

HOYT RESTORATION PROJECT ENVIRONMENTAL ASSESSMENT

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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.

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I. INTRODUCTION/PURPOSE & NEED

INTRODUCTION

The Bureau of Land Management (BLM) is proposing an integrated restoration management strategy to restore and protect the native vegetation on up to 3,820 acres within the Hoyt wildfire area, which most recently burned in August 2009 (see General Vicinity Map). The restoration strategy would include a chemical treatment to control the annual weed (cheatgrass) invasion and a reseeding effort to both reestablish the native vegetation and create a green strip fuel break along the east side of the project boundary. An Environmental Assessment (EA) regarding the proposed herbicide treatment would be prepared and a Decision Record would be signed prior to the implementation of any broadcast herbicide application. The reseeding effort would be consistent with the Normal Year Fire Rehabilitation Plan Environmental Assessment NV-030-02-07.

Non-native cheatgrass increases in abundance and density after fire, resulting in increased fuel loads and fuel continuity, which in turn creates a receptive environment for future fires. As cheatgrass continues to invade and increase after each fire, the time between fires becomes shorter. Since the native shrubs and trees are slower to re-establish after fire and need many years between fire events to complete their lifecycles, the increased fire frequency fueled by cheatgrass eventually eliminates most of the native shrubs and trees from the landscape. Cheatgrass also displaces the native grasses and herbaceous (non-woody) plants because as a winter annual, cheatgrass is able to establish earlier in the growing season than most native grasses and herbaceous plants. In this way, cheatgrass depletes soil moisture and competes against the native species until the native species are eventually crowded out of large areas as the grass-fire cycle continues. Similar to its effects on shrub and tree species, grasses and herbaceous species that are intolerant of frequent fire are eventually eliminated from the landscape by the fires carried by cheatgrass. As the grass-fire cycle is perpetuated, the fire frequency increases, eliminating native species adapted to a longer fire return intervals.

This situation currently exists in and around the area burned in the Hoyt fire of 2009. The fire return interval for this area should be every 35-100 years. Approximately 5,500 acres, burned in the 2009 Hoyt fire, has burned twice in the last ten years and over 2,000 additional acres have burned three times in the last decade. The cycle of wildfire and annual weed invasion has disrupted proper ecosystem function, increased the size, intensity and frequency of wildfire, reduced plant and animal diversity, and set the stage for invasion by secondary perennial weeds that are even more difficult to control. These losses are accelerating and costly, not only in loss and endangerment of species and ecosystems, but also in risks to human life and property and in public and private expenditures associated with wildfires.

PURPOSE & NEED

The purpose of the herbicide application is to inhibit cheatgrass germination and growth, which would interrupt the grass-fire cycle and thereby restore native plant communities and wildlife habitat.

A treatment is needed to interrupt the grass-fire cycle while there are still native plants and seeds in the area. This interruption should reduce cheatgrass establishment over a few growing seasons, allowing the native plants to successfully re-establish and persist in the burned area. The

re-establishment of native vegetation would then restore habitat needed to support native wildlife and perpetuate natural ecosystem processes.

LAND USE PLAN CONFORMANCE STATEMENT

The proposed action and alternatives described below are in conformance with the Carson City Field Office Consolidated Resource Management Plan (2001):

- LSG-1.1 Maintain or improve the condition of the public rangelands to enhance productivity for all rangeland and watershed values.
- LSG-1A Maintain a sufficient quality and diversity of habitat and forage for livestock, wildlife, and wild horses through natural regeneration and/or vegetation manipulation.
- FIR-2.1 Restore fire as an integral part of the ecosystem, improve the diversity of vegetation and to reduce fire hazard fuels.

RELATIONSHIPS TO STATUTES, REGULATIONS, AND OTHER PLANS

Carson City Field Office Fire Management Plan (2004): The proposed Hoyt Restoration Project is located in both the Churchill Ranges Fire Management Unit (NV-030-11) and the Churchill Basin Fire Management Unit (NV-030-12).

The National Fire Plan, Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001) – states in part: Fire Management and Ecosystem Sustainability - The full range of fire management activities would be used to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social components.

This EA is consistent with Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States, Programmatic Environmental Impact Statement (2007).

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) and is in compliance with applicable regulations and laws passed subsequently, including the President's Council of Environmental Quality Regulations, US Department of Interior requirements, and guidelines listed in BLM Manual Handbook H-1790-1. The EA assesses the potential environmental impacts of the Proposed Action and reasonable alternatives and documents public participation as well as the decision-making process.

II. PROPOSED ACTION AND ALTERNATIVES

PROPOSED ACTION

Location

T 22 N, R 39 E, sections 12, 13, 22-27, and 34-36

T 22 N, R 40 E, sections 7, 8, 18, and 19

T 23 N, R 39 E, sections 23 and 26

General

The proposed project has been developed in collaboration with the Carson City District Fuels staff and the Carson District Emergency Stabilization and Burned Area Rehabilitation staff.

The BLM, through the use of a service contract, would spray Imazapic at a rate of 3 ounces active ingredient or less per acre on up to 3,820 acres, most recently burned in the Hoyt Fire, in the fall/winter in order to control the spread of cheatgrass existing in the area (See Project Map).

Results of a study released in 2002 by BASF and Synergy Resource Solutions Inc. show that fire intensity can be significantly reduced in cheatgrass-infested areas treated by imazapic (Kury et al. 2002). The study found that the height of flames in treated areas can be reduced by as much as 88 percent and the rate at which the fire spreads can be lowered by as much as 95 percent, compared to untreated areas.

Research initiated by Zion National Park Service staff, U.S. Geological Survey scientist Matt Brooks and Lake Mead Restoration Biologist Curt Deuser, with funding from Joint Fire Science examined the effects of fire, seed and imazapic (Louie et al. 2005). The treatments were initiated in the fall of 2005. Preliminary results show that fire followed by a fall season imazapic application was effective in reducing cheatgrass and allowing seed naturally found in the soil and seeded native perennials to occupy the site.

Imazapic is a non-restricted use herbicide that attacks a specific enzyme found only in plants to control growth (BASF 2004, BASF 2006). Imazapic is not cancer causing and would not be expected to have any adverse effect on big game and non-game species when used as labeled (BASF 2004, BASF 2006). It is considered to be nontoxic to mammals, birds, fish, and aquatic invertebrates (BASF 2006, BASF 2005). If ingested by mammals, imazapic is rapidly excreted in the urine and feces and does not bioaccumulate in animals. In addition to the acute toxicity and irritation studies conducted with imazapic show this product to be a nontoxic and nonirritating. The potential exposure to wildlife following a labeled application of imazapic would not be expected to have any adverse effects. Imazapic is nontoxic to fish and aquatic vertebrates with a 96 hour LD50 (lethal dose for 50 percent of animals tested) value greater than 100 milligrams per liter (mg/l) (comparable to the toxicity of caffeine).

The mobility of imazapic in soil is limited (BASF 2006). Soil binding is a complex function of soil pH, texture and organic matter content. The binding of imazapic to soil has been observed to increase with time. It has been shown to have little lateral movement in the soil. The major route of imazapic loss from the soil is through microbial degradation and can remain viable in the soil for up to three years. From a total of nine soil dissipation studies conducted with imazapic, no residues were found below the 18-24 inch soil layer. After an application there is little potential for movement off the treated area. Imazapic is not volatile and binds moderately to most soil types once applied. Physical movement of the treated soil would be the most common way for significant quantities of it to move outside the treatment area.

Treatment Area

The treatment area is located on portions of the most recently burned Hoyt Fire (2009). This area also burned in 1999, 2006, and 2007. The area is rapidly converting to non-native annual grasslands.

Application Timing

The treatment window proposed would be October through December of 2010 and/or 2011. Application would be subject to resource protection measures and environmental factors. The treatment could take up to 2 weeks to complete.

Herbicide

Imazapic, which is an herbicide that has recently been approved for use by federal agencies on public lands, would be used to combat invasive/noxious weeds.

Application method

An aerial application would be used for this project. The herbicide application would either be implemented using a fixed wing aircraft or helicopter that is specially equipped for herbicide application and operated by a pilot that is qualified for herbicide application. All applicators would carry required credentials for the Department of the Interior. The application equipment and flight patterns would be designed to minimize spray drift. Application would be confined to periods when wind speed is less than 6 miles per hour. Application would not occur when the winds are out of the north due to the location of the agricultural fields located south of the project area.

Application rate

For imazapic a maximum rate of 3 ounces per acre of active ingredient would be used throughout the treatment area. Application rate would be determined based on the material that grows during the spring/summer of 2010.

Temporary project support area

Due to the remote location of this project a temporary support area might be needed during project implementation. If necessary, it would be located in or adjacent to the project area, in previously disturbed areas, and no larger than one quarter acre. The support area would serve as the base of operations where the herbicide would be mixed, refueling could take place, and temporary storage for equipment used during the project.

Timing of application

Ideally the treatment would occur after the first wetting rain in the fall of 2010 and before the existing cheatgrass seed germinates. Late October into December would be considered based on weather conditions and resource protection measures.

Duration of treatment

The treatment is expected to take approximately 2 weeks, depending on weather conditions that may affect actual hours of flight time per day.

Frequency of treatment

The project area would be treated once initially, with the potential for follow-up treatments in subsequent years depending on what the monitoring results indicate would be most effective in restoring native plant communities.

Standard Operating Procedures

- 1) Herbicides would be applied as per label instructions.
- 2) All personnel applying herbicides would either be certified by the BLM and/or the State of Nevada, or they would be supervised by a BLM or State of Nevada Certified Applicator.

- 3) Bureau or other personnel applying herbicides would use personnel protective equipment while spraying or handling herbicides.
- 4) Herbicide application operations would be suspended when wind speed exceeds 6 mph or precipitation is imminent.
- 5) Some treatment areas could be signed, if needed, indicating the herbicide used and the date of treatment. Areas which are isolated and/or receive very little use by human beings would not be signed.
- 6) During treatment, all aspects of the operation would be managed in compliance with all state laws and the chemical label requirements, including as worker and environmental safety precautions for chemical storage, mixing, and loading. The actual application rate would be measured and calibrated as needed to assure that the appropriate amount of chemical is applied per unit area of ground. The BLM would provide a certified Contracting Officers Representative (COR) to oversee the spray operation.
- 7) The project area is located in a remote section of the Stillwater Field Office. One week before the treatment is likely to occur notifications would be made to the grazing permittee, the private land owner south of the project and Magma Energy.
- 8) During treatment, a pre-application sweep of the area would be completed both by the helicopter and ground personal on site.

Monitoring

Monitoring would be conducted in the project area during and after project implementation.

Monitoring would consist of surveys to:

1. Ensure that the initial fuel treatment objectives are met,
2. Evaluate fuel load recovery,
3. Identify invasive species for subsequent treatment.

The types of monitoring to be used could include, but would not be limited to: photo-monitoring, cover, density, ocular monitoring for vigor and overall effectiveness.

NO ACTION ALTERNATIVE

Under the No Action alternative, the aerial application of herbicide would not occur. Over time the No Action alternative would most likely lead to perpetuation of the grass-fire cycle. It is expected that cheatgrass would quickly re-invade the burned area. In response to this increasing density of cheatgrass; fire frequency, fire size, and fire intensity would continue to increase, further accelerating the loss of native plant communities. The result would be a permanent vegetation type conversion from native shrublands to non-native grasslands. The continuous fuels created by the invasive grasses means that more ignition sources (i.e., lighting, cigarettes, vehicle sparks) would strike receptive fuels and start a fire. The increased frequency and size of fires would make it more difficult to control future fires and protect other values of concern from being burned, such as infrastructure, and natural and cultural resources.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter identifies and describes the current condition and trend of elements or resources in the human environment which may be affected by the Proposed Action or Alternatives and the environmental consequences or effects of the action(s).

SCOPING AND ISSUE IDENTIFICATION

Collaborative development of the proposed Hoyt project was initiated in September of 2009.

BLM staff met with the NDOW game biologist assigned to the project area September 29, 2009 at the proposed project site. The project was discussed in detail and the NDOW game biologist supported the project proposal.

Written communication including a description of the Proposed Action and a map was provided to the Fallon Paiute-Shoshone Tribe on December 11, 2009. Consultation is ongoing.

Internal scoping for the proposed Hoyt restoration project was initiated at the regularly scheduled Interdisciplinary Team meeting at the Carson District Office on November 30, 2009 and continued until February 1, 2010.

BLM issued a press release soliciting public comment on the proposed project and posted an information sheet for the project on the Carson City District Office's web page on February 8, 2010. Comments or issue identification were requested by March 1, 2010. No comments were received for this project.

A scoping letter was sent to the grazing permittees, the land owner South of the project, and Magma Energy on February 5, 2010. The letter included a summary and maps of the proposed project. Comments were requested by March 1, 2010. No comments were received for this project.

PROPOSED ACTION

General Setting

The proposed project area is located north of Edwards Creek Valley and east of Shoshone Pass, in Churchill County, Nevada. The vegetation in the project area is in the process of being converted from a shrubland with perennial bunchgrasses and forbs to non-native annual grasslands. Elevation ranges between 5,100 and 6,100 feet. The terrain varies from valley bottom to ridge line. The average precipitation is 8 to 10 inches per year.

SUPPLEMENTAL AUTHORITIES

Appendix 1 of BLM's NEPA Handbook (H-1790-1) identifies Supplemental Authorities that are subject to requirements specified by statute or executive order and must be considered in all BLM environmental documents. The table below lists the Supplemental Authorities and their status in the project area. Supplemental Authorities that may be affected by the Proposed Action are further described in this EA.

Supplemental Authority*	Not Present**	Present/Not Affected	Present/May Be Affected***	Rationale and/ or Reference Section
Air Quality		X		Churchill County has not been designated as a non-attainment area. Aerial spraying of herbicides within the project area would not affect this designation.
Areas of Critical Environmental Concern	X			Resource not present.
Cultural Resources	X			Resource not present.
Environmental Justice	X			Resource not present.
Farm Lands (prime or unique)	X			Resource not present.
Forests and rangelands (HFRA Projects Only)	X			Resource not present.
Human Health and Safety			X	Carried through EA.
Floodplains	X			Resource not present.
Invasive, Nonnative and Noxious Species	X			Resource not present.
Migratory Birds			X	Carried through EA.
Native American Religious Concerns	X			Resource not present.
Threatened and/or Endangered Species	X			After consulting with the BLM wildlife biologist and the USFWS website for Nevada, there are no federally listed threatened or endangered species within the project area (Appendix A) (http://www.fws.gov/nevada/protected_species/species_by_county.html).
Wastes, Hazardous or Solid	X			Resource not present.
Water Quality (Surface/Ground)	X			Resource not present.
Wetlands/Riparian Zones	X			Resource not present.
Wild and Scenic Rivers	X			Resource not present.
Wilderness	X			Resource not present.

*See H-1790-1(January 2009) Appendix 1 Supplemental Authorities to be Considered.

**Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.

***Supplemental Authorities determined to be Present/May Be Affected must be carried forward in the document.

RESOURCES OR USES OTHER THAN SUPPLEMENTAL AUTHORITIES

The following resources or uses, which are not Supplemental Authorities as defined by BLM’s Handbook H-1790-1, are present in the area. BLM resource specialists have evaluated the potential impact of the Proposed Action on these resources and documented their findings in the table below. Resources or uses that may be affected by the Proposed Action are further described in this EA.

Resource or Issue	Present/Not Affected#	Present/May Be Affected##	Rationale
Horse Management Area	X		Due to the use of aircraft, wild horses would not be expected to be in the project area during implementation.
General Wildlife		X	Carried through EA.
Sensitive Species, BLM		X	Carried through EA.
Livestock Grazing		X	Carried through EA.
Soils		X	Carried through EA.
Fire Management		X	Carried through EA.
Vegetation		X	Carried through EA.

#Resources or uses determined to be Present/Not Affected need not be carried forward or discussed further in the document.

##Resources or uses determined to be Present/May Be Affected must be carried forward in the document.

RESOURCES PRESENT AND BROUGHT FORWARD FOR ANALYSIS (All Resources)

The following resources are present in the area and may be affected by the Proposed Action.

III.A. Fire Management

Affected Environment

The proposed Hoyt Restoration Project is located in both the Churchill Ranges Fire Management Unit (NV-030-11) and the Churchill Basin Fire Management Unit (NV-030-12). Aggressive initial attack is initiated with the intent of holding all unplanned ignitions to 250 acres or less, 90% of the time in areas dominated by cheatgrass or susceptible to post fire cheatgrass invasion.

Approximately 5,500 acres, burned in the 2009 Hoyt fire, has burned twice in the last ten years and over 2,000 additional acres have burned three times in the last decade. As cheatgrass continues to invade and increase after each fire, the time between fires becomes shorter. Since the native vegetation is slower to re-establish after fire, the increased fire frequency fueled by cheatgrass eventually eliminates most of the native shrubs and grasses from the landscape. Cheatgrass also displaces the native grasses and herbaceous (non-woody) plants because as a winter annual, cheatgrass is able to establish earlier in the growing season than most native grasses and herbaceous plants. In this way, cheatgrass depletes soil moisture and competes against the native species until the native species are eventually crowded out of large areas as the grass-fire cycle continues.

Fire regime condition class (FRCC) describes the degree of fire regime departure from historical fire cycles due to fire exclusion and other influences (selective timber harvesting, grazing, insects and disease, the introduction and establishment of non-native plants). FRCC identifies

changes to key ecosystem components such as species composition, structural stage, tree or shrub stand age, and canopy closure. It characterizes the landscape by five “Fire Regime Groups” and three “Fire Condition Classes”. Wildfire risk conditions are identified by the Fire Regime Groups and are measured by the Fire Condition Classes. Specifically, the natural historic frequency and severity of fire within an ecosystem is the identified Fire Regime, and Fire Condition Class identifies the departure of current conditions from the historical reference condition. The National Fire Plan and Healthy Forest Restoration Act dictate that the federal agencies use FRCC as criteria for planning projects.

The project area can be characterized by Fire Regime Group III which has a natural historical fire frequency of 35-100 years and a mixed fire severity. The condition class for the project area can be characterized as primarily Condition Class 3, meaning the fire regimes on the landscape have been significantly altered from historical ranges and vegetation attributes have been significantly altered from the historical range of attributes.

Environmental Consequences

Proposed Action:

Research conducted in many areas throughout the Great Basin and Intermountain West found that cheatgrass can be reduced by more than 90 percent the first year after treatment (BASF 2003) with fall application of Imazapic. The reduction in cheatgrass would move the condition class from a rating of 3 to 1, meaning the project area would be more in line with historical fire regimes and the risk of losing key ecosystem components would be lower. Increasing the fire return interval would reduce the frequency and severity of wildfires in project area.

No Action Alternative:

Under the No Action Alternative, the condition of the understory species would continue to decline with the increase of the cheatgrass seed bank. The areas represented as Condition Class 3 would increase creating further departure from the historical fire regime. The risk of losing key ecosystem components would continue as the area moves toward a monoculture of cheatgrass.

III.B. Human Health and Safety

Affected Environment

The health and safety of the public, contractors, and agency personnel are of the utmost importance. Two issues have been identified for further analysis. The first concerns hazards directly related to herbicide application operations that could affect the public, contractors, and agency personnel involved in the project. The second concerns the impacts of the proposed treatment on future fire frequency and intensity.

Environmental Consequences

Proposed action

The proposed action, the aerial herbicide application of imazapic on 3,820 acres, is expected to take 2 weeks. Due to the remoteness of the project area, public contact is not expected. A pre-treatment sweep of the treatment area would be used to insure the area is clear before daily implementation. All direct hazards associated with this operation would be mitigated. It is expected an end product contract would be used to implement the proposed action. During implementation, all aspects of the operation would be managed in compliance with all state laws

and the chemical label requirements, including all worker and environmental safety precautions for chemical storage, mixing, and loading. The actual application rate would be measured and calibrated as needed to assure that the appropriate amount of chemical is applied per unit area of ground. The BLM would provide a certified Contracting Officers Representative (COR) to oversee the spray operation.

Long-term, the herbicide treatment would interrupt the grass-fire cycle, which would prevent the escalation of fire frequency, fire size, and fire intensity. By restoring the natural fire regime, firefighters, nearby landowners, and the public would not be exposed to the hazards associated with increased fire frequency, fire size, and fire intensity.

No Action Alternative:

Under the No Action Alternative, the treatment would not occur. All direct hazards associated with herbicide application would not occur. The herbicide treatment would not interrupt the grass-fire cycle, which would potentially escalate fire frequency, fire size, and fire intensity.

III.C. General Wildlife

Affected Environment

Based on the **Southwest Regional GAP Analysis Project**, the Nevada Department of Wildlife’s Wildlife Action Plan (2006) characterized Nevada’s vegetative land cover into 8 broad ecological system groups and linked those with Key Habitat types, which are further refined into Ecological Systems characterized by plant communities or associations (USGS 2005). Key Habitat types and associated Ecological Systems (plant communities) that potentially would be restored over time are displayed in Table 1. A few of the potential wildlife species that could be supported by the restored habitat is displayed in Table 2.

Because of the recent fire and large areas of cheatgrass invasion, the plant communities associated with the Proposed Action contain very little vegetation to support viable wildlife communities other than invertebrates. Cheatgrass (*Bromus tectorum*) is an invasive annual grass that displaces native perennial shrub, grass, and forb species because of its ability to germinate quicker and earlier in the year than native species, thus outcompeting natives for water and nutrients. Cheatgrass is also adapted to recurring fires that are perpetuated in part by the fine dead fuels that it leaves behind. In general, native plants have a difficult time thriving in these altered fire regimes. However, the proposed herbicide treatment, if successful, would facilitate restoration of the plant communities that existed prior to cheatgrass invasion and non-historic fire cycles.

Big Game

No big game species have occupied ranges overlapping the treatment area. Identified potential desert bighorn sheep habitat does exist (NDOW 2006a, 2000b, 2007).

Table 1: Key habitat types and plant communities that may be potentially restored (Based on SWReGAP descriptions (USGS 2005)).

Key Habitat and Associated Ecological Systems	Potential Plant Species	Scientific name
<i>Key Habitat – Sagebrush</i>	Antelope Bitterbrush	<i>Purshia tridentata</i>

Key Habitat and Associated Ecological Systems	Potential Plant Species	Scientific name
<i>Key Habitat – Grasslands</i>	Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>
	Black Sagebrush	<i>Artemisia nova</i>
<i>Ecological System – Great Basin Xeric Mixed Sagebrush Shrubland</i>	Bud Sagebrush	<i>Picrothamnus desertorum</i>
	Desert Needle Grass	<i>Achnatherum speciosum</i>
<i>Ecological System – Inter-mountain Basins Big Sagebrush Shrubland</i>	Greasewood	<i>Sarcobatus vermiculatus</i>
	Great Basin Wildrye	<i>Leymus cinereus</i>
<i>Ecological System – Inter-mountain Basins Semi-Desert Grassland</i>	Horsebrush	<i>Tetradymia</i> spp.
	Idaho Fescue	<i>Festuca idahoensis</i>
	Indian Ricegrass	<i>Achnatherum hymenoides</i>
	Juniper Species	<i>Juniperus</i> spp.
	Low Sagebrush	<i>Artemisia arbuscula</i>
	Mormon Tea	<i>Ephedra</i> spp.
	Needle And Thread	<i>Hesperostipa comata</i>
	Rabbitbrush	<i>Ericameria</i> spp.
	Rubber Rabbitbrush	<i>Ericameria nauseosa</i>
	Saltbush	<i>Atriplex</i> spp.
	Sandberg Bluegrass	<i>Poa secunda</i>
	Shadscale Saltbush	<i>Atriplex confertifolia</i>
	Spiny Hopsage	<i>Grayia spinosa</i>
	Squirreltail	<i>Elymus elymoides</i>
Western Wheatgrass	<i>Pascopyrum smithii</i>	
Wyoming Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>Wyomingensis</i>	
Yellow Rabbitbrush	<i>Chrysothamnus viscidiflorus</i>	

Table 2: Potential BLM designated sensitive species, migratory bird species of conservation concern (as per IM 2008-050), and general wildlife that may use components of the restored habitat.

Key Habitats	Potential Wildlife Species	Scientific name	BLM Sensitive Species	Listed as per IM 2008-050 (December 18, 2007)	Primary Habitat Use Affected
<i>Sagebrush Grasslands</i>	Black-throated Sparrow	<i>Amphispiza bilineata</i>	No	N/A	Increased nesting cover
	Brewer's Sparrow	<i>Spizella breweri</i>	No	Yes	Increased nesting cover
	Dark Kangaroo Mouse	<i>Microdipodops megacephalus</i>	No	N/A	Increased food sources
	Desert Horned Lizard	<i>Phrynosoma platyrhinos</i>	No	N/A	Increased cover
	Great Basin Collared Lizard	<i>Crotaphytus bicinctores</i>	No	N/A	Increased food sources
	Great Basin Pocket Mouse	<i>Perognathus parvus</i>	No	N/A	Increased food sources
	Great Basin Rattlesnake	<i>Crotalus viridis lutasus</i>	No	N/A	Food sources and thermal cover
	Kit Fox	<i>Vulpes macrotis</i>	No	N/A	Increased prey base
	Long-nosed Leopard Lizard	<i>Gambelia wislizenii</i>	No	N/A	Cover and increased food sources

Key Habitats	Potential Wildlife Species	Scientific name	BLM Sensitive Species	Listed as per IM 2008-050 (December 18, 2007)	Primary Habitat Use Affected
	Pale Kangaroo Mouse	<i>Microdipodops pallidus</i>	No	N/A	Increased food sources
	Sage sparrow	<i>Amphispiza belli</i>	No	Yes	Increased nesting cover
	Sagebrush Vole	<i>Lemmyscus curtatus</i>	No	N/A	Increased winter food sources and cover for burrow entrances
	Burrowing owl	<i>Athene cunicularia</i>	Yes	Yes	Increased prey base
	California myotis	<i>Myotis californicus</i>	Yes	N/A	Increased prey base
	Ferruginous hawk	<i>Buteo regalis</i>	Yes	Yes	Increased prey base
	Fringed myotis	<i>Myotis thysanodes</i>	Yes	N/A	Increased prey base
	Golden eagle	<i>Aquila chrysaetos</i>	Yes	Yes	Increased prey base
	Greater Sage-grouse	<i>Centrocercus urophasianus</i>	Yes	Yes	Help restore late summer/winter
	Loggerhead shrike	<i>Lanius ludovicianus</i>	Yes	Yes	Increased esting cover
	Long-eared myotis	<i>Myotis evotis</i>	Yes	N/A	Increased prey base
	Pallid bat	<i>Antrozous pallidus</i>	Yes	N/A	Increased prey base
	Northern Harrier	<i>Circus cyaneus</i>	No	Yes	Increased prey base
	Prairie Falcon	<i>Falco mexicanus</i>	Yes	Yes	Increased prey base
	Pygmy Rabbit	<i>Brachylagus idahoensis</i>)	Yes	N/A	Increased shrub cover and food sources
	Small-footed myotis	<i>Myotis ciliolabrum</i>	Yes	N/A	Increased prey base
Swainson hawk	<i>Butea swainsoni</i>	Yes	Yes	Foraging habitat	

Environmental Consequences

Proposed Action:

The environmental risks of imazapic were analyzed in the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007). The risk categories for terrestrial animals were direct spray, off-site drift (wind erosion), indirect contact with foliage after direct spray, ingestion of contaminated vegetation or prey, and runoff, which includes percolation to the root zone, at typical and maximum application rates. The Proposed Action would not exceed the maximum application rates.

The risk assessment concluded that in general this herbicide, even at high doses, does not adversely affect terrestrial animals, including invertebrates, as it is rapidly metabolized in urine

and feces and does not bioaccumulate in animal tissue. The document did state that during pregnancy mammals may be more at risk and long-term exposure had negative effects on birds. However, application of imazapic would occur in the fall within a two week period, which is outside of the gestation period for most animals that may use the project area; therefore these risks would be negligible (BLM 2007b, BLM 2007c).

Herbicides could come into contact with and impact non-target plants through drift, runoff, wind transport, or accidental spills and direct spraying. Potential impacts include mortality, reduced productivity, and abnormal growth. However, implementing the associated standard operating procedures outlined in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007) would minimize or eliminate these risks to wildlife habitat adjacent to the project site.

The Proposed Action, if successful, would benefit species dependent on sagebrush ecosystems for food and cover as well as species that prey on wildlife that inhabit this ecosystem by diminishing or preventing the current invasive annual grass fire cycle that decreases plant diversity and changes habitat structure. Cheatgrass would be diminished in its vigor, which would allow native bunchgrasses that are in the seedbank to increase. Over time this would return the area to an historic fire cycle (35-100 years) that should create a mosaic of shrub heights and spacing, which should lead to greater wildlife diversity and abundance.

No Action Alternative:

Without imazapic treatment, cheatgrass would likely continue to outcompete native vegetation. Continued fires in the area may spread cheatgrass to surrounding areas, thus eliminating additional habitat that would otherwise be available to wildlife species that utilize sagebrush habitats for food, forage, or cover. Therefore, no benefits could be realized for wildlife species dependent on a healthy, diverse sagebrush vegetation community.

III.D. Livestock Grazing

Affected Environment

Current permitted use for the Clan Alpine Allotment authorizes 927 cattle between May 1 and March 31 for a total of 10,210 AUM's. The allotment is divided into eight pastures and set up with a rotational grazing schedule. The Shoshone pasture, where the Hoyt Fire occurred, is grazed every other year under this management system.

Environmental Consequences

Proposed Action:

Permitted livestock use in the Clan Alpine Allotment would continue to be 927 cattle from May 1 until March 31 for a total of 10,210 AUMs. Livestock would benefit through greater vegetation diversity and an increase in the more palatable native bunchgrasses.

No Action Alternative:

Under the No Action Alternative, the project area would remain untreated. The amount of forage would likely decrease over time due to the increase in cheatgrass cover and density. The fire return interval would continue to shorten resulting in a conversion to annual grassland. With the increase in cheatgrass and the subsequent decrease in shrub and herbaceous growth, there would also be an increase in competition for the remaining forage between livestock and wildlife. As this competition increases, livestock reductions would have to be considered to

maintain the current rangeland health on the Clan Alpine Allotment. Reductions in the number of livestock and AUM's would also be more likely with this alternative, due to the buildup of cheatgrass and resulting increased risk of intense wildfires.

III.E. Migratory Birds

Affected Environment

On January 11, 2001, President Clinton signed Executive Order 13186 (Land Bird Strategic Project) placing emphasis on conservation and management of migratory birds. They are not protected under the Endangered Species Act, but most are protected under the Migratory Bird Treaty Act of 1918. Management for these species is based on Instruction Memorandum – IM 2008-050 dated December 18, 2007. The list of migratory species of concern that occur or are likely to occur in the project area is shown in Table 2 (BLM 2007a).

Invasive grasses, and in turn changing fire regimes, are one of the primary threats to the Intermountain West sagebrush habitats that some migratory birds are dependent upon (Rich et al. 2004). Fires are now fueled by the presence of non-native annual grasses, primarily cheatgrass, which increases fire intensity, rate of spread, and fire frequency. Non-native invasive annual grasses tend to return in higher densities after fire leading to an unnatural fire regime and less diverse vegetation community. Non-native annual grasses burn more frequently and at larger scale than the native vegetation. The project area is a prime example of this. Primarily cheatgrass invasion has changed a 35-100 year fire cycle in the vicinity of the project area to a 3-5 year cycle. This has decreased or eliminated functional habitat for migratory birds inhabiting this ecological system (See General Wildlife Affected Environment section and Tables 1 and 2 for detailed plant community and potential migratory species that may be affected information).

Environmental Consequences

Proposed Action:

The proposed action would have no negative effects to migratory birds because the treatment would occur outside of the breeding/nesting season, current habitat is marginal or nonexistent because it has been destroyed by fire, and imazapic does not cause adverse effects in birds exposed to short-term acute exposures (BLM 2007b).

No Action Alternative:

With no treatment, cheatgrass would continue to outcompete native vegetation. Continued fires in the area may spread cheatgrass to surrounding areas, thus eliminating additional habitat that would otherwise be available to sagebrush dependent migratory birds. Therefore, no action may lead to declines in abundance for some migratory birds over time.

III.F. Sensitive Species, BLM

Affected Environment

The proposed action, if successful, is in line with recommended conservation actions from BLM Manual 6840 defines sensitive species as native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:

1. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range, or

2. The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

A list of sensitive animal and plant species associated with BLM lands in Nevada was signed in 2003 (BLM 2003). Many of these species that depend on sagebrush ecosystems are currently impacted through decreased plant species diversity and increased fire frequency within the project area. No BLM Sensitive Plant species are currently known to occur in the project area. See the General Wildlife Affected Environment section for a more detailed discussion on existing habitat. Table 2 displays the species that may currently utilize the area or benefit from the restored habitat in the future. The treatment area overlaps the Desatoya and Clan Alpine Sage-grouse Population Management Units (PMUs) as well as late summer and winter habitat designations within the PMUs (NDOW 2008).

Environmental Consequences

Proposed and No Action Alternatives

The impacts from the Proposed Action would be the same as described in the Wildlife Environmental Consequences section.

III.G. Soils

Affected Environment

The soils within the project area consist of shallow to very shallow xerollic haplargids, whose surface textures range from very stony to cobbly loams, on mountain slopes, and shallow to very deep gravelly loams and sandy loams on alluvial fan piedmonts. The soil classifications on the alluvial fan soils vary from haploxerollic durargids and duric natrargids to durixerollic haplargids. The main soil series are the Old Camp and Colbar soils on mountain slopes, and the Yody, Buffaran, Ricert, and Pineval soils on alluvial fans. Soil reactions range from neutral to moderately alkaline in the surface horizons to moderately to strongly alkaline in the subsurface horizons. All soils types within the project area are well-drained, and permeability values are moderately rapid to moderately slow depending on depth. Average annual precipitation of the project area is nine inches. Detailed soil map unit descriptions can be found in the Churchill County Soil Survey, USDA Natural Resource Conservation Service.

Environmental Consequences

Proposed Action

Under this alternative, cheatgrass domination on-site could be eliminated over time, resulting in increased cover of perennial bunchgrasses and shrubs. This restoration of native species would increase surface soil permeability, which would lessen the potential for accelerated sheet and rill erosion on the soil surface.

No Action Alternative:

Under this alternative, cheatgrass domination of the project site would continue. Restoration of native perennial bunchgrasses and shrubs would be very spotty, if at all, and even then would be

largely limited to small areas on the fringes of the cheatgrass monoculture. Soils would continue to be subject to potential decreases in permeability and increases in sheet and rill erosion events as the area re-burns with increasing frequency.

III.H. Vegetation

Affected Environment

The proposed project area was all burned in the 2009 Hoyt fire. While native species are present in the project area, the current cover and composition does not have enough desirable species to effectively compete with the existing cheatgrass seed bank. Over the next several years, it is expected that cheatgrass would become increasingly more dense and continuous throughout the proposed project area. Over time cheatgrass would form a continuous fine fuel layer across most of the proposed project area creating a shortened fire return interval. This process would essentially stagnate the proposed project area into an early seral state and not allow successional processes to move these sites to the climax vegetative community.

Environmental Consequences

Proposed Action:

Imazapic would be applied over the entire proposed project area using an aerial application technique. Imazapic is the active ingredient in a pre-emergent herbicide that controls weeds by inhibiting the plant specific enzyme, acetohydroxyacid synthase, which is involved in the synthesis of three specific amino acids: isoleucine, leucine, and valine. This inhibition disrupts protein synthesis and subsequently interferes with DNA synthesis and cell growth (BASF 2003). Plant response to Imazapic varies by species, season, and exposure to the chemical. Generally, warm season species that germinate and grow in late spring and summer are tolerant of fall Imazapic application, while cool season species that germinate and grow in winter or early spring are more commonly intolerant of fall herbicide application. As a pre-emergent herbicide, seeds susceptible to the herbicide fail to germinate and/or seedlings fail to establish. Imazapic has been shown to be an effective pre-emergent herbicide which persists in the soil for up to three years giving effective cheatgrass suppression for a minimum of two growing seasons.

Based on field trials (BASF 2004, Monaco et al. 2005) and experimental treatments within ZION National Park (Louie et al. 2005) some native grass species that occur in the proposed project area and are known to be tolerant to application of Imazapic. Most plants within the project area would be sprayed with Imazapic but because the herbicide is highly selective, a minimum amount of native vegetation would be affected. Research conducted in many areas throughout the Great Basin and Intermountain West found that cheatgrass can be reduced by more than 90 percent the first year after treatment (BASF 2003) with 3 ounces active ingredient per acre fall application rates, but there are more non-target impacts to desirable plants at these higher application rates as well. Ideally, the release of the existing native plant species from cheatgrass competition followed by drill seeding one year post herbicide treatment would allow the vegetation to become established and increase their competitive capacity for subsequent growing seasons. Once the plant community is firmly re-established, it would be more resistant to wholesale cheatgrass invasion.

The proposed action would result in short-term, minor negative impacts to some native plants due to herbicide exposure. Long-term, the herbicide treatment would interrupt the grass-fire

cycle, which would allow desirable plant communities to establish, regenerate, and persist. This would preserve the fullest complement of desirable plant species, communities, and ecosystem processes. In the absence of cheatgrass, future fires in the proposed project area would be within the natural fire regime and therefore would be less frequent, smaller in size, and lower in intensity than fires that burn in cheatgrass environments. The primary reasons for this difference are due to later green up and die back of native species providing less available dry fuels, and to the discontinuous spacing of fuel and the percent bare ground that naturally exists in the desirable vegetative communities BLM is attempting to establish.

No Action Alternative:

Under the No Action Alternative, the condition of the understory species would continue to decline with the increase of the cheatgrass seed bank. The risk of losing key ecosystem components would continue as the area moves toward a monoculture of cheatgrass. The grass-fire cycle would not be interrupted which would shorten the fire return interval for the project area. This process would essentially stagnate the proposed project area into an early seral state and not allow successional processes to move these sites to the climax vegetative community.

CUMULATIVE IMPACTS

The purpose of the cumulative impacts analysis is to evaluate the combined, incremental effects of human activity within the scope of the project. CEQ regulations define scope to include connected actions, cumulative actions, and similar actions (40 CFR 1508.25). Though the Council on Environmental Quality (CEQ) regulations do not explicitly state that cumulative effects should be addressed in an EA the BLM's National Environmental Policy Act Handbook (H-1790-1) states, "For an EA, we recommend that you consider connected or cumulative actions in the same EA...". Therefore, the scope of the cumulative analysis would be restricted to actions within the vicinity of the Hoyt Fire, which encompasses the treatment area. CEQ regulations formally define cumulative impacts as follows:

'...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time' (40 CFR 1508.7).

The 1997 CEQ Handbook *Guidelines for Assessing and Documenting Cumulative Impacts* suggests the analysis can be focused on those issues and resource values identified during scoping that are of major importance. The only issue of major importance identified during scoping for the proposed action was the potential impact to non-target plants and wildlife from the herbicide.

Past Actions

The New Pass fire was controlled on August 11, 1999. Approximately 47,626 acres of public rangeland burned. Approximately 1,800 acres were drill seeded in December 1999. 9,000 acres were aerial seeded in February 2000. 3,540 acres of the proposed treatment area is inside the New Pass fire perimeter and approximately 50 percent was aeri ally seeded during the New Pass restoration effort. The success of the New Pass restoration project varies due to environmental

factors and site characteristics. The proposed action has been designed to enhance the New Pass restoration project by reducing the competition from the non-native annual grass species cheatgrass. The cumulative effect of the proposed action would be positive for the restoration effort in the area.

Present Actions

Currently the Hoyt Fire area is closed to livestock grazing. As mentioned in the introduction, reducing the amount on cheatgrass in the project area is the first step in the integrated management plan for the Hoyt project. Burned area rehabilitation could occur in the project area once the cheatgrass seed bank has been reduced. The best chance for the restoration of this site, including the lengthening of the fire return interval, would include additional treatments to establish or enhance plant species that are either more fire resistant or native to the area. The cumulative effect of the proposed action would increase the chance of success of the burned area rehabilitation for the area.

Reasonably Foreseeable Future Actions

The reasonably foreseeable future actions (RFFAs) within the project area include the following:

The proposed action is designed to reduce the cover and density of the non-native annual cheatgrass. The success of the project would be determined through monitoring and vegetation inventories to be completed before and after implementation. If positive results are measured by increases in native or more fire resistant plant species, future projects in the area could be considered. A new EA would be prepared for any future action.

Magma Energy (U.S.) Corp. (Magma) proposes to conduct geothermal exploration and well development activities in the McCoy Project Area (MCPA) located in Churchill and Lander Counties, Nevada. The proposed development activities overlap portions of the treatment area. The project proposes well development and exploration activities to determine if sufficient geothermal resources are present in economically viable quantities for electric power generation. The activities proposed by Magma in this plan consist of geophysical exploration, temperature gradient hole drilling, and production/injection well drilling. If exploration is successful, a geothermal power plant may be constructed. Disturbance to wildlife may include direct habitat loss, behavioral avoidance of area, disruption of foraging patterns, or direct mortality.

Vegetation

Vegetation may be affected both positively and negatively from RFFAs. In the short term there could be negative effects to the existing vegetation. Long term the cumulative effects of the proposed action and additional projects should restore the plant community to a mix of shrubs, grasses and forbs. Restoring the plant community would lengthen the fire return interval for the area. Reduced wildland fire activity would be a benefit to the benefit to the vegetation in the area.

Wildlife (including special status species)

Wildlife may be affected negatively from RFFAs by displacement or disruption of normal behavioral patterns due to construction, project operations and maintenance, and site rehabilitation. In addition, some of these projects and actions could increase traffic, conflicts with humans, and competition for habitat niches in the short term. Some RFFAs may also

decrease forage quality, quantity, and composition. Overall, the proposed action would seek to increase habitat availability and standard operating procedures for herbicide treatment would diminish or negate any affects to individual animals; thereby contributing a negligible amount to cumulative effects on wildlife and BLM Special Status species within the scope of the Proposed Action.

MONITORING

The monitoring described in the Proposed Action is sufficient for this action.

IV. PERSONS, GROUPS, AND AGENCIES CONSULTED

LIST OF PREPARERS

Bureau of Land Management

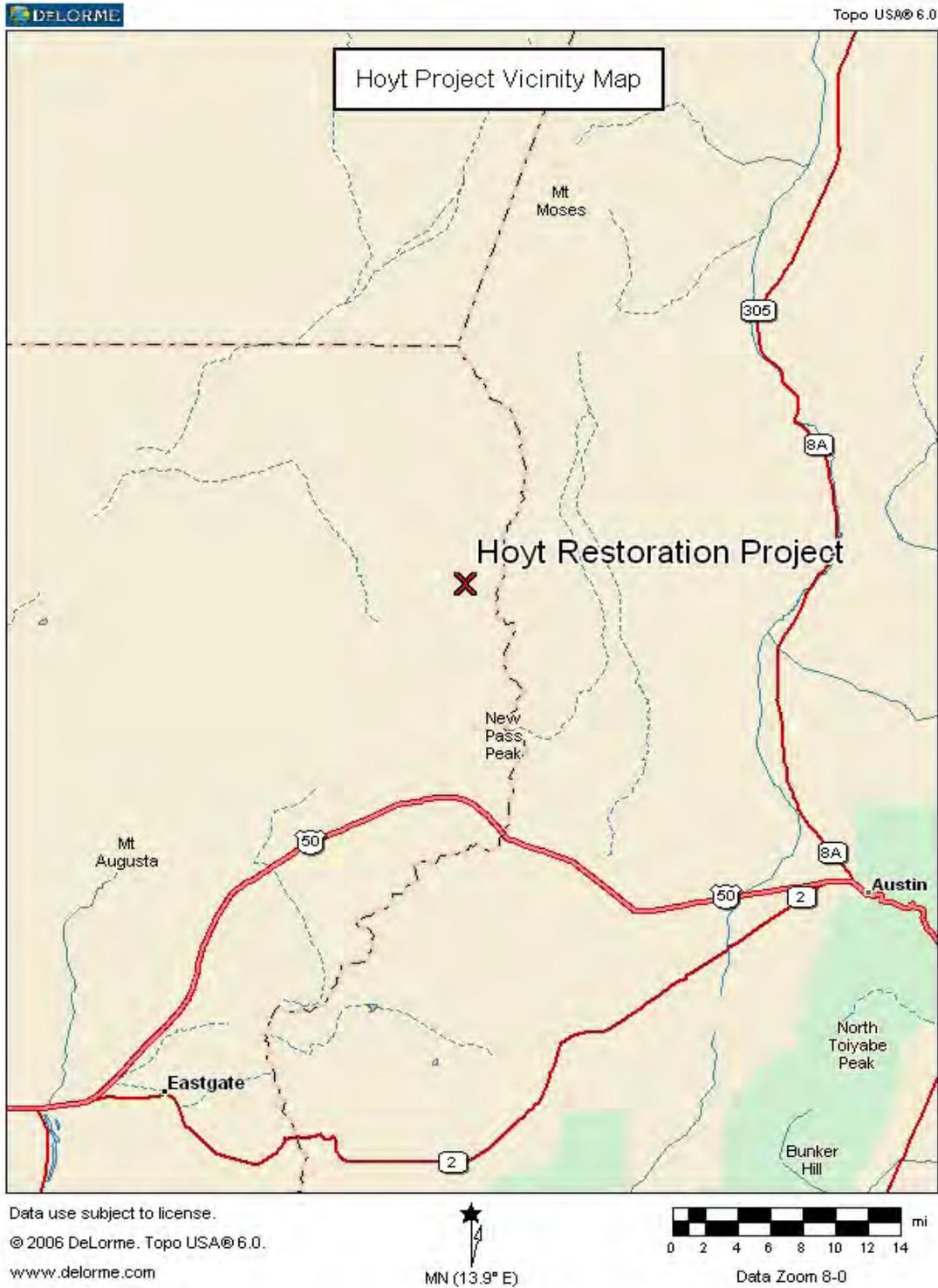
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PERSONS, GROUPS, OR AGENCIES CONSULTED

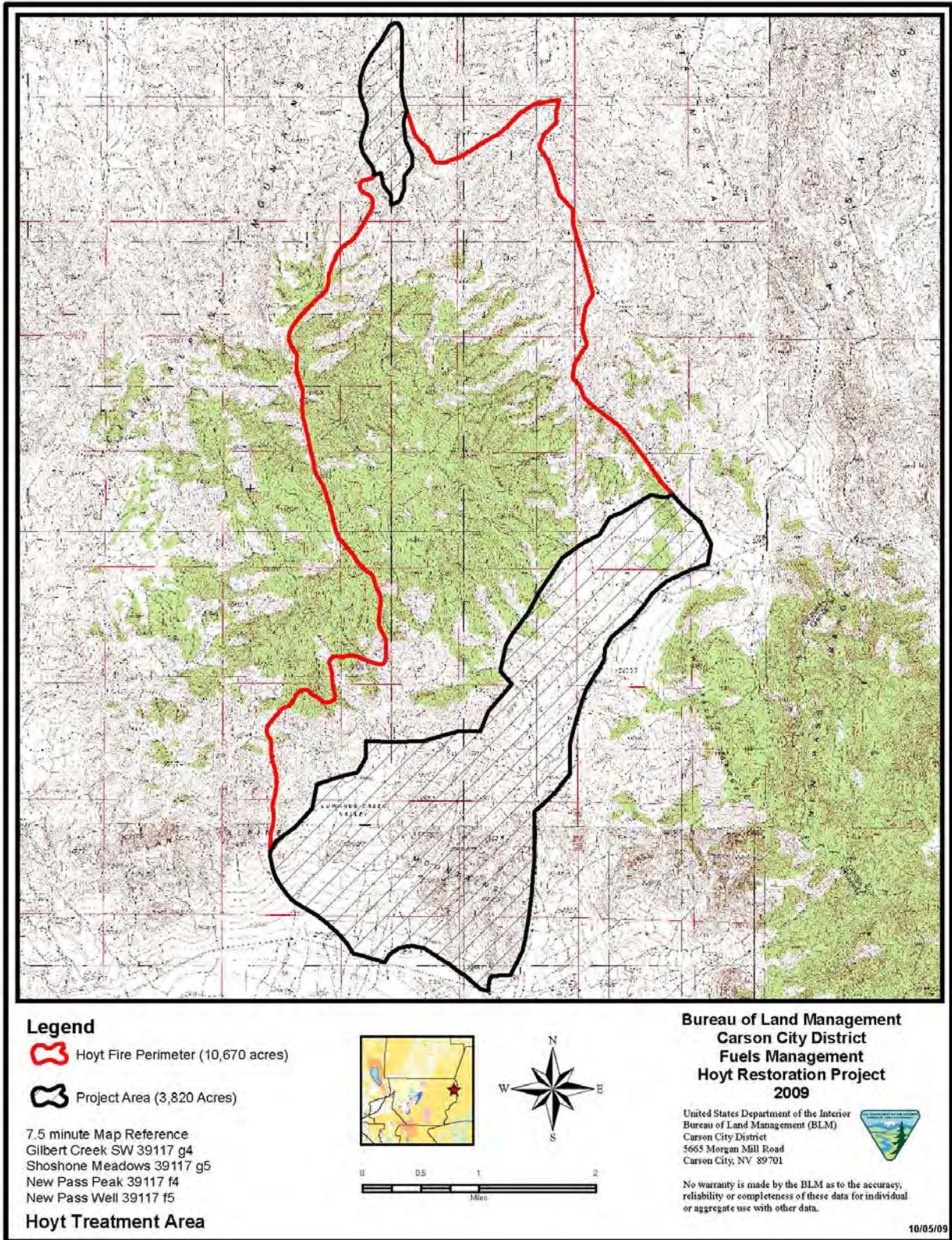
NAME	AGENCY	PROJECT EXPERTISE
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V. MAPS

General Vicinity Map



Hoyt Project Map



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Appendix A: Nevada's Protected Species by County



U.S. Fish & Wildlife Service

Nevada Fish & Wildlife Office

Pacific Southwest Region


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Nevada's Protected Species by County

U.S. FISH AND WILDLIFE SERVICE
NEVADA FISH AND WILDLIFE OFFICE

NEVADA'S ENDANGERED, THREATENED, PROPOSED AND
CANDIDATE SPECIES BY COUNTY
(Updated May 2, 2008)

CARSON CITY RURAL AREA

Amphibian

C Mountain yellow-legged frog *Rana muscosa*
(Sierra Nevada Distinct
Population Segment)

Fish

T Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*

Invertebrate

E Carson wandering skipper *Pseudocopaeodes eunus
obscurus*

Plant

C Tahoe yellow cress *Rorippa subumbellata*

CHURCHILL COUNTY

Fish

T Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*

CLARK COUNTY

Birds

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E	Southwestern willow flycatcher •	<i>Empidonax traillii extimus</i>
C	Yellow-billed cuckoo (Western U.S. Distinct Population Segment)	<i>Coccyzus americanus</i>
E	Yuma clapper rail	<i>Rallus longirostris yumanensis</i>
Reptile		
T	Desert tortoise (Mojave population) •	<i>Gopherus agassizii</i>
Amphibian		
C	Relict leopard frog	<i>Rana onca</i>
Fishes		
E	Bonytail chub •	<i>Gila elegans</i>
E	Colorado pikeminnow *	<i>Ptychocheilus lucius</i>
E	Humpback chub *	<i>Gila cypha</i>
T	Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>
E	Moapa dace	<i>Moapa coriacea</i>
E	Pahrump poolfish	<i>Empetrichthys latos</i>
E	Razorback sucker •	<i>Xyrauchen texanus</i>
E	Virgin River chub + •	<i>Gila seminuda</i>
E	Woundfin •	<i>Plagopterus argentissimus</i>
Plant		
C	Las Vegas Buckwheat	<i>Eriogonum corymbosum</i> var . <i>nilesil</i>

DOUGLAS COUNTY

Amphibian

C	Mountain yellow-legged frog (Sierra Nevada Distinct Population Segment)	<i>Rana muscosa</i>
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Fish

T	Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>
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Plants

C	Tahoe yellow cress	<i>Rorippa subumbellata</i>
C	Webber's ivesia	<i>Ivesia webberi</i>

ELKO COUNTY

Bird

C Yellow-billed cuckoo (Western U.S. Distinct Population Segment)	<i>Coccyzus americanus</i>
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Amphibian

C Columbia spotted frog (Great Basin Distinct Population Segment)	<i>Rana luteiventris</i>
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Fishes

T Bull trout (Jarbidge River)	<i>Salvelinus confluentus</i>
E Clover Valley speckled dace	<i>Rhinichthys osculus oligoporus</i>
E Independence Valley speckled dace	<i>Rhinichthys osculus lethoporus</i>
T Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>

Plants

C Goose Creek Milkvetch	<i>Astragalus Anserinus</i>
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ESMERALDA COUNTY**Reptile**

T Desert tortoise (Mojave population) ●	<i>Gopherus agassizii</i>
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EUREKA COUNTY**Amphibian**

C Columbia spotted frog (Great Basin Distinct Population Segment)	<i>Rana luteiventris</i>
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Fish

T Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>
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HUMBOLDT COUNTY**Fishes**

T Desert dace ●	<i>Eremichthys acros</i>
T Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>

Invertebrate

C Elongate mud meadows Springsnail	<i>Pyrgulopsis notidicola</i>
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Plant

C Soldier Meadow cinquefoil	<i>Potentilla basaltica</i>
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LANDER COUNTY**Fish**

T Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*

LINCOLN COUNTY**Birds**

E Southwestern willow flycatcher *Empidonax traillii extimus*

C Yellow-billed cuckoo (Western U.S. Distinct Population Segment) *Coccyzus americanus*

Reptile

T Desert tortoise (Mojave population) • *Gopherus agassizii*

Fishes

T Big Spring spinedace • *Lepidomeda mollispinis pratensis*

E Hiko White River springfish • *Crenichthys baileyi grandis*

E Pahrnagat roundtail chub *Gila robusta jordani*

E White River springfish • *Crenichthys baileyi baileyi*

Plants

C Las Vegas Buckwheat *Eriogonum corymbosum* var . *nilesil*

T Ute lady's tresses *Spiranthes diluvialis*

LYON COUNTY**Bird**

C Yellow-billed cuckoo (Western U.S. Distinct Population Segment) *Coccyzus americanus*

Fish

T Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*

Plant

C Churchill Narrows buckwheat *Eriogonum diatomaceum*

MINERAL COUNTY

Bird

C Yellow-billed cuckoo (Western U.S. Distinct Population Segment)	<i>Coccyzus americanus</i>
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Fishes

E Hiko White River springfish	<i>Crenichthys baileyi grandis</i>
T Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>
T Railroad Valley springfish	<i>Crenichthys nevadae</i>

NYE COUNTY**Birds**

C Yellow-billed cuckoo (Western U.S. Distinct Population Segment)	<i>Coccyzus americanus</i>
E Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>

Reptile

T Desert tortoise (Mojave population) ●	<i>Gopherus agassizii</i>
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Amphibian

C Columbia spotted frog (Great Basin Distinct Population Segment)	<i>Rana luteiventris</i>
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Fishes

E Ash Meadows Amargosa pupfish ●	<i>Cyprinodon nevadensis mionectes</i>
E Ash Meadows speckled dace ●	<i>Rhinichthys osculus nevadensis</i>
E Devil's Hole pupfish	<i>Cyprinodon diabolis</i>
T Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>
T Railroad Valley springfish ●	<i>Crenichthys nevadae</i>
E Warm Springs pupfish	<i>Cyprinodon nevadensis pectoralis</i>
E White River spinedace ●	<i>Lepidomeda albivallis</i>

Invertebrate

T Ash Meadows naucorid ●	<i>Ambrysus amargosus</i>
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Plants

E Amargosa niterwort	<i>Nitrophila mohavensis</i>
T Ash Meadows blazing star ●	<i>Mentzelia leucophylla</i>
T Ash Meadows gumplant ●	<i>Grindelia fraxinoprattensis</i>

T Ash Meadows ivesia (mousetail) •	<i>Ivesia eremica</i> (= <i>I. kingii</i> var. <i>eremica</i>)
T Ash Meadows milkvetch •	<i>Astragalus phoenix</i>
T Ash Meadows sunray •	<i>Enceliopsis nudicaulis</i> var. <i>corrugata</i>
T Spring-loving centaury •	<i>Centaurium namophilum</i>

PERSHING COUNTY

NONE

STOREY COUNTY

Fishes

E Cui-ui	<i>Chasmistes cujus</i>
T Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>

WASHOE COUNTY

Amphibian

C Mountain yellow-legged frog (Sierra Nevada Distinct Population Segment)	<i>Rana muscosa</i>
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Fishes

E Cui-ui	<i>Chasmistes cujus</i>
T Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>
T Warner sucker	<i>Catostomus warnerensis</i>

Invertebrate

E Carson wandering skipper	<i>Pseudocopaeodes eunus obscurus</i>
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Plants

E Steamboat buckwheat	<i>Eriogonum ovalifolium</i> var. <i>williamsiae</i>
C Tahoe yellow cress	<i>Rorippa subumbellata</i>
C Webber's ivesia	<i>Ivesia webberi</i>

WHITE PINE COUNTY

Fishes

E Pahrump poolfish	<i>Empetrichthys latos</i>
E White River spinedace	<i>Lepidomeda albivallis</i>

E = Endangered	T = Threatened	C = Candidate
Δ = Proposed for delisting	● = Designated Critical Habitat in County	* = Believed extirpated from Nevada
+ = Endangered only in the Virgin River, Muddy River population is a sensitive species.		

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