McDermitt occurred on June 21st, 2011 and this project was discussed.

Disaster Peak is a place of cultural and spiritual importance to the Fort McDermitt Paiute and Shoshone (Bengston 2006). It also serves a boundary marker for the *Aga'*

ipañinadökadö (“fish lake eaters”) and *Atsakudöka tuviwarai* (“red butte dwellers”) (Stewart 1939, 1941).

The sage-grouse has a significant role in Northern Paiute oral traditions. Fowler (2002:243-244) and Kelly (1938) collect several variants explaining how the sage-grouse saved fire during the world flood. The sage-grouse, the only bird (or animal in other variants) to survive the flood, protected a fire on a mountain top, so that the succeeding animals and humans could have it when the flood waters receded. In the Owens Valley Paiute story of how pine nuts came to the world, the sage-grouse is a minor character which helps with the theft of the pine nuts (Steward 1936:431).

Leks are considered as important cultural sites by the Northern Paiutes since the strutting is the basis of the Round Dance (also called Circle Dance) (Bengston 2006). Round Dance locations may or may not be near leks. The timing and meaning of the Round Dance varies across the Great Basin, but the dance is tied to marking seasonal subsistence activities and is imbued with cosmological ideas related to renewal of the world and human’s relationships to the Creator/God (Hultkrantz 1986).

Sage-grouse are also a traditional food source of the Northern Paiutes (Fowler 1986; Gilmore 1953; Steward 1941; Stewart 1941). There are cursory ethnographic reports on sage-grouse hunting for the following Paiute bands: *Agai-Panina*, *Atsa’kudökwa-tuviwarai*, and *Tagö-töka* (Duck Valley Paiutes) (Bengston 2010; Fowler 2002; Stewart 1941). The bird was hunted in the spring, the meat was dried and could be eaten as long as supplies lasted. Deadfalls, hunting blinds, nets, nooses, and snares were all commonly used.

Hunting for the Northern Paiute, whether for sage-grouse or other animals, serves more than a means of providing food. As noted by Deur (2010), Hanes (1982), and Walker (2010), hunting is a way in which the Northern Paiutes and Western Shoshoni preserve part of their cultural traditions. Hunting in traditional areas is an active way of maintaining a tie to their past and a means of preserving cultural traditions. During the hunt, children are taught traditional knowledge and practices by their parents and elders. Hunting is also a means of cementing social relationships: after a successful hunt, the game is shared between the young hunters, their parents and their extended family.

Native Americans utilize a variety of wild plants. Seeds from a variety of grasses, roots like camus and others, can be used as foods, while others like Ephedra and Artemesia can be used for medicines (Stewart 1941).

They also consider all water to be sacred. Not only is it considered as being important for survival, warm and hot springs are often believed to have medicinal properties. Springs are also believed to be the home of water babies. These are supernatural creatures which are reported to carry off children and sometimes people (Hultkrantz 1986).

3.1.6 Threatened and Endangered Species

A species list was requested from the United States Fish and Wildlife Service (USFWS) for the proposed treatment areas (6-23-10). The Oregon USFWS responded and referred to their on-line process for agencies to obtain a species list by county. On July 14, 2010, an on-line species list was obtained for Harney and Malheur counties in Oregon. The species list showed the following listed, proposed and candidate species which may occur in those two Oregon counties:

- Borax Lake chub (*Gila boraxobius*) an endangered species,
- Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) a threatened species,
- Bull trout (*Salvelinus confluentus*) a threatened species,
- Malheur wire-lettuce (*Stepanomeria malheurensis*) an endangered species,
- Howell's spectacular thelypody (*Thelypodium howellii ssp. spectabilis*) a threatened species,
- Greater sage-grouse (*Centrocercus urophasianus*) a candidate species,
- Yellow-billed cuckoo (*Coccyzus americanus*) a candidate species, and
- Columbia spotted frog (*Rana luteiventris*) a candidate species.

Although these species may occur within the Harney and Malheur counties in Oregon these species have not been documented within the Planning Area, which contains only a small southern portion of both counties. Using information provided on the USFWS website, only three of the eight listed, proposed and candidate species occur or are likely to occur within the Planning Area. The three species that will be discussed are Lahontan cutthroat trout, Greater sage-grouse, and Yellow-billed cuckoo. The other five species (Borax Lake Chub, Bull Trout, Malheur wire-lettuce, Howell's spectacular thelypody, and Columbia spotted frog) have been dismissed from further analysis as they do not occur within the Planning Area.

The Nevada USFWS responded on August 6, 2010 that the Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) a threatened species, and the Greater sage-grouse (*Centrocercus urophasianus*) a candidate species, may occur in the Planning Area within Nevada. Lahontan cutthroat trout will be discussed under the Fisheries Sections. Greater sage-grouse and Yellow-billed cuckoo will be discussed under the Special Status Species Sections.

3.1.7 Water Quality

According to the Winnemucca District's spring inventory geodatabase, 471 spring sources occur in the Planning Area. The National Hydrography Dataset indicates that the planning area contains approximately 1,700 miles of perennial, intermittent, and ephemeral streams. Of these streams, 630 miles of stream are within ¼ mile (and downstream of segments within ¼ mile) downstream of proposed projects of all type.

Grazing at spring sources and along the associated spring brooks by large ungulates (cattle) typically lead to decreases in water quality due to increased nutrient loading, water temperatures, bacterial contamination and sediment loading. Native wildlife species also make contributions to bacterial loading. The decreases in water quality

result from surface disturbance associated with hoof action, removal of vegetation, trampling, compaction, and deposition of manure. The Nevada Division of Environmental Protection has not listed any of the water bodies within the Planning Area on the State of Nevada List of Impaired Water Bodies (Section 303(d) of the Clean Water Act).

3.1.8 Wetland and Riparian Zones

In the upper elevations of the Montana Mountains, there are multiple stringer meadows fed by springs. The springs and meadow areas are heavily used and the stringer meadows provide natural fuelbreaks.

Additional Affected Resources

In addition to the critical environmental elements, the following resources, which are present and affected by the proposed action and no action alternative, are described: Fisheries, Fire and Fuels Management, Lands and Realty, Lands with Wilderness Characteristics, Public Health and Safety, Rangeland Management, Recreation, Soils, Special Status Species, Vegetation, Visual Resource Management, and Wildlife.

3.1.9 Fisheries

The Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*, LCT) is a threatened species under the Endangered Species Act of 1973, as amended, and is the only listed fishery species known to occur within the Montana Mountains project area. Within the Planning Area, LCT occur within Corral Canyon, Crowley, Line Canyon, McDermitt, Pole, Riser, Sage, and Washburn creeks. Recovery habitat that is currently unoccupied for LCT exists within Rock Creek, Cold Springs Creek, Cottonwood Creek, and Kings River. The LCT occupied creeks and unoccupied recovery creeks are annually monitored, and the monitoring reports are available from the Winnemucca BLM office upon request.

3.1.10 Fire and Fuels Management

The majority of the Planning Area and all proposed actions of this project are located within the Montana Mountains Fire Management Unit (FMU), (NV-020-16). Wildfire Management priorities for this FMU are:

- Protect adjacent functioning ecosystems (sagebrush habitat), designated critical habitat, habitats for federally listed, BLM sensitive, state listed, and/or federal candidate species.
- Limit cheatgrass expansion.
- Restore degraded ecosystems.
- Desired Future Condition communities will exhibit or be progressing toward a diverse, productive, and healthy population of native or desirable plant species and functioning disturbance processes appropriate for site characteristics.

Montana Mountains Fire Regime Condition Class

A natural fire regime is a general classification of the role fire would play across a landscape in absence of modern human mechanical intervention. Fire regimes are classified based on the average number of years between fires (fire frequency) combined with severity (amount of replacement) of the fire on dominant vegetation.

Fire Regime Number	Frequency (years)	Severity
I	0-35	Low & Mixed
II	0-35	Replacement
III	35-100	Mixed
IV	35-100	Replacement
V	200+	Replacement

A fire regime conditions class (FRCC) is a classification of the amount of departure from the natural regime (Hann and Bunnell 2001). This classification is based on a relative measure describing the degree of departure for the natural (historical) fire regimes. FRCC condition class 3 is a high departure from the central tendency of the natural regime, primarily due to the effects from wildfire, whereas a condition class 1 is a low degree of departure from the natural regime.

Data extracted from the LANDFIRE website shows the following FRCC types and acreages for the planning area:

Fire Regime	Acres	Percent of Planning Area
I	1,056	0.3%
II	68,513	19.8%
III	122,995	35.6%
IV	114,837	33.2%
V	38,484	11.1%
Condition Class		
1	142	0.0%
2	264,504	76.5%
3	7,474	2.2%
Other*	73,828	21.4%

*Other includes Non-Classified lands, Agriculture lands, and Barren or Developed lands.

The majority of the planning area is within Fire Regime III and IV, and Condition Class 2. This data shows that the majority of the area is somewhat departed from the natural regime, but not to the extent of being a Condition Class 3. The Fire Regimes associated with the area (FR III, and FR IV) show that there is a moderate to high probability in the event of a wildfire; it would be a stand replacement fire. Frequency intervals and severity should increase overtime and would be influence by areas dominated by cheatgrass. Cheatgrass invasion alters fire frequency from historic regime intervals to shorter cycles of 5 years or less. Historic fires have converted areas within the FMUs to cheatgrass dominated sites.

BLM data shows that approximately 25 fires have occurred within the Planning Area within the last 25 years (see Map 4: Fire History) Approximately 91,935 acres have burned (roughly 26% of the total planning area acreage) with an average fire size of 3,677 acres per fire within the assessment area boundary. The largest fire was 58,263 acres, on the eastern edge of the Montana's and it occurred in 1985. The majority of large fires within this area have occurred on the southeastern and eastern edges of the Planning area between 1984 and 1997. Very few of these fires were rehabilitated during this time.

In the past 10 years a number of wildfires have occurred in lower elevation areas within the Quinn River and Kings River Valleys adjacent to and in the Montana Mountains (See fire history map). Based on climate changes, fuels buildup and drought conditions the risk for a large catastrophic fire occurring within the range is high. Few fires have occurred in the upper elevations and the potential of fire “wicking” up drainages from the lower to upper elevations has increased. The Montana Mountains are located in a relatively remote area of the state. In the event of a wildfire, response time by suppression resources is increased allowing fire to spread.

A number of past fires have been subjected to a variety of stabilization and rehabilitation treatments with mixed results (see Table 2. Emergency Stabilization and Rehabilitation Fires). These ES&R efforts have re-vegetated and stabilized burned areas. The majority of burned areas within the planning area are in a Fire Regime I, Condition Class 3.

Table 2. Ten Year - Emergency Stabilization and Rehabilitation Fire Acres

Year	Fire Name	Fire Acreage in Planning Area	Acres Rehabilitated
2010	Horse Creek	270	210*
2006	Moonlight	765	761*
2006	Covert	2,146	1,738
2006	Horse Creek**	1,523	1,540
2004	China Creek	95	N/A
2004	Sentinel Point	80	80
2001	Line Canyon	21	N/A
2001	Lucky Strike	38	N/A
2001	Jordan Meadows	347	N/A
2001	Horse Canyon	24	N/A
2001	Sentinel Peak	20	N/A

*Sagebrush Planted in Seed Mix

The BLM has implemented a number of fuelbreaks within the Montana Mountains utilizing the herbicide Tebuthiuron. Tebuthiuron targets brush species with minimal effects to understory grasses and forbs. Strategic placement of Tebuthiuron adjacent to roads and corridors has killed sagebrush in areas thereby creating fuelbreaks. Approximately 771 acres have been treated to date within the Planning Area.

3.1.11 Geology and Minerals

The description of the geology of the project area is based primarily on Willden (1964), Stewart and Carlson (1978), and Stewart (1980). The oldest exposed bedrock in the range is granodiorite and related intrusive rocks, which occur in the northwestern part of the range. Their composition varies considerably, mostly in the amount of included dark minerals. It is uncertain whether this variation exists within a single intrusive body or whether several bodies of different composition are present. The rest of the range is primarily composed of a varying suite of volcanic rocks. Immediately overlying the plutonic rocks is a dacite welded tuff, followed by mixed extrusive units. Near the top of this sequence, the andesite of Orevada View has been dated at approximately 23 Million Years Before Present (mybp) (Greene, 1976). Based on lithology it is thought to be related to the Steens volcanic series. The eruption of the McDermitt caldera complex followed at around 16 mypb and added more rhyolitic to dacitic flows and welded tuffs to the range. At least one caldera in the complex, the Long Ridge Caldera, developed a fresh-water moat, as evidenced by local water-lain sedimentary units high in the geologic sequence. Structures related to the caldera development, re-activated by basin-and-range tectonics, greatly influenced the development of the present topography.

Most mineral resources in the Montana Mountains appear to be associated with the McDermitt Caldera complex and related structures. The caldera rocks are generally anomalously high in several elements, most notably uranium, mercury, antimony, and lithium.

In the northwestern Montana Mountains there are some gold-bearing vein systems, none of which has proven economic to this point. Associated placer deposits have been worked from the late-1800's to mid-1900's, apparently with limited success. The vein deposits appear to be related to the intrusive rocks, but it's not clear what, if any, part that subsequent volcanic episodes had in the development of the gold mineralization.

The historic Cordero mine and recent McDermitt Mine, located adjacent to each other in the northeastern portion of the range, were important mercury mines. Production of mercury is recorded as beginning in 1935 and continued sporadically until the 1990s, when the McDermitt Mine was closed and reclaimed.

Low-grade uranium showings along the west front of the range south of Horse Creek also exist. At the Moonlight Mine uranium occurs in vein structures, at presently sub-economic amounts and grades. Exploration is ongoing along the west flank of the range to determine if mining of uranium may be feasible.

Across much of the project area lithium mineralization consisting of layered beds of lithium-bearing, clay-rich volcanoclastic sedimentary rocks is present. One location in the north-central project area has been developed for use in the clay form, as a special-use clay. There is a project, presently focused at the south end of the project area, where the operator hopes to develop these clays as a source of lithium carbonate, which is the marketing product for most applications of lithium metal. The Kings Valley Lithium

Exploration Project is located on the north side of Thacker Pass. At the present time, five areas of significant lithium mineralization have been identified: the North Lens, North Central Lens, South Lens, South Central Lens, and PCD Lens. In each of these areas, hectorite (the primary lithium bearing clay mineral), occurs in thick, apparently continuous accumulations in the sedimentary rocks. The thickness of mineralization varies from less than three feet to more than 295 feet. Previous exploration suggests that the deposit averages 2,300 parts per million (ppm) lithium (Eggleston 2008). The operator on this project is presently engaged in mineral exploration.

3.1.12 Lands and Realty

There are approximately forty five rights-of-ways situated within the planning area. Of these, six are located near or could be affected by the proposed plan and alternatives (see Table 3). These six rights-of-ways include transmission lines, telephone lines and roads. In addition, acquisition of two 60 foot wide easements are proposed through private land along the existing Jordan Crowley Road. The first easement is located at: T. 46N., R.36E., section 30. This easement would be approximately 1,250 feet in length. The second easement would be located at; T. 45 N., R.36 E., sections 20 and 29. This easement would be approximately 6,980 feet in length.

Table 3. ROW-In Proximity to Proposed Treatments

ROW Name	Legal Description	ROW Number	ROW Type
Oregon-Idaho Utilities Inc. Harney Electric Coop.	T.44N., R.34E., secs. 3, 9-10, 12-13, 15, 18 T.44N., R.35E., secs. 7-8, 13-18 T.44N., R.36E., secs. 14-20, 29, 32 T.44N., R.37E., secs. 1-2, 4-7, 9-11, 14-18, 20-21, 23, 25-28 T.45N., R.37E., secs. 2, 10-12, 14-16, 21-29, 31-32, 35-36 T.46N., R.34E secs. 31-32	N-60463 Nev-058382	FiberOptic (underground) Telephone & Telegraph Transmission Line
Harney Electric Coop.	T.45N., R.34E., secs. 5-6, 8, 20-21, 28-29, 34 T.45N., R.36E., secs. 36	Nev-05382	Transmission Line
Harney Electric Coop. Oregon-Idaho Utilities Inc. Humboldt County	T.46N., R.33E., secs. 23-24, 28, 33, 36	Nev-058382 N-60463 N-55323	Transmission line FiberOptic (underground) Telephone & Telegraph Road
Cordero Mining Company Harney Electric Coop.	T.46N., R.37E., secs. 11-12, 14, 22-23, 27-28, 33-34	Nev-050645 Nev-058382	Telephone Transmission Line
Harney Electric Coop.	T.47N., R.37E., secs. 11, 13-16, 23, 25-27, 36	Nev-058382 N-10522 N-003740	Transmission Line Transmission Line Transmission Line

3.1.13 Lands with Wilderness Characteristics

Wilderness Characteristics Inventories for the proposed treatment areas were reviewed. Historical inventories had determined that the areas did not possess wilderness

characteristics. Current reviews concurred that the areas do not meet the criteria for Lands With Wilderness Characteristics.

3.1.14 Public Health and Safety

BLM approved herbicides were evaluated in the 2007 Final Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States, EIS. The evaluation included effects to human health and safety. Two herbicides analyzed and proposed for use in the Plan are Imazapic and Tebuthiuron.

Imazapic (Plateau or Panoramic) is a U.S. Environmental Protection Agency approved herbicide and is approved by BLM for use on public lands. The Vegetation Treatments EIS identified two possible receptors to exposure to herbicides; occupational and public receptors. Occupational receptors include workers who mix, load, and apply herbicides. Public receptors would include the public likely to come into contact with herbicides such as ranchers, hunters, and other public land users. According to the Material Safety and Data Sheets, Plateau does not cause cancer, is unlikely to cause birth defects, and did not interfere with reproduction based on laboratory animal studies.

Tebuthiuron or commonly known as “Spike” is a U.S. Environmental Protection Agency approved herbicide and is approved by BLM for use on public lands. According to the Material Safety and Data Sheet (MSDS – Product Code 34442), Tebuthiuron does not cause cancer, is unlikely to cause birth defects, and did not interfere with reproduction based on laboratory animal studies.

3.1.15 Rangeland Management

There are portions of nine livestock grazing allotments within the Humboldt River Field Office where vegetation treatment projects are proposed. These allotments are; Cordero, Crowley Creek, Flat Creek, Horse Creek, Jordan Meadows, Kings River, Little Horse Creek, Pole Creek and Washburn. Projects are also proposed in the Zimmerman allotment which is administered by the Vale Oregon District. The proposed treatments would results in approximately 10,511 acres of new disturbance in these allotments. The following table lists the public and private acres within the project area by allotment.

ALLOTMENT	PUBLIC AC.	PRIVATE AC.	TOTAL AC
Cordero	5,374	998	6,372
Crowley Creek	49,983	479	50,462
Flat Creek	24,378	7,369	31,747
Horse Creek	39,165	701	39,866
Jordan Meadows	106,494	2,792	109,286
Kings River	144,211	6,965	151,176
Little Horse Creek	3,843	0	3,843
Pole Creek	34,348	154	34,502
Washburn	31,458	1,778	33,236
Zimmerman	30,977	1,018	31,995
Totals	470,231	22,254	492,485

Grazing management is authorized on these allotments consistent with the terms and conditions of the respective allotment specific grazing permits. Livestock grazing is authorized within the allotments as follows:

ALLOTMENT	LIVESTOCK KIND	SEASON OF USE	AUM'S
Cordero	Horses	04/01-10/31	190
Crowley Creek	Cattle	04/01-12/16	3,300
Flat Creek	Cattle	04/01-01/31	3,170
Horse Creek	Cattle	04/15-09/30	4,346
	Horses	04/15-09/14	101
Jordan Meadows	Cattle	11/01-09/30	16,868
Kings River	Cattle	03/15-11/30	12,192
Little Horse Creek	Cattle	04/01-09/30	404
	Horses	04/01-09/30	120
Pole Creek	Cattle	04/01-10/31	2,987
Washburn	Cattle	01/01-08/31	1,431
	Horses	03/20-08/31	33
Zimmerman	Cattle	04/15-09/30,11/01-11/30	7300
	Horses	04/01-10/31	42

*An Animal Unit Month (AUM) is the amount of forage needed to sustain one cow, five sheep, or one horse for a month (BLM WFO 2002).

Livestock grazing operations in the project area have been impacted by wildfires and the subsequent recovery and rehabilitation efforts. In most cases wildfires have required temporarily closing the burned portions of the allotments to livestock grazing. Wildfires have also resulted in the loss of native perennial forage, followed by an increase of cheatgrass and other non-native annual species.

3.1.16 Recreation

While no concrete data exist on recreational visits to the project area, evidence of seasonal visitation supports the notion that the project area is among the most popular areas for dispersed recreation within the District. Primary recreational activities that occur in the proposed project area are sightseeing, bird and wildlife viewing, hunting, off-road vehicle use, and hiking/walking. Vehicle use includes back country touring and exploration on the numerous primitive roads/trails found in the area. Hunting seasons in the area run from early August (antelope season) thru the end of the year. Rifle deer season, chukar, and sage-grouse seasons all usually begin in early October. Consequently, heaviest hunting usage occurs from early October until snowfall.

3.1.17 Soils

Soils information is extracted from the Soil Survey of Humboldt County Nevada, East Part, 2002, refer to maps: soil, water and wind erosion hazard potential, and percent of slope.

The cheatgrass die-off areas identified for treatment in the planning area have shown substantial affects from wind erosion. Excessive amounts of soil have blown off of

previously burned cheatgrass die-off areas towards the east. Large amounts of the soil have been caught along fence lines or other linear features along the ground surface. The majority of the topsoil in these areas has moved off-site. It is currently difficult for native vegetation to establish in these areas due to the excessive amounts of soil loss.

Roads within the planning area have contributed to soil loss and erosion within many of the wet meadow areas due to improperly placed and sized culverts.

3.1.18 Special Status Species

Both Threatened and Endangered Species (addressed in 3.2.4) and BLM designated Sensitive Species (addressed below) are considered Special Status Species. BLM policy is to provide these species with the same level of protection as provided for candidate species in BLM Manual 6840.06C, that is to “ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed”.

The following BLM Nevada designated sensitive species are discussed, because they have been observed in the proposed project area or habitat characteristics indicate they may be present on the project area.

Several databases were consulted for the presence of endangered, threatened, candidate, and BLM designated sensitive species including: the Nevada Natural Heritage Program (NNHP) database (2011), the Nevada Department of Wildlife (NDOW) Diversity database (2011), NDOW Bighorn Habitat GIS layer (2011), NDOW Raptor Nest Sites GIS layer (2011), NDOW Sage Grouse Habitat and Sage Grouse Leks GIS layers (2011), and the Great Basin Bird Observatory (GBBO) Final Atlas Data Distribution database (2011).

The following Special Status species had one or more documented occurrences in the project planning area: big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), long-legged myotis (*Myotis volans*), burrowing owl (*Athene cunicularia hypugaea*), bighorn sheep (*Ovis canadensis*), lonesome milkvetch (*Astragalus solitarius*), pygmy rabbit (*Brachylagus idahoensis*), golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), northern goshawk (*Accipiter gentilis*), Swainson’s hawk (*Buteo swainsoni*), Brewer’s sparrow (*Spizella breweri*), Lewis’s woodpecker (*Melanerpes lewis*), loggerhead shrike (*Lanius ludovicianus*), sage thrasher (*Oreoscoptes montanus*), and greater sage-grouse (*Centrocercus urophasianus*).

Bats

Several species of bats may occur in the planning area. Most bats in Nevada are year-round residents. In general terms, bats eat insects and arthropods during the warmer seasons and hibernate in underground structures during the cooler seasons. Bats commonly roost in caves, mines, outcrops, buildings, trees, and under bridges. Bats thrive where plant communities are healthy enough to support a large population of prey (Bradley et al. 2006). Healthy riparian communities with high water tables and tall

vegetation support large flying insect populations, which provide favorable foraging habitat for bats.

Big brown bat, hoary bat, and long-legged myotis occurrences were documented in the northern part of the planning area on the Nevada side (NDOW Diversity database 2011). Big brown bats inhabit various wooded and semi-open habitats and use caves, mines, and buildings for hibernation. Hoary bats prefer woodlands and both roost and hibernate in trees and occasionally rock crevices. The long-legged myotis can be found in montane forest, riparian, and desert habitats, and typically hibernates in mines and caves.

Bighorn sheep

Approximately 70,000 acres of occupied year-round bighorn sheep habitat is present in the planning area (NDOW Bighorn Habitat GIS layer 2011). An additional 11,000 acres is categorized as potential bighorn habitat. Bighorn sheep typically reside in mountainous habitat areas. Topography is the primary source of cover for bighorns, and steep broken escarpments (60% plus slope) or rock outcrops at least five acres in size with accessible terraces is optimum. Grasses have high importance in bighorn sheep diets, but forbs and shrubs are also important. Desirable bighorn habitat consists of sagebrush/bunchgrass communities, wet meadows, and riparian areas adjacent to rock outcrops and rimrock.

Burrowing Owl

Burrowing owls were documented in the planning area, with several occurrences near the proposed fuelbreak on the west side of the planning area (NDOW Diversity database 2011, and GBBO Final Atlas Data Distribution database 2011). Burrowing owls prefer open, arid, treeless landscapes with low vegetation. Burrowing mammal populations provide nesting habitat and owls choose nesting areas based on burrow availability (Floyd et al. 2007). Burrowing owls are highly adaptable and readily nest in open disturbed areas such as golf-courses, runways, and industrial areas that border suitable habitat (Neel, 1999). Dense stands of grasses and forbs within owl home ranges support populations of rodent and insect prey

Lonesome Milkvetch

Lonesome milkvetch is a perennial herb that occurs in washes and banks of shallow soils on volcanic flat-rock with *Artemisia arbuscula*, *Artemisia tridentata*, *Tetradymia glabrata*, *Poa sandbergii*, *Atriplex confertifolia*, and *Chrysothamnus nauseosus*. Growth occurs from a buried root crown and flowering typically occurs in late-spring. The population trend of this species is currently unknown. Surveys for this plant have not been conducted since 1983, but the plant is presumed extant (Morefield 2001). Only three occurrences of this species have been mapped by NNHP (NNHP database 2011) and all occur within the planning area.

Migratory Birds

Lewis's woodpecker inhabits open woodlands in Northern Nevada, and is most often found in riparian woodlands. Habitat requirements include abundant flying insects, open space for foraging, and dead tree cavities for nesting (Floyd et al. 2007). Two sightings

of Lewis's woodpecker are documented for the planning area, however, no treatments are planned in woodland areas (NDOW Diversity database 2011).

Loggerhead shrikes tend to favor arid open country with just a few perches or lookouts. Nesting occurs in isolated trees and large shrubs. Loggerhead shrikes forage mainly on small vertebrates and insects, and benefit from habitat with a diverse structure and species composition. Healthy sagebrush communities provide ideal habitat for these birds. Several observations of this bird are documented in the planning area (NDOW Diversity database 2011, and GBBO Final Atlas Data Distribution database 2011).

The sage thrasher is considered a sagebrush obligate. Habitat requirements include large expanses of tall, dense, intact sagebrush. Typically associated with big sagebrush, but may sometimes occur in shrublands dominated by greasewood or bitterbrush (Floyd et al. 2007). The planning area has multiple documented occurrences of this bird (NDOW Diversity database 2011, and GBBO Final Atlas Data Distribution database 2011).

Brewer's sparrow is also considered a sagebrush obligate, but may use other shrubland habitat types such as salt desert scrub. Brewer's sparrow is described by Floyd et al. (2007) as one of the most common birds found in northern Nevada shrublands, however, populations may be declining due to loss and degradation of sagebrush habitat. The NDOW Diversity database (2011) and the GBBO Final Atlas Data Distribution database (2011) show a combined nineteen documented occurrences for this bird in the planning area.

Pygmy Rabbit

In the Great Basin, the pygmy rabbit is typically restricted to sagebrush-grass communities located on deep loamy soils, however, they may also occur in areas of large dense rabbitbrush and greasewood. Preferred locations for burrows include broad valley floors, drainage bottoms, alluvial fans, and other areas with friable soils. A dietary study of pygmy rabbits showed dependence on sagebrush year round. Sagebrush made up about 51% of the diet in summer and 99% in the winter. Grasses and forbs were also consumed in the summer (Green and Flinders, 1980).

The NNHP database (2011) shows 4 known populations of pygmy rabbits in the planning area and the NDOW Diversity database (2011) lists an additional 2 populations. Complete surveys of the planning area have not been conducted, so additional populations of pygmy rabbit are likely present. The large expanses of preferred pygmy rabbit habitat (dense, intact stands of sagebrush on friable soils) and the presence of multiple populations within the planning area make this a priority area for protection of existing sagebrush habitat to benefit pygmy rabbits.

Raptors(Golden eagle, Ferruginous hawk, Northern goshawk, Swainsons hawk)

Golden eagles are primarily cliff nesters and would utilize the treatment area to forage for prey species such as jackrabbits and other small mammals. Golden eagles are protected under the Bald and Golden Eagle Protection Act. Nevada's golden eagle population is thought to be stable to increasing. They are widespread and frequently encountered

(Floyd et al. 2007). One nest is documented in the planning area (NDOW Raptor Nest Sites GIS layer 2011) and 16 sightings are documented throughout the planning area (NDOW Diversity database 2011, and GBBO Final Atlas Data Distribution database 2011).

Swainson's hawks typically nest in large deciduous trees adjacent to open country, especially farmland. Agricultural and sagebrush habitats are used for foraging on a wide variety of insects, small mammals, birds and reptiles. Swainson's hawk populations have been declining in the west since the early part of the century. Much of this decline is attributed to pesticide induced winter mortality in South America (Paige and Ritter 1999, Floyd et al. 2007). Two observations of Swainson's hawk in the planning area have been reported (NDOW Diversity database 2011).

The northern goshawk is a forest hawk inhabiting coniferous and aspen forests, with a preference for taller, mature stands with significant canopy closure. One sighting has been reported in the planning area at the northernmost boundary on the Oregon side (NDOW Diversity database 2011).

Ferruginous hawks are typically found in areas of sagebrush with scattered trees present in the landscape. This bird requires open country for foraging and will inhabit grasslands and shrublands while avoiding forests and steep terrain. Most likely to occur in sagebrush shrublands, but may also be found in salt desert scrub and sagebrush steppe (Floyd et al. 2007). One nest is documented as occurring in the planning area (NDOW Raptor Nest Sites GIS layer 2011).

Greater sage-grouse

The sage-grouse is a sagebrush obligate species and requires sagebrush with significant bunchgrass and forb components for survival. Sage-grouse may eat a variety of grasses, forbs and insects during the breeding season. However, they feed almost entirely on sagebrush during the winter months, selecting sagebrush with high protein levels (Paige and Ritter, 1999). Sage-grouse breed on lek sites and generally utilize the same leks in subsequent years. Leks are located in open areas (0.2 to 12 acres in size) surrounded by big sagebrush. A taller shrub component is important to provide escape cover and protection from predators. Leks are the center of year-round activity for resident sage-grouse populations and a majority of nests will be found in sagebrush habitat within 4 miles of a lek. Late brood rearing occurs in the summer and requires a sagebrush/perennial grass habitat intermingled with areas of wet meadow, riparian, or irrigated agricultural fields. Sage-grouse broods increasingly use mesic wet meadows where forbs, grasses, and insects are still available as sagebrush/perennial grass uplands mature and dry. Wet meadows and riparian areas become increasingly important during dry years and extended drought periods, and sage-grouse will move into these areas in early summer during dry conditions. Wet areas in Nevada are more critical for sage-grouse survival than in other states because Nevada uplands typically receive less annual precipitation. (NDOW 2010)

The planning area is part of the Lone Willow sage-grouse population management unit (PMU) and includes 237,000 acres of sage-grouse winter habitat, 215,000 acres of nesting habitat, and 128,000 acres of summer habitat (NDOW Sage Grouse Habitat GIS layer 2011). Sixty-four leks are documented as occurring within the planning area, with 32 of these currently classified as “active” (NDOW Sage Grouse Leks GIS layer 2011). For the last year surveyed on these 32 active leks (between 2008-2010) approximately 213 birds were observed. The planning area currently is made up of the following ranked habitat types (See Map 2b: Sage-grouse R-Value Habitat):

R-Value	Description	Acres in the Planning Area
R-0	Key habitat, sagebrush communities with good canopy and cover and desired understory of grasses and forbs	96,818
R-1	Areas with potential to produce sagebrush plant communities with desired understory of grasses and forbs, but lack sufficient sagebrush canopy	11,424
R-2	Areas of existing sagebrush plant communities with insufficient desired understory grasses and forbs	102,289
R-3	Areas with potential to produce sagebrush plant communities, but which are in various stages of Pinion/Juniper encroachment	13,412
R-4	Areas with potential to produce sagebrush plant communities, but have been converted to annual grasslands, annual forbs, or barren ground	11,820
X-3	Areas that are historic wooded areas that do not require conversion to sagebrush habitat types	0

The R-0 habitat is the highest quality habitat for sage-grouse and makes up close to a third of the planning area. R-1 and R-2 habitat also has good potential to become high quality sage-grouse habitat and makes up almost another third of the planning area. The number of active leks, the existing sage-grouse population, and the presence of large expanses of intact, dense big sagebrush and riparian areas make the planning area a high-priority for protection of existing sagebrush habitat and restoration of both upland and riparian areas.

Yellow-billed Cuckoo

Yellow-billed cuckoos are typically found in high-quality riparian habitats including mature willow, mesquite, tamarisk, hackberry, and other woody vegetation. Breeding territories are chosen based on habitat patch size, plant species composition, vegetation density, canopy cover, and distance to water (Floyd et al. 2007). This bird is considered uncommon in Nevada, and no occurrences have been documented in the planning area on the Nevada or Oregon side.

3.1.19 Vegetation

Vegetation compositions within the upper elevations of the planning area are primarily of a Wyoming big sagebrush and low sagebrush-grass mixture. The dominant ecological sites include the Claypan 14-16" (Idaho fescue, bluebunch wheatgrass, and low sagebrush), Clay Slope 8-12" (Bluebunch wheatgrass, Thurber's needlegrass and Lahontan sagebrush), Loamy Slope 10-14" (Bluebunch wheatgrass and Wyoming big sagebrush), and Granitic South Slope 12-14" (Bluebunch wheatgrass, Thurber's needlegrass, mountain big sagebrush, and bitterbrush). The majority of these sites are dominated by native grasses with a moderate percentage of shrubs and a small percentage of forbs. The majority of the upper areas have very little cheatgrass encroachment; it exists mainly along the road corridor.

Vegetation compositions within the middle elevations of the planning area generally consist of a Wyoming big sagebrush and grass mixture. The dominant ecological sites include the Loamy 10-12" (big sagebrush, bluebunch wheatgrass, and Thurber's needlegrass), Loamy 8-10" (Thurber's needlegrass, Wyoming big sagebrush), and the Droughty Loam 8-10" (Thurber's needlegrass and Wyoming big sagebrush). The majority of these sites should be dominated by native perennial grasses; however the natural stand composition has been altered in favor of the shrubs due to the lack of natural disturbance and past grazing history. There are several crested wheat seedings within the middle elevation areas. Sagebrush and native forbs have moved back into these areas slowly over time. The native perennial grass component has been mostly replaced by the crested wheatgrass in these areas. There is a greater amount of cheatgrass encroachment within these sites as they are more accessible to both humans and animals than upper elevations and many of these sites border past fire events on lower elevation areas.

The lower elevations within the planning area generally consist of a greasewood, sagebrush, shadscale, spiny hopsage and grass mixture. Dominant ecological sites include the Saline Bottom (basin wildrye, greasewood), Sandy 8-10" (big sagebrush, Indian ricegrass, and needle and thread), Sodic Terrace 8-10" (greasewood, big sagebrush, basin wildrye), Saline Floodplain (silver buffaloberry, basin big sagebrush, and basin wildrye), and the Sodic Bottom (Buffaloberry, greasewood, and basin wildrye). The majority of these sites are naturally more heavily dominated by shrub species with a sub-dominant native perennial grass understory. The current state of the lower elevations within the planning area is highly altered due to wildfire. Cheatgrass, tumble mustard, and Russian thistle are the dominant species present within the majority of lower elevations.

Large areas of the lower elevations around the flanks of the Montana Mountains are mainly cheatgrass dominated sites. These areas have been burned several times and native vegetation has not re-established on the sites. Soil loss on these sites has been exacerbated by the lack of native vegetation and cheatgrass die-off periods which allow wind and water to move the topsoil and other soil horizons offsite.

3.1.20 Visual Resource Management

Visual resource management (VRM) is a process to manage the quality of the landscape and minimize potential impacts to the visual setting resulting from development activities. The BLM has defined management classes to identify permissible levels of landscape alteration while protecting the overall visual quality of an area. The Montana Mountains Planning Area consists of two VRM management classes. The Disaster Peak Wilderness Study Area is located within the Plan boundary and has a Class I designation. The objective for class I is to preserve the existing character of the landscape. The level of change should be characteristic to the landscape and must not attract attention. There are no proposed actions within this area.

The balance of the project area is located within visual resource management class IV. The objective of a Class IV designation is to provide for management activities that require major modifications of the existing character of the landscape. Management activities may dominate the view or be the major focus of the viewers' attention. The level of change to characteristic landscape could be high; however every attempt should be made to minimize the impact of these activities. Overall the existing landscape within the Montana Mountains has been altered due to wildfires, installation of range improvements (fences and seedings), and construction of fuelbreaks, roads, and mineral exploration. However, areas within the upper elevations of the range retain many characteristics of the natural landscape. The 'wide open' vistas in the project area contrasts sharply with the typical Nevada view shed of mountains and valleys.

3.1.21 Wildlife

A wide variety of wildlife species common to the Great Basin ecosystem/Big sagebrush community type can be found adjacent to or within the treatment areas. Approximately 100 bird species and 70 mammal species can be found in habitats similar to the project area and within adjacent sagebrush sites. Common large mammal species would include mule deer (*Odocoileus hemionus*) and pronghorn antelope (*Antilocapra americana*). Other common wildlife species include black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), and badger (*Taxidea taxus*). Various small mammals, amphibians, and reptiles are also associated with the project area.

Mule Deer

Mule deer are classified as browsers, with shrubs and forbs making up the bulk of their annual diet. Approximately 246,000 acres of the planning area are classified as year-round mule deer habitat, 42,000 acres are classified as summer range habitat, and 21,000 acres are classified as crucial winter habitat (NDOW Mule Deer Habitat GIS layer 2011).

Pronghorn Antelope

Pronghorn antelope use open country with few trees and short shrubs. Wet meadows associated with springs provide succulent green forage during hot dry summer months. Antelope diets consist of forbs and grasses during the spring and early summer and shrub browse the remainder of the year. Approximately 98,000 acres are classified as year-

round pronghorn habitat, 161,000 acres are classified as summer range, and 47,000 acres are classified as winter range (NDOW Pronghorn Habitat GIS layer 201).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Proposed Actions and Alternatives

4.1.1 Air Quality

Proposed Action

The Proposed Action would be expected to affect air quality for the short term. The use of mastication equipment during implementation operations and chemical application would generate minor amounts of exhaust, emissions, and dust. Maintenance and improvement of existing roads would generate fugitive dust in the short term. These emissions would be localized and would not exceed Nevada and National Ambient Air Quality Standards. Short term minimal impacts to air quality would occur after treatment as blowing dust would continue until soil stabilizes. Prescribed burning of the Die-off areas would also not exceed Nevada and National Ambient Air Quality Standards for air quality from smoke. The dominate fuel type within areas to be burned consists of a grass and forb component. The anticipated smoke emissions from this fuel type would be; volatile hydrocarbons, carbon monoxide (CO) and carbon dioxide(CO₂) (Boubel et al., 1969). Modeling for particulate matter, estimated that annual PM₁₀ emissions from prescribed fire would be approximately 7 tons per year. This number is based on the following assumptions: one 2,000 acre prescribed fire burn per year, fuel type = grass/forb and fuel loading = 1,000 pounds per acre. Smoke emissions from prescribed fire events would comply with Nevada Division of Environmental Protection (NDEP), Smoke Management Program. Overall construction of fuelbreaks would reduce potential environmental impacts to air quality from wildfires as these fuelbreaks would limit the size and spread of wildfire.

Alternative B

Maintenance and improvement of existing roads would generate dust in the short term. These emissions would be localized and would not exceed Nevada and National Ambient Air Quality Standards. Short term minimal impacts to air quality would occur during and after treatment as blowing dust would continue until soil stabilizes. There would be no impacts from construction of fuelbreaks, greenstrips, or habitat restoration. The acres of disturbance under this alternative would be much less as the treatment area is limited to selected roads within the planning area.

Alternative C

Impacts would be somewhat increased compared to those described in the Proposed Action Section. The proposed Kings River Fuelbreak under this alternative would leave a larger footprint of disturbance and would create more dust, vehicle emissions, etc., during construction. These impacts would be expected to remain localized to the area and be short term.

No Action Alternative

No direct impacts to air quality would occur from construction of the proposed fuelbreaks as they would not be implemented. Impacts would still occur to air quality from periodic road maintenance and existing fuelbreak maintenance. The no action would cause indirect impacts as potential increases in wildfire size could occur resulting in increased smoke and dust. These impacts would be dependent on wildfire size and intensity.

4.1.2 Cultural Resources

Proposed Action

Because many of the cultural resource sites in the Montana Range are situated on or just below the ground surface, they are susceptible to disturbance or destruction by erosion and weathering processes. While these processes occur naturally, erosion can be exacerbated by human caused activities. No project activities under the proposed action are anticipated to increase erosion within unevaluated or eligible cultural site boundaries.

Areas in the vicinity of permanent and intermittent water sources have the highest potential for cultural resource sites. Cultural sites most likely to be impacted under the Proposed Action would be in the vicinity of permanent or reliable seasonal water sources. The proposed action is designed to not only prevent such erosion but to make erosion less likely by stabilizing soils through the reintroduction of native plant species less prone to contributing to the rapid spread of possible future wildfire.

Planned road maintenance under the proposed action would include using heavy equipment to blade or grade existing roadways to remove vegetation and improve access. Grading of most road surfaces would be limited to existing road width footprints and would allow for maintenance of ditches and shoulders. The Long Canyon road, The Fourth of July Meadow road and the Jordan Meadow Mountain road would be improved which includes: grading and expanding the road surface widths in areas, creation of bar ditches and shoulders, hauling road materials and gravel to surface the road. Maintenance and improvement actions that involve a road that passes through an eligible site would not proceed without implementation of a State Historic Preservation Office approved mitigation plan; likely to involve data recovery and/or monitoring. Data recovery or monitoring, if needed, would be conducted by a qualified permitted cultural resources contractor or BLM archaeologist.

Under the proposed action a mixture of re-seeding and other re-vegetation projects would be implemented. A variety of methods would be used, including a rubber tired tractor and drill seeder. Additionally, a Dixie harrow or rotary mower or other mastication equipment would be used to remove native vegetation and other vegetation from the proposed fuel break locations. Seeding may also be done using a rangeland drill seeder or broadcasted utilizing (ATV or tractor) or by aircraft. Re-vegetation actions that involve impacts to any eligible site would not proceed. Planting within eligible or unevaluated sites would involve hand planting seedlings or broadcast seeding in order to avoid cultural site impacts.

Alternative B

Planned road maintenance under the proposed action would include using heavy equipment to blade or grade existing roadways to remove vegetation and improve access. Grading of most road surfaces would be limited to existing road width footprints and would allow for maintenance of ditches and shoulders. The Long Canyon road, The Fourth of July Meadow road and the Jordan Meadow Mountain road would be improved which includes: grading and expanding the road surface widths in areas, creation of bar ditches and shoulders, hauling road materials and gravel to surface the road. Maintenance and improvement actions that involve a road that passes through an eligible site will not proceed without implementation of a State Historic Preservation Office approved mitigation plan; likely to involve data recovery and/or monitoring. Data recovery or monitoring, if needed, would be conducted by a qualified permitted cultural resources contractor or BLM archaeologist.

Alternative C

Impacts would be similar to those described under the Proposed Action section.

No Action Alternative

The effects from livestock grazing under the No Action Alternative on cultural resources would continue at the present level; soil conditions would not improve and erosion would continue to impact cultural sites. Under the No Action Alternatives current fuels conditions are expected to be maintained and possibly worsen over time. Based on these conclusions, the No Action Alternative is not expected to result in adverse effects on cultural resources over levels that currently occur today or were experienced historically in the proposed treatment area.

4.1.3 Invasive Non-Native Species

Proposed Action

There is a potential for noxious weeds and invasive, non-native species to invade project areas following treatment. The native understory grasses and forbs would for the most part remain intact and would serve to compete with the invasive annual species. Follow up application of herbicides and seeding would also control the spread of noxious weeds and invasive, non-native species. Maintenance and improvement of roads could promote the establishment and spread of noxious weeds and invasive, non-native species. These impacts would be mitigated through follow-up application of herbicides and pre-treating areas with a pre-emergent.

Indirect impacts from the proposed treatments would be the possible reduction in fire spread, which in turn would reduce the spread potential of noxious weeds and invasive non-native species following wildfire. Seeding greenstrip and Die-off areas should stabilize sites and reduce the spread of potential invasive species.

Alternative B

Maintenance and improvement of roads could promote the establishment and spread of noxious weeds and invasive, non-native species. These impacts would be mitigated

through maintenance measures that would control weeds and invasive species along roadways. Weeds and invasive species would continue to establish and spread in Die-off areas under this alternative. The potential for large wildfires persist. Weeds and invasive species would continue to establish and spread in burned areas.

Alternative C

Impacts would be similar to those described in the Proposed Action Section. The Kings River fuelbreak expansion could promote establishment and spread of weeds and invasive species. These impacts would be mitigated through maintenance measures that would control weeds and invasive species within the fuelbreak.

No Action Alternative

Under the no action impacts from noxious weeds and invasive, non-native species would continue to persist and expand along existing roads and fuelbreaks. Maintenance of existing roads and fuelbreaks would reduce the potential for noxious weed and invasive non-native species establishment and spread from these areas. Large scale wildfire has the potential to create conditions conducive for post-fire colonization of noxious weeds and invasive, non-native species. Noxious weeds and invasive, non-native species would continue to expand based on the number and size of wildfires.

4.1.4 Migratory Birds

Proposed Action

No direct impacts to migratory birds are expected because the proposed actions would be implemented outside of the migratory bird nesting season. An indirect impact to migratory birds which nest or forage in treated sagebrush habitats may occur as sagebrush would be removed throughout portions of the treatment zone. The change in vegetation would affect a small percentage of the overall habitat. Birds that prefer a lower shrub density, such as the vesper sparrow and short-eared owl may benefit from the more open area provided for foraging and nesting.

The treatment would reduce sagebrush canopy cover and density in strategic areas, which would help to slow the spread of a wildfire reducing the risk of damage to migratory bird habitat. Fuelbreaks and greenstrips would protect existing sagebrush habitats, which often convert to less desirable habitats after wildfire. Where possible, fuelbreaks would be along existing disturbance thereby lowering the amount of habitat impacted by the fuelbreak.

Habitat restoration actions should improve habitat conditions for migratory birds in the long term but may displace some species in the short term. Displacement would be limited to project construction, which would be conducted outside migratory bird nesting season and therefore should not be a substantial impact on any migratory species. An increase in plant diversity and cover of plant species would occur creating more available habitat for nesting, which may allow migratory birds to be more successful in raising young.

Alternative B

Impacts would be similar to those described in the Proposed Action Section above. However, indirect impacts would be minimal since the disturbance area is limited to existing roads within the planning area; very little additional sagebrush habitat would be disturbed.

Alternative C

Impacts would be similar to those described in the Proposed Action Section above.

No Action Alternative

Without protection provided by fuelbreaks and greenstrips, large areas of migratory bird habitat would continue to be threatened by wildfire. Existing sagebrush habitats would likely convert to less desirable habitats after wildfire, making them less suitable for many species of migratory birds. Allowing degradation of riparian areas to continue in the planning area will also make them less suitable habitat for migratory birds.

4.1.5 Native American Religious Concerns

Consultation with the Fort McDermitt Paiute and Shoshone tribe on this and other vegetation management projects has brought forth the following concerns:

- 1) The tribe is concerned with the aerial spraying of herbicides. They worry that the herbicides will contaminate springs and other water sources.
- 2) The tribe is concerned that tribal members could collect plants in areas that have been sprayed with herbicides. The council has asked that the tribe be notified two weeks before any spraying.
- 3) The tribe is opposed to any fire breaks being bladed through archaeological sites.

Proposed Action

To date, no TCPs or Executive Order 13007 sites have been identified within the Project area that might be impacted by the Proposed Action. Consultation is on-going. Fort McDermitt's concerns on herbicide applications are addressed in Section 2.3.

The proposed action would help foster the growth of native plants, which are used by the Native Americans. Habitat for sage grouse would be improved. In the long-term, the quality of riparian environments and water sources would be improved.

Alternative B

Under Alternative B there would be no adverse effects to Native American Religious Concerns.

Alternative C

Impacts would be similar to those discussed in the proposed action.

No Action Alternative

Under the no action alternative there would be no adverse effects to Native American Religious Concerns.

4.1.6 Threatened and Endangered Species

Refer to Section 4.1.9 (Fisheries), and Section 4.1.18 (Special Status Species).

4.1.7 Water Quality

Proposed Action

Under the proposed action expected impacts to water quality would occur over both the short and long term. In the short term impacts may include some sediment entering stream channels related to spring and improvement and fencing projects, installation of culverts and road maintenance activities. However, over the long term these improvements would allow water to flow more naturally creating an overall improvement in water quality in the long term.

Alternative B

Impacts under this alternative would be expected to be similar to those described in the Proposed Action Section.

Alternative C

Impacts under this alternative would be expected to be similar to those described in the Proposed Action Section.

No Action Alternative

Direct impacts would be increasing degradation to water quality due to head-cutting in creeks and springs, and limited maintenance and improvement on existing road/water crossings. Water quality would continue to be impacted in heavily grazed spring areas and creeks.

4.1.8 Wetlands and Riparian Zones

Proposed Action

The proposed action would improve specific wetland and riparian zones within the Planning Area. Improved road crossings and streambank repair in riparian zones would decrease the amount of siltation and head-cutting in the streams over the long term. Fencing of springs would lead to improved vegetation and would improve spring health providing a more continuous flow of water. Moving troughs out of spring areas would reduce the intensity of grazing on spring and meadow areas, creating improved habitat in fenced spring areas for various classes of wildlife. There would be some short term localized direct impacts during the construction phases of the proposed action which would include removal of vegetation, trenching, and soil compaction (from foot and vehicle travel). These impacts would be mitigated by seeding disturbed areas.

Alternative B

Impacts under this alternative would improve as maintenance and improvement of road crossings in riparian zones would decrease the amount of siltation and head-cutting in the streams over the long term.

Alternative C

Impacts would be the same as those described under the Proposed Action section.

No Action Alternative

If the no action alternative is selected there would continue to be impacts to wetland and riparian zones within the Planning Area. Areas where head-cutting is currently occurring would continue. Stream channels may become much more incised and pronounced. Springs would continue to be heavily used and may dry up over the long term resulting in reduced amounts of water and habitat.

4.1.9 Fisheries

Proposed Action

The proposed action would include impacts to LCT and other fish populations that could occur within the short and long term. The short term impacts would include increasing amount of sediment entering the streams during the maintenance of roads, installation of culverts, and construction of rolling dip gravel stream crossings. The long term impacts of the road improvements would have impacts to fisheries over the long term. Improved road crossings, including installation of larger culverts, and stream crossings would reduce headcutting around existing culverts and reduce siltation into streams over the long term creating better habitat for LCT and other fish within the streams.

Another project that could impact LCT and other fish populations is the application of herbicide near populated streams. The impacts could include: the slight possibility of an accidental application of herbicide into an occupied stream, the slight potential of washing herbicide into an occupied stream from a heavy rainstorm, and the slight possibility of drift into an occupied stream. However, measures have been set in place to reduce the chances of the previous impacts. The measures are: (a) no aerial application would occur within 300 feet of LCT streams, (b) no application by truck, backpack, or ATV would occur within 50 feet of LCT streams, (c) aerial application would stop 150 feet away from any existing open water sources (creeks, cattle troughs, springs, wet meadows, lakes, and ponds), (d) application by truck, backpack, or ATV would stop 50 feet away from any existing open water sources (creeks, cattle troughs, springs, wet meadows, lakes, and ponds) and (e) a BLM approved Project Inspector would be on site within the project area at all times while the herbicide is being applied and would be responsible for ensuring that the treatment is applied as directed.

Alternative B

Impacts under this alternative would be similar to those described in the Proposed Action Section.

Alternative C

Impacts under this alternative would be similar to those described in the Proposed Action Section.

No Action Alternative

With the no action alternative, impacts to salmonid species could occur if their habitat is lost in a large wildfire event. Streamside vegetation could be more vulnerable to burning which could increase water temperature and cause siltation issues within the stream. The increased water temperature can lead to oxygen depletion in the fish and a decreased ability to spawn. Siltation can make the water uninhabitable to the fish.

4.1.10 Fire and Fuels Management

Proposed Action

The proposed action would help to prevent the spread, size, and intensity of future wildfires from burning the remaining sensitive species habitat and vegetation within the Montana Mountains. Fire size and intensity would be reduced by providing effective barriers to slow or stop large wildfires and provide anchor points and safety zones for suppression resources. The area in general would become more accessible due to the proposed road improvements, allowing suppression resources to have a quicker response time. Maintenance of the existing fuelbreaks (numerous Spike treatments) would ensure their continued effectiveness of fuelbreaks to stop or slow the spread of future fire events. Changes in fire regimes and condition classes should stabilize as remaining native vegetation would be protected over time. Areas where restoration efforts take place would help to restore the natural Fire Regime and Condition Class to the mountain range.

Alternative B

This alternative would help to prevent future wildfires from burning on such a large scale. Suppression resources would have more access which would quicken response times to fire events. Under this alternative there would be a potential for increased size of wildfires would occur as fewer areas would be treated overall.

Alternative C

This alternative would have the same impacts as those described under the Proposed Action Section. The larger Kings River fuelbreak would provide a more effective barrier and would limit the potential spread of fire wicking in and up drainages such as China Creek.

No Action Alternative

If the no action alternative is selected, the potential for a large wildfire to burn into the Montana Mountains is highly likely. Fire history demonstrates there have been multiple wildfires that have threatened the range from the valley floors or the foothills. Sensitive resource values would remain at high risk for large wildfire. The potential of fire to wick up drainages to important habitat areas in the higher elevations would persist. Large areas of important wildlife habitat would remain vulnerable to loss from wildfire.

4.1.11 Geology and Minerals

Proposed Action

If on the ground activities are appropriately planned and coordinated with operators of mineral activities there would be no negative effects on mineral resources from the proposed action. Also, improving roads would likely increase local demand for mineral materials suitable for road base. Improvements to access would benefit those operators engaged in exploration or development for mineral resources in the project area. Those operators would be expected to maintain the roads they use to the standard set in their plan of operations. It is anticipated that reclamation standards for future mineral operations would be amended appropriately to support the goals of the proposed action.

The proposed action would result in an improved fuels environment which would have the effect of reducing the exposure of existing and future mineral operations to catastrophic wildfire.

Alternative B

The effects of Alternative B would be essentially identical to those of the proposed action.

Alternative C

The effects of Alternative C would be identical to those of the proposed action.

No Action Alternative

Under this alternative there would be no impacts to existing or future availability of geology and mineral resources.

4.1.12 Lands and Realty

Proposed Action

Some of the fuelbreaks would be constructed near or adjacent to existing ROWs or in areas previously disturbed. No impacts to the ROW authorizations are anticipated as a consequence of the Proposed Action. The proposed action would ensure continued public access across private lands. Fuelbreaks would help protect ROWs from potential wildfire.

Alternative B

Proposed road maintenance, construction, and maintenance would have no impacts to the ROW authorizations under this alternative, although they may be more disposed to wildfire due to the lack of fuelbreaks.

Alternative C

The impacts to the ROW authorizations are the same as those described in the Proposed Action Section.

No Action Alternative

Under the no action alternative no new fuelbreaks would make ROW authorizations more prone to wildfire.

4.1.13 Lands with Wilderness Characteristics

Not present within treatment areas and therefore will not be analyzed further.

4.1.14 Public Health and Safety

Proposed Action

Analysis for public health and safety analysis references and tiers to the “Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States, Programmatic Environmental Impact Statement” as provided for under the Council of Environmental Quality regulations at 40 CFR 1508.28, Impacts from use of herbicides are presented in Chapter 4, pages 4-1 to 4-253.

Potential health effects from application of herbicide would be minimal due to the low rates of application, the size of the areas being treated, implementation of standard operating procedures and following label restrictions. Fuelbreaks would serve to promote public safety by protecting residents and infrastructure in the area.

Road improvement and maintenance would provide the public with safer transportation routes while in the Planning Area.

Alternative B

Impacts under this alternative would be minimal. Road improvement and maintenance would provide the public with safer transportation routes while in the Planning Area.

Alternative C

Impacts would be similar to those described under the Proposed Action Section.

No Action Alternative

Under the no action alternative direct impacts would be related to exposure of herbicides to maintain existing fuelbreaks. Indirect impacts to public health and safety would occur in the event of a large, fast moving wildfire as public safety may be compromised. Without fuel treatments potential for larger fires would occur causing increased impacts to air quality. This could increase the potential for public health issues related to smoke inhalation.

4.1.15 Rangeland Management

Proposed Action

The proposed action would have both direct and indirect impacts to livestock grazing operations. Direct impacts are expected to be minimal and would include temporary short term displacement of livestock during treatment and potential closure of some project areas to grazing until the treatment objectives have been achieved.

Other impacts would include the subsequent temporary suspension of Animal Unit Months (AUMs) from the areas closed to grazing, or that require more extensive management techniques such as herding livestock to untreated portions of the allotment. The treatments may limit the level of grazing rotation or deferment during the temporary closure however, the impacts would be minimal. There are no anticipated direct impacts to livestock grazing, according to pesticide labels, from the application of Tebuthiuron, Glyphosate and Imazapic.

Indirect impact from treatments within shrub areas would be the subsequent increase in the amount of perennial grasses and forbs resulting in improved forage quality and quantity for grazing animals. The proposed treatments would reduce the potential for increased fire cycles and eliminate large-scale wildfires and lessen the need to close areas in the future. Additional impacts may include concentrated livestock grazing within seeded areas once they are established. There would be a benefit to grazing allotments and rangeland improvements since they would potentially be protected from wildfire.

Fencing meadows and spring areas would preclude livestock from accessing these areas. It may concentrate livestock on meadow areas that are not fenced.

Improved road access and maintenance may provide permittee's greater access to portions of the allotments.

Alternative B

Direct impacts to livestock grazing are expected to be minimal. Livestock in the areas during times of implementation may be displaced temporarily. Improved road access and maintenance may provide permittee's greater access to portions of their allotments.

Potential for wildfire would remain high and the loss of available forage for livestock would be reduced. Burned areas closed to grazing may increase utilization in remaining unburned areas of the allotments.

Alternative C

Impacts would be similar to those described in the Proposed Action Section. The modification of the Kings River fuelbreak may allow permitted livestock to graze the lower sections of the Planning Area for a longer time period allowing the upper areas including meadows and wetlands to be rested or to have a longer growth period before livestock grazing occurs.

No Action Alternative

Under the No Action alternative livestock grazing would continue under the current management and permitted use. No additional vegetation treatments would be implemented within the project area beyond maintaining, as necessary, the existing fuelbreaks and roads projects. This alternative has the potential to result in an increased occurrence of large-scale wildfires on rangelands. The subsequent loss of sagebrush habitat from wildfires could require rehabilitation of the burned areas and temporary

closures, reducing the availability of livestock forage. Wildfires could also result in long-term or permanent loss of native vegetation and the invasion of non-native and invasive species.

4.1.16 Recreation

Proposed Action

There would be minimal impacts to recreation from implementation of the proposed action. While the construction of fuelbreaks and road maintenance and improvements would protect recreation use areas and improve access for recreationists, the possibility of limited access and increased noise and dust levels during the operations associated with those activities exist over short periods of time.

Alternative B

Impacts to recreation from road maintenance and improvement would be the same as those described in the Proposed Action. However recreational use areas may be more prone to wildfire due to the lack of pro-active measures.

Alternative C

Impacts would be the same as those described in the Proposed Action Section.

No Action Alternative

If the no action is selected no new fuelbreaks would make recreation use areas more vulnerable to wildfire. Maintenance of existing fuelbreaks would limit the potential of wildfire to spread within areas of the planning area.

4.1.17 Soils

Proposed Action

The environmental impacts on soils could include disturbance up to 14,313 acres. Mechanical treatments (Dixie harrow and drill seeding) would scarify the soil surface to a depth of approximately four inches. Mowing and other mechanical treatments on the soil surface may compact soils when moist, but would not disturb soil horizon layers. These impacts should be minimal as there would be little back and forth travel along the same route. The application of herbicide would not disturb surface soils or alter existing soil structure. Prescribed burning would not disturb surface soils, however it would remove vegetation therefore increasing the potential for water and wind erosion. These impacts would be short term until re-vegetation of existing or seeded species establish.

Road improvements such as culverts or low water crossings may increase erosion and siltation into streams initially, however once established they should decrease the overall erosion potential in these areas.

Seeding or planting of Die-off areas would help stabilize the soils in these areas which have been eroding gradually since 1985 which was the first large fire in the area.

Replacing cheatgrass with native and selected introduced species would help restore the natural ecological balance to soil processes in these areas.

The proposed actions would maintain soil processes and promote healthy, productive and diverse plant communities. The proposed action would maintain and improve ecological condition with increased productivity, litter, soil fertility, infiltration and nutrient cycling.

Alternative B

Under this alternative approximately 217 acres of soils would be disturbed through road maintenance and improvement actions in areas previously disturbed. Road improvements such as culverts or low water crossings may increase erosion and siltation into streams initially, however once established they should decrease the overall erosion potential in these areas.

Alternative C

Impacts would be similar to those described in the Proposed Action Section. The Kings River fuelbreak expansion would increase the amount of soils disturbed overall by approximately 1,937 acres, seeding should reduce erosion potential over the long term.

No Action Alternative

Under the no action alternative there would be no new disturbance to soils as fuelbreaks would not be constructed. However, in the event of a large wildfire wind and water erosion caused by loss of vegetation in burned areas would occur. Impacts from erosion could range from low to high depending on the size of the fire and if emergency stabilization and rehabilitation treatments are implemented.

4.1.18 Special Status Species

Proposed Action

Limited impacts to sensitive species are anticipated. Minimal direct impacts to special status species are anticipated from the proposed fuel treatments and riparian restoration and may include temporary displacement of short duration during treatments/construction. Proposed fuelbreaks would protect large areas of Special Status Species habitat. Habitat improvement projects such as meadow exclosure and restoration and re-vegetation of cheatgrass die-off areas would improve habitat quality for Special Status Species.

No direct impacts to golden eagles, ferruginous hawks, northern goshawks, or Swainson's hawks are expected since proposed treatment areas are primarily used for foraging. Northern goshawks mainly use forested areas where no treatments are proposed. Indirect impacts may include increasing the available prey base for these raptors through increasing the quality of habitat for small mammals. No direct or indirect impacts to the yellow-billed cuckoo or Lewis's woodpecker are expected since no treatments are proposed in woody riparian or forested areas. Minimal direct impacts to loggerhead shrikes, sage thrashers, and Brewer's sparrows may include temporary displacement of short duration from treatment areas, impacts would be minimal since this

will occur outside of the breeding season. Indirect impacts to these species which nest and forage in treated sagebrush habitats may occur as sagebrush would be removed throughout portions of the treatment zone. The change in vegetation would affect a very small percentage of the overall habitat. Protection of existing sagebrush communities from wildfire and improving habitat quality through restoration would benefit these bird species.

Minimal direct impacts to bighorn sheep may include temporary displacement of short duration from treatment and restoration areas. The installation of exclosure fencing may also make access to riparian areas more difficult, however, wildlife friendly fence designs and the installation of steel pipe-rail fence in some areas will minimize these impacts. Indirect impacts may include protection of existing bighorn sheep habitat from wildfire and restoration of riparian areas providing more available surface water, especially during dry summer periods.

No direct impacts to bat species are expected. Indirect impacts may include an increase in insect prey availability through restoration of riparian areas and increases in available surface water.

No direct or indirect impacts to lonesome milkvetch are expected. One known population exists near the proposed Crowley-Jordan road maintenance. This population will be flagged and avoided to ensure that no impacts occur.

No direct impacts to burrowing owls are expected since proposed treatments would either take place outside of the breeding season, or proposed treatment areas would be surveyed and active burrows avoided. Indirect impacts may include improved habitat quality and an increase in available prey through increases in habitat quality for small mammals.

No direct impacts to pygmy rabbits are expected because all proposed treatment areas would be surveyed and burrows avoided. Indirect effects may include the availability of additional quality habitat for colonization and the protection of existing high-quality sagebrush habitat from wildfire. One population of pygmy rabbits is documented as occurring near the Fourth of July Meadow area. This population would benefit from the proposed exclosure and meadow restoration.

Minimal direct impacts to greater sage-grouse may occur including temporary displacement of short duration from small portions of summer brood-rearing habitat while meadow restoration is underway. Fences constructed within 3 miles of sage-grouse leks would either be marked to reduce collisions or constructed of steel pipe-rail to eliminate possibility of entanglement. Indirect effects to sage-grouse may include the protection of existing high-quality habitat from wildfire and restoration of important summer brood-rearing riparian areas. Restoring summer brood-rearing riparian areas will give sage-grouse better access to surface water, increase available insect prey base for young birds, and increase the amount of quality riparian habitat available for brood-rearing.

Alternative B

No direct impacts would be expected and indirect impacts would be minimal since disturbance would only occur on or directly around existing roads. Large areas of Special Status Species habitat would remain vulnerable to loss from wildfire and degradation of important riparian habitat would continue.

Alternative C

Impacts would be the same as those described in the Proposed Action Section.

No Action Alternative

If the no action alternative is chosen, no direct or indirect impacts to special status species would be expected. Large areas of Special Status Species habitat would remain vulnerable to loss from wildfire. Wildfire impacts to habitat would be dependent on fire size and intensity. Important riparian habitat would continue to degrade and become less suitable for Special Status species.

4.1.19 Vegetation

Proposed Action

Approximately 14,313 acres of vegetation could be altered by the proposed treatments. Impacts would be expected to be low as a majority of the fuelbreaks would be constructed in areas where vegetation has been previously disturbed by wildfire, seedings, and roads. The proposed project includes seeding with fire resistant species to ensure re-establishment of less flammable vegetation within the treatment zone. The proposed action also includes the use of herbicides to control invasive annual vegetation and promote native and seeded species. Species composition of vegetation would change within treated areas to seeded herbaceous species. Construction of the fuelbreaks would protect remaining native shrubs along the range front from loss due to wildfire.

Restoration of Cheatgrass Die-off areas would improve vegetation characteristics within the planning area, by replacing annual vegetation with native and some introduced perennial vegetation. This vegetation would stabilize soils and allow native species an opportunity to re-colonize the die-off areas. This would increase the amount of habitat available to wildlife.

Fencing of meadows would give native vegetation an opportunity to grow and proliferate around springs and stream areas. This would allow soils on these sites to stabilize and potentially improve further down the spring area.

Treatments within decadent sagebrush stands would promote species diversity and a variety of age classes. The areas treated would break up fuel continuity and reduce overall fuel loading creating breaks within the vegetation that will slow or stop an advancing wildfire. These breaks would help to create a more natural mosaic within this even aged *sagebrush sea* allowing for sagebrush regeneration and an increase in forbs and grasses within the treatment area. Remnant grass patches show site potential and would expand if sagebrush was reduced. The reduction of sagebrush would improve the watershed conditions, improve the composition and density (thus, production) of forage

for wildlife, increase habitat diversity and edge effect (ecotone) by opening up big sagebrush stands, and help improve biodiversity of species.

Alternative B

If this alternative is chosen there would be very little impacts to vegetation. Any disturbance to vegetation would be along existing disturbed (Roads) areas and it would be minimal.

Alternative C

Impacts would be similar to those described in the Proposed Action Section an additional 1,937 acres would be disturbed. Additional vegetation would be removed with the implementation of the Kings River fuelbreak. The area would be re-seeded with a mixture of native and introduced species which would provide additional forage for livestock and wildlife. This would assist in relieving grazing pressure on native vegetation on the upper west portion of the Montana Mountains allowing for an overall increase in the vegetation health over a large area.

No Action Alternative

If the no action alternative is chosen there would be no direct impacts to vegetation. In the event of a large wildfire native shrubs would be lost and annual invasive weed species would establish and spread.

4.1.20 Visual Resource Management

Proposed Action

The Visual Resource Management Class IV is the most liberal of all the management classes, and allows for extensive modification to the existing landscape. Impacts to visual resources would be low as fuelbreaks and restoration treatments would be blended with the surrounding topography (see proposed action), repeating basic elements of line, form, color, and texture. Casual observers would see few intrusions to the view shed. Fencing springs and meadow areas would create linear intrusions to the viewshed. These intrusions would be localized to small areas and would not dominate the setting.

Alternative B

There would be no direct or indirect impacts to visual resources beyond what is present.

Alternative C

Impacts would be the same as those described in the Proposed Action Section with the exception of the Kings River fuelbreak, which would cause additional linear features along the valley floor, upper elevations in the viewshed would not be impacted.

No Action Alternative

There would be no direct or indirect impacts to visual resources.

4.1.21 Wildlife

Proposed Action

Minimal direct impacts to wildlife may include temporary displacement of short duration from the proposed project area during implementation phases. Exclosure fencing may make access to riparian areas more difficult for mule deer and pronghorn antelope, however, wildlife friendly fence designs and the installation of steel pipe-rail fence in some areas will minimize these impacts. Some small rodents and/or reptiles may be lost from the mechanical treatments, however, the equipment travels slow enough that most would be able to get out of the way. Impacts from implementation of the proposed action are minimal compared to the spread of wildfire itself and to the potential result of spreading annual grasses and weeds after the fire. Indirect effects to mule deer and pronghorn antelope may include the protection of existing quality habitat from wildfire and the availability of more surface water through restoration of riparian areas.

Re-vegetation of cheatgrass die-off areas with native and select introduced species would increase the amount of habitat available for wildlife within the planning area. Riparian restoration projects would help provide additional water sources and expand the amount of high-quality habitat that is available to wildlife species. Improved access from improvement and maintenance of roads may increase hunting pressure on some wildlife species.

Alternative B

Anticipated impacts from the Road Maintenance alternative are expected to be negligible since disturbance would only take place on existing roads.

Alternative C

Impacts would be the same as those described in the Proposed Action Section.

No Action Alternative

If the no action alternative is chosen, no direct or immediate impacts to wildlife species would be expected. Large areas of wildlife habitat would remain vulnerable to loss from wildfire. Wildfire impacts to habitat would be dependent on fire size and intensity. Riparian habitat important to some wildlife species would continue to degrade and become less suitable.

5.0 CUMULATIVE IMPACT ANALYSIS

The Council of Environmental Quality (CEQ) regulations implementing NEPA defines cumulative impacts as "...[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or Non-Federal) or person undertakes such actions." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

The cumulative impact assessment areas for this EA lies within multiple watersheds (Montana Mountains Map 5: Planning Area Boundary and Cumulative Assessment Area).

Past, Present, and Reasonably Foreseeable Future Actions

On the basis of aerial photographic data, agency records and GIS analysis and interdisciplinary team discussion the following past and present actions, have been identified:

Livestock Grazing-

Livestock grazing has a long history in the region dating back to the 1800's. Today, it remains the dominant use of the entire cumulative impact assessment area. Throughout its history, ranching has remained a dispersed activity characterized by localized areas of more intensive use. The current intensity and character of livestock grazing is anticipated to remain consistent into the foreseeable future.

Mineral Resources -

The Cordero mine located in the northeastern portion of the range was an important quicksilver mine. Production of mercury is recorded as beginning in 1935 and continued sporadically until the 1990s. Also, low grade uranium showings along the west front of the range south of Horse Creek also exist. This area was explored by Chevron in the early 1980s. There is still active uranium exploration occurring in the Planning Area. There are several gravel pits within the Planning Area as well which provide road base for the surrounding area.

Currently the southern end of the Planning Area contains a 75 acre Lithium Exploration project. Mineral activities consist of drilling and creation of roads to support exploration. The southwestern edge of the assessment area contains a Uranium Exploration parcel. Current activities on the parcel consist of drilling and creation of roads to support exploration.

The level of mining activity in the assessment area would depend on future values of minerals and precious metals. It is anticipated that mining and exploration would remain at current levels within this area in the future due to the geology of the area. There are currently no pending applications for development.

Wildfire/Fuels Management- Past wildfire events have been located on the valley bottoms and flanks of the Montana Mountains. Emergency Stabilization and Rehabilitation treatments have been implemented on a case by case basis in these areas (see Section 3.1.10) where seedings would be most successful based on soils and site potential. It is anticipated that fire would continue to increase in frequency and spread in areas characterized as having cheatgrass mono-cultures. Future fires would be subject to Emergency Stabilization and Rehabilitation treatments on a case by case basis.

Fuels treatments have occurred within the Planning Area (as described in Section 3.1.10) in the past. Due to the importance in protecting critical sage-grouse and sagebrush obligate species habitat, it is anticipated that intensified fuels management and treatments would increase.

Recreation

There are many opportunities in the cumulative assessment area that offer a variety of past, present, and future recreation uses. Recreation use would generally remain at current levels of visitation as economic conditions and cost of travel may slow recreation. Predominant uses include; hunting, fishing, hiking and camping.

5.1 Cumulative Impacts

Based on the environmental analysis of direct and indirect impacts, there would be no cumulative impacts to.

Resources with similar cumulative impacts will be grouped together in this chapter.

5.1.1 Air Quality

Past and Present Actions

Ground-disturbing activities from minerals, wildfire management and recreation have generated low air quality impacts in the impact assessment area. These air quality impacts include generation of fugitive dust in areas where ground disturbing activities are occurring. Generally the impacts are short-term and are localized to specific areas and cease once the ground-disturbing activity is completed. Grazing generates little to no impact to air quality within the impact Planning Area. Wildfires within the assessment area have generated smoke and dust on a more regional level. These impacts to air quality are generally limited to when the fire is burning. However, short term blowing dust and ash can occur in areas after the fire has been suppressed and during seeding of burned areas. Re-establishment of vegetation through implementation of fire rehabilitation projects reduces impacts to air quality as vegetation is re-established and soils become stabilized.

Reasonably Foreseeable Future Actions

Impacts to air quality from reasonably foreseeable future actions would remain similar to those analyzed under past and present actions for livestock grazing. There is potential for increased ground-disturbing activities from mineral exploration which would increase dust and vehicle emissions into the air. These impacts would be localized and short term. Impacts from recreation use would be similar to past and present actions. Impacts to air quality from future wildfires should be reduced as implementation of fuel treatments would result in smaller less intense wildfire activity.

Cumulative Impact

Proposed Action

Air quality within the cumulative impact assessment area has been impacted through time. Implementation of the proposed action combined with past, present, and reasonably foreseeable actions should have low incremental impacts to air quality with fewer smoke emissions from large fires due to increased fuels management emphasis and installation of fuelbreaks to protect wildlife habitat.

Alternative B

Air quality within the cumulative impact assessment area has been impacted through time. Implementation of the proposed action combined with past, present, and reasonably foreseeable actions should have low incremental impacts to air quality. Wildfire smoke impacts would increase as fewer fuelbreaks would be built and larger fires could occur.

Alternative C

Implementing this alternative combined with past, present, and reasonably foreseeable actions should have low incremental impacts to air quality. Fire management impacts would decrease the potential for smoke impacting air quality as larger fuelbreaks would be built. Prescribed fire would increase impacts to air quality in the short term.

No Action Alternative

Implementation of the no action combined with past, present, and reasonably foreseeable actions should have minimal incremental impacts to air quality. Fire management impacts would increase as the potential for smoke impacting air quality as fewer fuelbreaks would be built and larger fires could occur.

5.1.2 Cultural Resources

Past and Present Actions

Since many Great Basin prehistoric sites are surface or near surface sites, any ground disturbing activities within site boundaries can destroy site integrity, spatial patterning and may make a determination of site function more difficult to ascertain. Datable organic features are either destroyed or contaminated.

Previous wildfire and rehabilitation, localized grazing, road construction/maintenance, camping (including that associated with hunting), and gravel pits have caused these types of impacts to cultural resources. Mining, however, has not been a major factor in the human use of the Montana's. Occasional casual use and exploratory mining does occur but impacts are minimal.

Grazing has probably affected a larger number of sites than is documented. Looting sometimes occurs but inadvertent actions from recreation, rock hounding and other off-road activities have affected cultural resources as well. The project area has been subjected to wildfires that directly and physically affected an unknown number of cultural resources through the burning, melting and fracturing of artifacts and features. Direct and indirect impacts may have occurred to cultural resources through the emergency stabilization and rehabilitation program, as well.

Reasonably Foreseeable Future Actions

Due to weather patterns common to Northern Nevada and the encroachment of highly flammable cheatgrass it is reasonable to expect that future wildfires would occur in the Montana range. These potential wildfires may impact sites through the burning of

structures, the melting or fracturing of lithic tools and debris and other destructive processes.

Recreational use (OHV use, hiking, camping, hunting, rockhounding, etc.) is expected to increase as the local population increases and these activities sometimes coincide with sensitive cultural resources causing displacement and mixed deposits of prehistoric/historic and modern debris. Recreational use can also lead to opportunistic looting of inadvertently discovered artifacts

Cumulative Impact

Proposed Action

Previous and present land management practices and other human activities (such as OHV and other recreational use) as well as reasonably foreseeable future actions as described above have contributed to the overall condition of cultural resources in the project area. However, the proposed action, if successful, would result in improved native vegetation. Since there may be a substantial improvement to the ecological condition over time, the health and vigor of certain other plants might also improve accordingly. Site vandalism and looting may be somewhat muted if the native vegetation planting under the proposed action is successful by reducing ground, and therefore artifact, visibility.

Alternative B

Implementing this alternative combined with past, present, and reasonably foreseeable actions should have low incremental impacts to cultural resources. Fewer fuelbreaks would be constructed so direct damage to cultural resources would be less. However, cultural resources would be more vulnerable to damage from wildfire.

Alternative C

Implementing this alternative combined with past, present, and reasonably foreseeable actions should have low incremental impacts to cultural resources. Fire management impacts would expose and may damage cultural resources as a larger fuelbreak would be built and prescribed fire would be used. These impacts are expected to be localized and remain low due to implementation of mitigation measures to reduce impacts. Fuelbreaks would protect and or slow the spread of wildfire protecting large areas containing cultural resources.

No Action Alternative

Failure to implement the proposed action is highly likely to increase the probability of wildfires that can have significant impacts to cultural sites (melting and shattering of obsidian artifacts for example). Since the proposed action that would lead to an improvement in native vegetation conditions would not be implemented under this alternative there may be an increasing decline in ecological condition over an extended period of time. This, in turn, could lead to a slight increase in impacts to cultural resources through soil erosion, even if the anticipated higher likelihood of wildfire is not realized. This alternative would not affect foreseeable increases in OHV and other recreational use and the resulting impacts to archaeological sites.

5.1.3 Invasive Non-native Species

Past and Present Action

Past and present actions from livestock grazing, minerals exploration and development, road maintenance, wildfire and recreation have promoted the spread of noxious weeds and invasive, non-native species within areas disturbed from these actions. In particular areas where recent road maintenance has occurred, areas of overgrazing and more intensive Off-Highway Vehicle (OHV) use areas. Implementation of mitigation measures that include fire rehabilitation and mineral related reclamation has reduced the potential for establishment and spread of invasive species.

Reasonably Foreseeable Future Actions

Impacts from reasonably foreseeable future actions to noxious weeds and invasive, non-native species are expected to remain similar to those analyzed under past and present actions. Generally it is anticipated that invasive species are expected to expand over time. Recreation use from OHV travel is likely to promote the spread of invasive non-native species and introduce additional invasive species not currently present in the area. These impacts may be mitigated through public information campaigns. Existing mineral exploration activities would continue and could promote the spread of weeds and invasive species within disturbed areas. These impacts would be dependent on the size of areas disturbed. Impacts from weeds and invasive species in these areas would be controlled based on development of mitigation measures and permit stipulations. Future fuels reduction or other vegetation projects within the assessment area have the potential to promote the spread of invasive/noxious weeds. However, mitigation measures such as follow up treatments with herbicides would be incorporated into these projects to reduce the spread of weeds. In addition, if future vegetation projects improved the health of native plant communities, these plant communities would likely be less susceptible to invasion by invasive non-native species.

Implementation of fuelbreaks would reduce the size and spread of wildfire thereby reducing the potential of establishment and spread of noxious weeds and invasive annual species.

Cumulative Impact

Proposed Action

Invasive species would incrementally establish and spread within the assessment area. Based on implementation of permit requirements, mitigation measures and the proposed action the establishment and spread of invasive species would remain low. However, intensified fuels management may promote spread of weeds and invasive species in treated areas. Counting these affects would be that large areas of habitat would be less vulnerable to wildfire and establishment of invasive species following fires.

Alternative B

Incremental impacts from past, present, reasonably foreseeable future actions and implementation of Alternative B would be the same as described in Alternative A.

However, there would be lower potential of establishment and spread of noxious weeds and invasive species as fuels management would be limited to road maintenance and maintenance of existing fuelbreaks.

Alternative C

Same as Alternative A. More intensive fuels management would create larger treatment areas and more areas vulnerable to weed and invasive species establishment due to use of prescribed fire. These impacts would remain low based on long term maintenance of fuelbreaks to control the spread of weeds.

No Action Alternative

Incremental impacts would remain low. There would be less disturbance generated from development of fuelbreak treatments. Large areas of sage-grouse habitat would remain vulnerable to wildfire. Should large fires occur, spread of weeds and invasive species may be greater.

5.1.4 Migratory Birds

Past and Present Actions

Livestock grazing has had some impacts on migratory bird habitat through grazing of vegetation. Recreation may have had a small impact on migratory birds by causing dispersal away from areas utilized by recreationists. Mineral exploration impacts to migratory bird habitat vary based on the area of disturbance and the time of year disturbance occurs. Implementation of mitigation measures to include use restrictions would reduce impacts especially during critical nesting periods. Wildfires and fuels management have affected migratory birds by destroying habitat and changing plant species composition for migratory birds within relative small defined areas.

Reasonably Foreseeable Future Actions

Impacts to migratory birds and their habitat from livestock grazing, recreation and minerals would be similar to those described under past and present actions. Wildfires would continue to affect migratory bird habitat by removing valuable cover and sources of food. Future fuel treatments would change habitat within the treatment area in sagebrush dominated vegetative community to a grass/forb dominated vegetative community. There may be a slight increase in species that prefer this type of habitat. Sometimes this type of edge is beneficial to several species and may result in an increase in birds. Implementing fuels treatments (fuelbreaks) would help protect large areas of bird migratory bird habitat by stopping or slowing the spread of wildfire.

Cumulative Impact

Proposed Action

Incremental impacts from past, present, reasonably foreseeable future action combined with Alternative A would have relative low impacts to migratory birds. Increased fuel treatments would impact migratory bird habitat within treatment areas however treatments would protect large areas of habitat from the potential of wildfire.

Alternative B

Incremental impacts would be low as impacts would center on previously disturbed areas.

Alternative C

Same as the proposed action alternative except that more potential for disturbance to migratory bird habitat would occur. These impacts would be low as proposed mitigation measures to restrict uses and surface disturbance during migratory bird season would reduce migratory bird impacts.

No Action Alternative

Under the no action there would be no impacts to habitat beyond those described in the past, present, and reasonably foreseeable future actions. However if a large wildfire were to occur within the assessment area it could alter valuable migratory bird habitats to an undesirable condition. Impacts would vary based on the size and intensity of the fire.

5.1.5 Native American Religious Concerns

Past and Present Actions

In the past much of the cumulative assessment area was utilized by the Ft. McDermitt Paiute-Shoshone Tribe for traditional uses such as food, wood and herb gathering, hunting, camp sites, sacred sites and various other uses. The historical and current uses identified within the past and present actions such as grazing, transportation and access, and wildfire have had an impact on the traditional uses of the tribe. Grazing has likely had some impact on the distribution and number of native species used for food, medicinal, and ceremonial purposes by the Tribe. Wildfires that have burned within the assessment area have also affected the number and distribution of the native species, due to the invasion of cheatgrass after a wildfire occurs. Fire rehabilitation efforts from wildfire in the past have also contributed to a decrease in native vegetation by the planting of non-native species such as Crested Wheatgrass. Maintenance of existing roads has impacted the traditional uses by giving tribal members better access to and within the Planning Area.

Mineral exploration and recreation have caused few impacts to the traditional uses associated with the tribe. There is mineral exploration within the assessment area; however it has generally been small exploration plots that do not disrupt large portions of the assessment area. Recreation has caused no known impacts to traditional uses.

Reasonably Foreseeable Future Actions

Impacts from reasonably foreseeable future actions would remain similar to those analyzed under past and present actions relating to livestock grazing, wildfire, mineral exploration, recreation and transportation and access. Future impacts associated with the planting of non-native species in fire rehabilitation efforts should decrease as the BLM incorporates more native species into seed mixes used in fire rehabilitation efforts.

Cumulative Impact

Proposed Action

There would be impacts from the proposed action on vegetation (sagebrush) used by Tribal members. These impacts would occur on a small scale across the entire assessment area. The remainder of the assessment area would have no other impacts due to the proposed action than the benefit of enhanced wildfire protection. The cumulative impacts discussed in the past, present and reasonably foreseeable future would continue at similar rates as at present. It seems unlikely, with current information, that the collective impacts combined with the proposed action would cause additional impacts to resources used by Native Americans.

Alternative B

Incremental impacts would be low. Reduced disturbance footprints in pre disturbance areas would have little effect on Native American values.

Alternative C

Similar to the Proposed Action.

No Action Alternative

If the no action is chosen there would be no impacts to Native American Religious Concerns beyond what already exists as described in the past, present, and reasonably foreseeable future actions.

5.1.6 Threatened and Endangered Species

Refer to Section 5.1.10 (Fisheries), and Section 5.1.20 (Special Status Species).

5.1.7 Water Quality

Past and Present Actions

Past and present actions and impacts have affected water quality in areas where concentrated livestock grazing has occurred, construction of roads and drill pads from mineral exploration, especially within the Horse Creek drainage, sedimentation from OHV use and wildfires near streams or creeks. These impacts are low due to as mineral exploration has had long periods of inactivity and wildfires have not occurred along major water sources.

Reasonably Foreseeable Future Actions

Increased impacts from mineral exploration on the south end of the Planning Area would still not occur along major perennial streams in the area. Fire management would continue strategies to develop fuelbreaks, protecting watersheds, Recreation and livestock grazing would remain similar to past and present actions.

Cumulative Impact

Proposed Action

Incremental impacts would include more fuelbreaks and habitat restoration projects to protect watersheds and habitat, and could increase potential for soil erosion and

associated sediment impacts to streams in the short term. These impacts would be reduced as fuelbreaks and restoration projects stabilize and re-vegetate.

Alternative B

Impacts would be similar to past and present actions. Road maintenance and improvement would reduce potential sedimentation impacts to streams.

Alternative C

Similar to the Proposed Action impacts to water would be based on the proximity of proposed actions to water. Larger disturbance from construction of fuelbreaks would occur, but due to the location of the fuelbreaks away from water impacts would be short term until re-vegetation occurs.

No Action Alternative

If the no action is chosen there would be no impacts to Water Quality beyond what already exists as described in the past, present, and reasonably foreseeable future actions.

5.1.8 Wetlands and Riparian Zones

Past and Present Actions

Past and present actions have site specific impacts in areas where livestock grazing has concentrated and areas near riparian zones where mineral exploration has occurred. These impacts remain low for livestock grazing due to managing areas to achieve standards for rangeland health, construction of exclosures to protect riparian areas and reclamation of mineral disturbance. Construction of fuelbreaks included site specific mitigation measures to avoid riparian areas. Recreational use has affected some resources in high use areas.

Reasonably Foreseeable Future Actions

Impacts from livestock grazing would remain similar to those described under past and present actions. Minerals exploration could increase in the south end of the Planning Area. These impacts should remain low as expansion into any riparian areas would be mitigated on a case-by-case bases. Fuels treatments and habitat restoration treatments would continue having short term disturbance effects however, these would occur generally outside of riparian areas. Recreation impacts would continue to varying degrees based on number of visitors and uses within near or within in riparian areas.

Cumulative Impact

Proposed Action

Incremental impacts would include more fuelbreaks and habitat restoration projects to protect riparian areas. These impacts would be reduced as fuelbreaks and restoration projects stabilize and re-vegetate.

Alternative B

Impacts would be similar to past and present actions. Road maintenance and improvement would reduce potential impacts to riparian areas.

Alternative C

Similar to the Proposed Action impacts to riparian areas would be based on the proximity of uses near and within riparian areas. Larger disturbances from construction of fuelbreaks would occur, but due to the location of the fuelbreaks away from water and development of mitigation measures to protect riparian areas, impacts would be short term.

No Action Alternative

If the no action is chosen there would be no impacts to riparian areas beyond what those described in the past, present, and reasonably foreseeable future actions.

5.1.9 Fisheries

Past and Present Actions

Past and present actions have caused impacts to fishery habitats from livestock grazing, wildfire, recreation and road maintenance. The impacts to the fishery habitats from these past and present actions, in general, include: loss of streamside vegetation, increased sedimentation, increased stream channel width, and loss of undercut streambank habitat. These impacts to fisheries have been reduced through implementation of mitigation measures. Loss of streamside vegetation due to wildfire has been mitigated by re-establishment of vegetation from fire rehabilitation projects. Impacts from mineral activities are limited as gravel pits and mining/exploration projects have not occurred within areas containing perennial streams.

Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions for livestock grazing, road maintenance, minerals exploration, and recreation use would impact fisheries. The expected impacts to the fishery habitat would be similar to the past and present actions to include: loss of streamside vegetation, increased sedimentation, increased stream channel width, and loss of undercut streambank habitat. It is anticipated that these impacts would incrementally increase overtime. Implementation of mitigation measures would reduce these impacts. Based on implementation of the proposed action, impacts from wildfire should lessen the size and intensity of wildfire.

Cumulative Impact

Proposed Action

Based on few perennial streams within the project area and implementation of mitigation measures, permit stipulations, and achieving Standards for Rangeland Health the incremental cumulative impacts on the fisheries within the assessment area would be low.

Alternative B

Incremental cumulative impacts would be low as fuels treatments would be limited to existing disturbed areas. Implementation of mitigation measures, and maintaining Standards for rangeland health would overall have few impacts to fisheries.

Alternative C

Incremental cumulative impacts would be similar to the proposed action.

No Action Alternative

If the no action is chosen there would be no impacts to fisheries beyond those described in the past, present, and reasonably foreseeable future actions. However, under the no action alternative, impacts to salmonid species could intensify from habitat lost to potential large wildfire events.

5.1.10 Fire and Fuels Management

Past and Present Actions

Past grazing practices have reduced native perennial grasses which served to increase cheatgrass establishment through competition. The elimination of most native perennial grasses increased cheatgrass establishment and promoted wildfire spread. Present grazing systems and fuelbreaks have allowed for an increase in perennial grasses which stay green longer reducing the length of the fire cycle. Past and present fuel treatments have changed fire behavior by reducing intensity and in some cases stopped fires from spreading. Recreational use may increase the potential for human caused fire within the area. Sparks from recreation vehicles and campfires have caused fires.

Reasonably Foreseeable Future Actions

Grazing impacts are expected to remain similar to those described under present actions. Development of future fuels management projects would be based on monitoring and the success of the currently proposed actions. Proposed and existing fuels treatments would be maintained to ensure fuelbreak effectiveness, which should reduce the size and intensity of future wildfires. Impacts from recreation would be similar to those described under past and present actions.

Cumulative Impact

Proposed Action

Effects from past, present, and RFFAs combined with the proposed action would reduce the size of wildfires. Sage-grouse and sagebrush obligate species habitat would be protected from large wildfire events. Infrastructure from minerals exploration activities would also be protected from wildfire.

Alternative B

Incremental impacts would result in smaller disturbance footprints from road maintenance as disturbance would occur in previously disturbed areas. Fuelbreaks may not be as effective in protecting sagebrush obligate species habitat as fuelbreaks would be located on existing roadways and may not be strategically oriented to slow the spread of wildfire. Habitat and rangeland restoration treatments would not occur. Mineral exploration areas would be protected by fuelbreaks depending on the location of infrastructure with respect to road location.

Alternative C

Incremental impacts would be similar to the proposed action alternative. More surface disturbance would occur to construct fuelbreaks.

No Action Alternative

Cumulative effects of the no action would include potential for wildfires to burn larger areas. Wildlife habitat and rangeland rehabilitation would occur on a case-by-case basis and would take longer to achieve resource benefits.

5.1.11 Geology and Minerals

Past and Present Actions

Past and present actions have generated few impacts to minerals.

Reasonably Foreseeable Future Actions

Moderate interest in mineral resource exploration and development is likely to continue throughout the Planning Area, especially the southern end. Few new impacts from livestock grazing would occur. Increased recreation use may pose safety issues in areas of active exploration. Fuelbreaks would protect any infrastructure generated from increase mineral exploration and development.

Cumulative Impact

Proposed Action

Incremental impacts would include greater protection of mineral development infrastructure as increased fuelbreak treatments would occur. If approved and implemented, elements of this project would be incorporated into the required plans for operation and reclamation of the mineral activities. No additional incremental impacts would occur beyond those described under past, present and RFFAs.

Alternative B

Incremental impacts would be dependent on location of mineral development with respect to existing roads. A lower level of infrastructure protection would occur as fuelbreaks would be smaller in width and may not be strategically located to protect specific areas. No additional incremental impacts would occur beyond those described under past, present and RFFAs.

Alternative C

Similar to the proposed alternative.

No Action Alternative

Cumulative effects of the no action would include potential for wildfires to burn larger areas. Fuelbreaks protecting minerals infrastructure would occur on a case-by-case basis and treatments would occur over a longer period of time.

5.1.12 Lands and Realty

No cumulative impacts are expected to Lands and Realty.

5.1.13 Lands with Wilderness Characteristics

Not present within any of the proposed treatment areas.

5.1.14 Public Health and Safety

Past and Present Actions

Wildfires in the past along roadways have posed public safety threats by reducing visibility from smoke. Livestock grazing and recreation poses few impacts to public safety. Fuelbreaks serve to protect the public land users in the event of fire.

Reasonably Foreseeable Future Actions

Wildfires would continue to burn within the assessment area due to human and natural causes. Construction of future fuelbreaks would serve as more effective deterrents to slow or stop wildfire and improve public safety. An increase in recreation use could increase emergency responses necessary to retrieve recreationists. This potential impact is expected to be low due to the number of people using the area. Few safety issues are caused by livestock management.

Cumulative Impact

Proposed Action

It is anticipated that past, present and reasonably foreseeable future actions when combined with the proposed action would improve safety to the public along highways and to residents in the area. Wildfires would still occur within the assessment area however fire size and intensity would decrease due to more intensive efforts to construct and maintain fuelbreaks. More recreation use would create additional impacts from human uses including increased potential for injuries. Impacts from livestock grazing are expected to be similar to those described under past and present actions.

Alternative B

Fewer fuelbreaks would be installed making areas more vulnerable to wildfire spread posing safety hazards from wildfire. All other impacts would be similar to those described under past, present, and reasonably foreseeable future actions.

Alternative C

Incremental public health and safety impacts would be similar to the proposed action. Larger fuelbreaks may provide a higher level of public safety in areas.

No Action Alternative

Cumulative effects of the no action would include potential for wildfires to burn larger areas. Fuelbreaks providing public safety would occur on a case-by-case basis and treatments would occur over a longer period of time.

5.1.15 Rangeland Management

Past and Present Actions

Past and present activities have affected livestock grazing through the removal of livestock forage within disturbed areas. Fencing areas for minerals exploration and to protect riparian areas have limited livestock access to small amounts of forage within those areas. Wildfire at the lower elevations has removed large areas of forage or restricted access to forage. Implementation of fire rehabilitation projects serve to re-establish forage vegetation and mitigate some of these impacts once vegetation is established. Recreation use has caused impacts due to damage or vandalism of range improvements and difficulties in managing livestock from fence gates being left opened.

Reasonably Foreseeable Future Actions

Impacts to grazing from reasonably foreseeable future actions would remain similar to those analyzed under past and present actions relating to minerals activity and grazing. Increasing recreation use could cause an incremental increase in damage to range improvements and complicate livestock management in areas. It is anticipated that impacts from wildfire should lessen as the size and intensity of wildfire would be reduced based on continuing to construct and maintain fuelbreaks.

Cumulative Impacts

Proposed Action

Incremental impacts would include reduced potential for wildfire spread and improving habitat conditions based on habitat restoration projects. Larger areas of rangeland would be protected. Impacts related to minerals exploration and recreation use would continue and would be dependent on the amount of mineral exploration and recreation use in the area.

Alternative B

Smaller potential to reduce wildfire spread would occur. Fuelbreaks would be limited to existing roadways and may be smaller and or not strategically placed in areas. More rangeland would be vulnerable to wildfire affecting livestock forage. Impacts from mineral exploration and recreation use would be dependent on the size, degree and the number of visitors in the area.

Alternative C

Similar to those described under the proposed action. A larger fuelbreak and seeded area proposed in Kings River Valley would provide additional protection of rangeland in that area and also provide additional forage.

No Action Alternative

If the no action is chosen there would be no impacts to grazing beyond those described in the past, present, and reasonably foreseeable future actions. The no action could result in less effective control of wildfire allowing increased acreage to burn destroying forage for livestock.

5.1.16 Recreation

Past and Present Actions

Past and present actions from livestock grazing, minerals actions, and wildfire has affected the setting and subsequent recreational experience to some users and have reduced recreational use access in areas. Fuels management projects have protected areas for recreation use from wildfire. Past minerals exploration has increased access into portions of the range.

Reasonably Foreseeable Future Actions

Impacts from reasonably foreseeable future actions would remain similar to those analyzed under past and present actions relating for livestock grazing. Increased minerals activity may close areas for recreation use but also may improve or create additional access for recreation use. Impacts to recreation use from wildfire should be reduced based on continued construction of fuelbreaks.

Cumulative Impact

Proposed Action

Incremental impacts would include protecting larger areas used for recreation through construction of fuelbreaks. All other impacts would be similar to those described under past, present, and reasonable foreseeable future actions.

Alternative B

Smaller potential to reduce wildfire spread would occur. Fuelbreaks would be limited to existing roadways and may be smaller and or not strategically placed in areas. More areas used for recreation would be vulnerable to wildfire. Impacts from mineral exploration and recreation use would be dependent on the size, degree and the number of visitors in the area. Impacts from livestock management would remain similar to past and present actions.

Alternative C

Similar to those described under the proposed action. A larger fuelbreak and seeded area proposed in Kings River Valley would provide additional protection of recreation use areas.

No Action Alternative

Under the no action, impacts to recreation would occur beyond those described in the past, present, and reasonably foreseeable future actions. The no action would result in less effective control of wildfire increasing the potential for larger recreation areas to burn.

5.1.17 Soils

Past and Present Actions

Past livestock grazing exceeded soil tolerance and the soil medium for plant growth was not maintained. The present grazing management systems have reduced past soil impacts and improved current soil resource conditions. Impacts to soils from mineral activities, and recreation, have increased the potential for soil erosion from wind and water

depending on the size of the disturbance areas. These impacts are low due to implementation of mitigation measures and application of Best Management Practices (BMPs). Wildfire has removed large areas of vegetation exposing soils to erosion. These affects have been partially mitigated through implementation of fire rehabilitation projects and areas have been protected from wildfire due to construction of fuelbreaks.

Reasonably Foreseeable Future Actions

Impacts to soils from livestock grazing are expected to be similar to those identified under present actions. Impacts to soils from mineral actions would continue to be low based on implementation of Best Management Practices and mitigation measures. Increased recreation use could increase impacts to soils from the removal of vegetation and soil compaction from OHV use. Implementation of fuelbreaks should reduce the spread and size of wildfire.

Cumulative Impact

Proposed Action

Incremental impacts would include protecting larger areas by constructing fuelbreaks. Impacts to soils from wildfire would be reduced over time. Habitat restoration projects would stabilize areas reducing soil erosion. All other impacts would be similar to those described under past, present, and reasonable foreseeable future actions.

Alternative B

Smaller potential to reduce wildfire spread would occur as Fuelbreaks would be limited to existing roadways and may be smaller and or not strategically placed in areas. Soils would be more vulnerable to wildfire impacts, especially erosion, post fire. Impacts to soils from mineral exploration and recreation use would be dependent on disturbance size and the number of visitors in the area. Impacts from livestock management would remain similar to past and present actions. No habitat restoration projects would allow areas to continue to erode.

Alternative C

Similar to those described under the proposed action. A larger fuelbreak and seeded area proposed in Kings River Valley would provide additional protection of soils in the long term. Short term erosion to soils would continue until seeded species established. Habitat restoration would stabilize soils in areas reducing soil erosion.

No Action Alternative

Impacts to soils from the no action alternative would be similar to those described in the past, present, and reasonably foreseeable future actions. Increased potential for a large wildfire event would affect soils through erosion and disruption of the soils processes. A large wildfire could eliminate vegetation, surface litter and biological crusts within the area and would increase soil erosion.

5.1.18 Special Status Species

Past and Present Actions

Livestock grazing has had some impacts on special status species in areas of concentrated grazing of vegetation. Recreation use impacts on special status species has caused dispersal of wildlife away from areas utilized by recreationists, especially near springs. Mineral activities have disturbed habitat from construction of roads and other facilities. These impacts remain low due to the size and location of disturbance within the assessment area. Also, requirements to reclaim disturbed areas restore habitat over time. Wildfire has destroyed habitat for some special status species. Construction of fuelbreaks has protected special status species habitat in a few areas by limiting the potential spread of wildfire.

Reasonably Foreseeable Future Actions

Impacts to special status species from livestock grazing are expected to be similar to those described under past and present actions. Increasing minerals exploration would impact special status species habitat based on the size of disturbed areas and when reclamation occurs. Recreation use could further impact sensitive species habitat by removing vegetation necessary to sustain habitat through OHV use. These impacts would vary in degree based on the size of disturbance and the number of recreation visitors. Continue construction of fuelbreaks should protect areas of special status species habitat from large wildfires.

Cumulative Impact

Proposed Action

Incremental impacts would include protecting larger areas of special status species habitat by constructing fuelbreaks. Impacts from wildfire would be reduced over time. Habitat restoration projects would stabilize areas and improve habitat conditions allowing sensitive species population to thrive. All other impacts would be similar to those described under past, present and reasonable foreseeable future actions.

Alternative B

Smaller potential to reduce wildfire spread would occur as fuelbreaks would be limited to existing roadways and may be smaller and or not strategically placed in areas. Special status species habitat would be more vulnerable to wildfire impacts, destroying habitat. Impacts to habitat from mineral exploration and recreation use would be dependent on disturbance size, the location of the disturbance, such as proximity to lek sites, and the number of visitors in the area. Impacts from livestock management would remain similar to past and present actions. No habitat restoration projects would continue habitat degradation in areas.

Alternative C

Similar to those described under the proposed action. A larger fuelbreak and seeded area proposed in Kings River Valley would provide additional protections to special status species habitat and help slow potential fire from “wicking up” drainages into the higher elevations containing special status species habitat. Habitat restoration would stabilize degraded areas used by special status species

No Action Alternative

Impacts to special status species from the no action alternative would be similar to those described in the past, present, and reasonably foreseeable future actions. Increased potential for a large wildfire event would increase the potential for larger wildfires. Habitat restoration treatments would not occur and habitat areas would continue to degrade.

5.1.19 Vegetation

Past and Present Actions

Past livestock grazing has had heavy impacts to the vegetation resources within the impact assessment area by eliminating or greatly reducing the primary successional understory vegetation. Cheatgrass was introduced into the area in the early 1900's. The present grazing management systems have reduced past soil impacts and improved current soil resource conditions. Implementing livestock grazing systems has reduced past impacts and improved vegetation understory conditions. The primary successional understory plants species are slowly returning and vegetation conditions are improving, but may never be able to return to their potential. Impacts to vegetation from mineral exploration, has removed vegetation from the construction of exploration roads, trenches and drill pads. Vegetation has been removed on heavily used OHV trails due to traffic.

Wildland fires have removed large areas of vegetation, exposing soils to erosion and have change plant communities and species composition. These impacts have been partially mitigated through fire rehabilitation projects. Placement of fuelbreaks have reduced the potential for wildfire spread and burning of vegetation.

Reasonably Foreseeable Future Actions

Impacts to special status species from livestock grazing are expected to be similar to those described under past and present actions. Continued existing minerals exploration would impact vegetation through removal. Impacts would be based on the size of disturbed areas and when reclamation occurs. Recreation use could further remove vegetation necessary from OHV use. These impacts would vary in degree based on the size of disturbance and the number of recreation visitors. Continue construction of fuelbreaks should protect vegetation from large wildfires.

Cumulative Impact

Proposed Action

Incremental impacts would include protecting larger areas of vegetation by constructing fuelbreaks. Impacts from wildfire would reduce over time. Habitat restoration projects would stabilize areas and improve habitat conditions suitable for sustained and resilient vegetation communities. All other impacts would be similar to those described under past, present and reasonable foreseeable future actions.

Alternative B

Smaller potential to reduce wildfire spread would occur as Fuelbreaks would be limited to existing roadways and may be smaller and or not strategically placed in areas.

Vegetation communities would be more vulnerable to wildfire impacts, allowing the potential establishment and spread of annual invasive species. Impacts from livestock management would remain similar to past and present actions. No habitat restoration projects would continue degradation of vegetation in areas.

Alternative C

Similar to those described under the proposed action. A larger fuelbreak and seeded area proposed in Kings River Valley would provide additional protections vegetation communities and help slow potential of wildfire spread. Habitat restoration would stabilize and re-vegetate degraded areas improving diversity and resiliency.

No Action Alternative

Impacts to vegetation from the no action alternative would be similar to those described in the past, present, and reasonably foreseeable future actions. Increased potential for a large wildfire event would increase the potential for larger wildfires. Habitat restoration treatments would not occur and areas would continue to degrade.

5.1.20 Visual Resource Management

No cumulative impacts are expected to Visual Resources Management.

5.1.21 Wildlife

Past and Present Actions

Past uses within planning area are livestock grazing and dispersed recreation. Livestock grazing has had some impacts on wildlife habitat through grazing of vegetation. Recreation may have had a small impact on wildlife by causing dispersal away from areas utilized by recreationists. Mineral exploration activities have had a small impact on wildlife and impacts vary by the nature and size of surface disturbance that would remove wildlife habitat. These impacts have been reduced due to implementation of mitigation measures and Best Management Practices. Wildfire has destroyed large areas of habitat. These impacts have been mitigated to a certain extent through implementation of fire rehabilitation projects. Restoration of wildlife habitat through rehabilitation projects would benefit wildlife as habitat quality improves.

Reasonably Foreseeable Future Actions

Impacts to wildlife habitat from livestock grazing and mineral activities are expected to be similar to those described under past and present actions. Increasing recreation use could further impact wildlife by removing vegetation necessary to sustain habitat. These impacts would remain low based on implementation of mitigation measures and Best Management Practices. Unrestricted OHV use makes wildlife more vulnerable to harvesting and could affect habitat based on the nature and size of OHV disturbance areas. Wildlife can also be forced to move from existing habitat into new areas based on OHV activity, noise, and use. Impacts to wildlife habitat should lessen over time from wildfire as implementation of fuel treatments should reduce the potential for large wildfires. Implementation of fuel treatments would also impact habitat within the

treatment areas as vegetative communities would change from a sagebrush dominated vegetative community to a grass/forb dominated vegetative community. There may be a slight increase in species that prefer this type of habitat. Sometimes this type of edge is beneficial to several species and may result in an increase in those species. Mineral exploration would impact wildlife habitat based on the size of disturbance. Reclamation efforts would help restore some habitat.

Cumulative Impact

Proposed Action

Implementation of the proposed action combined with past, present, and reasonably foreseeable actions should have low incremental impacts to wildlife. The proposed action should reduce the opportunity of a large wildfire and protect the existing wildlife habitat.

Alternative B

Incremental impacts would be low as impacts would center on previously disturbed areas. Smaller potential to reduce wildfire spread would occur as Fuelbreaks would be limited to existing roadways and may be smaller and or not strategically placed in areas. Wildlife habitat would be more vulnerable to wildfire impacts, destroying habitat. Impacts to habitat from mineral exploration and recreation use would be dependent on disturbance size and the location of the disturbance. Impacts from livestock management would remain similar to past and present actions. No habitat restoration projects would continue habitat degradation in areas.

Alternative C

Similar to those described under the proposed action. A larger fuelbreak and seeded area proposed in Kings River Valley would provide additional protections to wildlife habitat and help slow potential fire from “wicking up” drainages into the higher elevations. Habitat restoration would stabilize degraded areas used by many species of wildlife

No Action Alternative

Under the no action there would be no impacts to habitat beyond those described in the past, present, and reasonably foreseeable future actions. However if a large wildfire were to occur within the assessment area it could alter valuable wildlife habitats to an undesirable condition. Impacts would vary based on the size and intensity of the fire.

6.0 MITIGATION AND MONITORING

6.1 Mitigation and Monitoring During and After Treatment

Monitoring of significant cultural resources would be conducted by the BLM if determined necessary to ensure the integrity of sites eligible or unevaluated for the National Register remain intact. If monitoring cannot ensure this then mitigation in the form of data recovery may be required Provisions for appropriate monitoring and/or mitigation has been included in the Proposed Action.

All other mitigation and monitoring that would be implemented prior to or during treatment has been identified in the Proposed Action.

7.0 CONSULTATION AND COORDINATION

Agency Coordination

Nevada Department of Wildlife
U.S. Fish and Wildlife Service

Native American Consultation

A consultation letter was sent to the following Tribes on March 2, 2011:
Shoshone-Paiute Tribes of the Duck Valley Indian Reservation
Summit Lake Paiute Tribe
Fort McDermitt Paiute and Shoshone Tribe
Winnemucca Indian Colony

8.0 LIST OF PREPARERS

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Ken Loda	Geology and Mineral Resources

Nevada Department of Wildlife (Cooperating Agency)

Mark Freese	Western Region Supervising Habitat Biologist
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9.0 PUBLIC OUTREACH

The BLM coordinated with multiple interested agencies and governments early in the planning process and through public scoping of the PLAN. Four meetings and two field trips were held to receive important input which contributed towards development of the PLAN. Involvement included; the Nevada Department of Wildlife (Cooperating Agency), Nevada Division of Forestry, U.S. Fish and Wildlife Service, N-2 Grazing

Board, University of Nevada Cooperative Extension, Natural Resources Conservation Service, affected permittees and other interested publics.

A scoping letter was sent to various interested parties on August 24, 2010. The scoping letter and associated maps were made available on the WDO's NEPA web page.

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10.0 MAPS

11.0 APPENDICIES

APPENDIX I

Standard Operating Guidelines for Herbicide Application

Application Method and Requirements

Only BLM approved herbicides would be used on this project. Herbicides would be applied by truck or ATV with a boom mounted sprayer, by hand using a backpack, or by aircraft. Treatments would be applied in the fall or spring outside of migratory bird nesting season and according to label directions.

Herbicide application would be done by a State Licensed Herbicide Applicator using standard-approved application techniques.

Any and all herbicide treatments would follow BLM procedures outlined in BLM Handbook H-9011-1 (Chemical Pest Control), and manuals 1112 (Safety), 9011 (Chemical Pest Control), and 9015 (Integrated Weed Management), and would meet or exceed state label standards. Treatments would comply with the United States Environmental Protection Agency (USEPA) label.

BLM procedures and methods would be followed as set forth in the Vegetation Treatment on BLM Lands in Thirteen Western States EIS (1991); Vegetation Treatment Using Herbicide on BLM Lands in Seventeen Western States EIS (2007); Winnemucca Field Office Environmental Assessment (EA) Herbicide Application for Control of Noxious Weeds EA No. NV-020-99-10 (January 19, 1999); and Programmatic EA of Integrated Weed Management on BLM Lands EA No. NV-020-08-11 (2008).

Re-applications of any herbicide would not be less than the persistence factor identified for the herbicide.

Buffer Zones

Current buffer zones are based from consultation and coordination with the Nevada Department of Wildlife (NDOW) and the US Fish and Wildlife Service. Application of BLM approved herbicides by truck or ATV would be limited to within fifty feet from any existing open water sources (creek, cattle troughs, lakes, and ponds) and areas of exposed bedrock. Application of herbicide by backpack sprayer would not occur within fifty feet of any existing open water source. No application of herbicide by truck, backpack, or ATV would occur within fifty feet of Lahontan cutthroat trout streams. Additional buffers required when applying herbicide by aircraft would include no application within 150 feet from any existing open water sources (creek, cattle troughs, lakes, and ponds) and areas of exposed bedrock. No application of herbicide would occur within 300 feet of Lahontan Cutthroat Trout streams when applied by aircraft. Twenty foot buffer zones would be required on edges of all treated areas when herbicides are applied by aircraft to reduce the potential for drift onto non-treatment areas. All label specific requirements would be adhered to, including the avoidance of areas where groundwater is expected at five feet or less below ground surface. Based on guidelines and conservation actions identified in the “Western Association of Fish and Wildlife Agencies-Guidelines to

manage Sage-grouse populations and their habitats” (Connelly, et al, 2000), application of herbicide would not occur within ¼ mile of any known sage grouse lek sites.

Project Inspection

A BLM approved Project Inspector (PI) would be on site within the project area at all times while the herbicide is being applied and would be responsible for ensuring that the treatment is applied as directed. Chemical label directions would be followed.

Storage and Mixing of Herbicide

No hazardous materials shall be stored or disposed of on-site. Fuel, oil, and grease needed for equipment maintenance during the working period may be stored on site where no leakage or spillage will contaminate the ground. Any spilled materials will be immediately cleaned up and disposed of and the BLM PI will be notified of the spill. No equipment maintenance, rinsing, or mixing of chemicals will be performed within, or near, any stream channel or waters where chemicals, petroleum products or other pollutants from equipment may enter these waters. Herbicides would not be stored on the project site. Product label directions and Material Safety Data Sheets would be available on site for reference in case of spill or exposure. All unused herbicides or empty containers would be disposed of by the licensed herbicide applicator in accordance with the USEPA label at an approved disposal site.

Weather Restrictions

Wind velocities for herbicide applications must be 6 mph or less for aerial application and 10 mph or less for ATV or truck application in all instances to reduce drift potential. Herbicide application would not occur during precipitation events. It may occur before or after precipitation events according to label directions.

APPENDIX II: Noxious Weed List

Nevada Administrative Code (effective 10-31-05)

555.10 1. The following weeds are designated noxious weeds:

DEFINITIONS

Category "A": Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; control required by the state in all infestations

Category "B": Weeds established in scattered populations in some counties of the state; actively excluded where possible, actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur

Category "C": Weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer

Common Name

Scientific Name

Category A Weeds:

African Rue	<i>Peganum harmala</i>
Austrian fieldcress	<i>Rorippa austriaca</i>
Austrian peaweed	<i>Sphaerophysa salsula</i> / <i>Swainsona salsula</i>
Camelthorn	<i>Alhagi camelorum</i>
Common crupina	<i>Crupina vulgaris</i>
Dalmation Toadflax	<i>Linaria dalmatica</i>
Dyer's woad	<i>Isatis tinctoria</i>
Eurasian water-milfoil	<i>Myriophyllum spicatum</i>
Giant Reed	<i>Arundo donax</i>
Giant Salvinia	<i>Salvinia molesta</i>
Goats rue	<i>Galega officinalis</i>
Houndstongue	<i>Cynoglossum officinale</i>
Hydrilla	<i>Hydrilla verticillata</i>
Iberian Star thistle	<i>Centaurea iberica</i>
Klamath weed	<i>Hypericum perforatum</i>
Leafy spurge	<i>Euphorbia esula</i>
Malta Star thistle	<i>Centaurea melitensis</i>
Mayweed chamomile	<i>Anthemis cotula</i>
Mediterranean sage	<i>Salvia aethiopsis</i>
Purple loosestrife	<i>Lythrum salicaria</i> , <i>L. virgatum</i> and their cultivars
Purple Star thistle	<i>Centaurea calcitrapa</i>

Rush skeletonweed
Sow Thistle
Spotted Knapweed
Squarrose star thistle
Sulfur cinquefoil
Syrian Bean Caper
Yellow Starthistle
Yellow Toadflax

Category B Weeds:

Carolina Horse-nettle
Diffuse Knapweed
Medusahead
Musk Thistle
Russian Knapweed
Sahara Mustard
Scotch Thistle
White Horse-nettle

Category C Weeds:

Black henbane
Canada Thistle
Green Fountain grass
Hoary cress
Johnson grass
Perennial pepperweed
Poison Hemlock
Puncture vine
Salt cedar (tamarisk)
Water Hemlock

Chondrilla juncea
Sonchus arvensis
Centaurea masculosa
Centaurea virgata Lam. Var. *squarrose*
Potentilla recta
Zygophyllum fabago
Centaurea solstitialis
Linaria vulgaris

Solanum carolinense
Centaurea diffusa
Taeniatherum caput-medusae
Carduus nutans
Acroptilon repens
Brassica tournefortii
Onopordum acanthium
Solanum elaeagnifolium

Hyoscyamus niger
Cirsium arvense
Pennisetum setaceum
Cardaria draba
Sorghum halepense
Lepidium latifolium
Conium maculatum
Tribulus terrestris
Tamarix spp
Cicuta maculata

**APPENDIX III
Seeding Species and Rates**

Native Species Seeding List*

Species	Type	PLS/LBS	PLS Seeds/ft²
Gooseberry Leaf Globemallow	Forb	.1-.2	1-2
Maple Grove Flax	Forb	.5-1	4-9
Arrowleaf Balsamroot	Forb	.5-1	.5-1
Silver Lupine	Forb	.5-1	.2-.5
Palmer's Penstemon	Forb	.10-.20	1-3
Western Yarrow	Forb	.10-.20	6-12
Sandberg's Bluegrass	Grass	1-2	21-42
Bottlebrush Squirreltail	Grass	2-3	10-15
Bluebunch Wheatgrass	Grass	3-5	9-16
Canby's Bluegrass	Grass	1-2	21-42
Thurber's Needlegrass	Grass	2-4	7-14
Basin Wildrye	Grass	3-5	10-17
Indian Ricegrass	Grass	2-3	9-14
Snake River Wheatgrass	Grass	3-5	11-18
Sagebrush	Shrub	.1-.20	5-11
Spiny Hopsage	Shrub	1-2	4-7
Shadscale	Shrub	3-5	4-7

*At least one forb and two grasses from the native species list would be used.

Introduced Species Seeding List

Species	Type	PLS/LBS	PLS Seeds/ft²
Small Burnett	Forb	1-2	1-2
Lewis Flax	Forb	.5-1	3-6
Crested Wheatgrass	Grass	3-5	14-23
Siberian Wheatgrass	Grass	3-5	15-25
Forage Kochia	Sub-Shrub	.25-.50	.5-1

Notes: Seeding to establish just one species where absent-rate will be 2-3 times above rate.

Mixes and Rates:

Drill Seed Rate-20-40 PLS/ft²

Aerial and Broadcast Rate-40-80 PLS/ft²

APPENDIX IV
Fuels Management Best Management Practices for Sage-Grouse Conservation
Instruction Memorandum #FA IM 2010

1. Where applicable, design fuels treatment objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants and create landscape patterns which most benefit sage-grouse habitat.
2. Provide training to fuels treatment personnel on sage-grouse biology, habitat requirements and identification of areas utilized locally.
3. Use fire prescriptions that minimize undesirable effects on vegetation or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of hydrophobicity).
4. Ensure proposed sagebrush treatments are planned with interdisciplinary input from BLM and/or state wildlife agency biologists and that treatment acreage is conservative in the context of surrounding sage-grouse seasonal habitats and landscape.
5. Where appropriate, ensure that treatments are configured in a manner (e.g., strips) that promotes use by sage-grouse (See Connelly et al., 2000*).
6. Where applicable, incorporate roads and natural fuel breaks into fuel break design.
7. Power-wash all vehicles and equipment involved in fuels management activities prior to entering the area to minimize the introduction of undesirable and/or invasive plant species.
8. Design vegetation treatments in areas of high fire frequency to facilitate firefighter safety, reduce the risk of extreme fire behavior; and to reduce the risk and rate of fire spread to key and restoration habitats.
9. Give priority for implementing specific sage-grouse habitat restoration projects in annual grasslands first to sites which are adjacent to or surrounded by sage-grouse key habitats. Annual grasslands are a second priority for restoration when the sites not adjacent to key habitat, but within two miles of key habitat. The third priority for annual grassland habitat restoration projects are sites beyond two miles of key habitat. The intent is to focus restoration outward from existing, intact habitat.
10. As funding and logistics permit, restore annual grasslands to a species composition characterized by perennial grasses, forbs and shrubs.
11. Emphasize the use of native plant species, recognizing that non-native species may be necessary depending on the availability of native seed and prevailing site conditions.
12. Remove standing and encroaching trees within at least 100 meters of occupied sage-grouse leks and other habitats (e.g., nesting, wintering and brood rearing) to reduce the availability of perch sites for avian predators as appropriate, and resources permit.
13. Protect wildland areas from wildfire originating on private lands, infrastructure corridors and recreational areas.
14. Reduce the risk of vehicle or human-caused wildfires and the spread of invasive species by planting perennial vegetation (e.g. green-strips) paralleling road rights-of-way.
15. Strategically place and maintain pre-treated strips/areas (e.g., mowing, herbicide application and strictly managed grazed strips) to aid in controlling wildfire should wildfire occur near key habitat or important restoration areas (such as where investments in restoration have already been made).

* Connelly, J.W., M.A Schroeder, A.R. Sands, and C.E. Braun 2000. Guidelines to Manage Sage-grouse Populations and Their Habitats. Wildlife Society Bulletin 28:967-985.