UNITED STATES DEPARTMENT OF THE INTERIOR
BLM, BOISE DISTRICT

EA #ID100-2005-EA-265 Title Page

Applicant (if any): BLM Action	Proposed Action: Noxious and invasive weed treatment			EA No. ID-100-2005-265
State: Idaho	County: Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Twin Falls, Valley, and Washington	District: Boise & Twin Falls Districts	Field Office: Four Rivers, Owyhee, Bruneau, NCA, and Jarbidge	Authority: NEPA, FLPMA, & See EA Section 1.3 Conformance with Land Use Plans, Statutes, Regulations, and Other Related Plans (pages 2-4)
Prepared By: Boise District and Jarbidge Field Office ID Team	Title: Various			Report Date: 2/6/2007

LANDS INVOLVED

District	Office	Acres	Location
Boise District	Four Rivers Field Office	793,864	See attached maps located in Section 8.0
Boise District	Owyhee Field Office	1,256,834	
Boise District	Bruneau Field Office	1,452,123	
Boise District	Snake Rivers Birds of Prey National Conservation Area	486,616	
Twin Falls District	Jarbidge Field Office	1,331,964	
Total		5,321,401	

Consideration of Critical Elements	N/A or Not Present	Applicable or Present, No Impact	Discussed in EA
Air Quality	X		
Areas of Critical Environmental Concern			X
Cultural Resources			X
Environmental Justice (E.O. 12898)	X		
Farm Lands (prime or unique)	X		
Floodplains	X		
Migratory Birds			X
Native American Religious Concerns			X
Invasive, Nonnative Species			X
Wastes, Hazardous or Solid	X		
Threatened or Endangered Species			X
Social and Economic			X
Water Quality (Drinking/Ground)			X
Wetlands/Riparian Zones			X
Wild and Scenic Rivers (Eligible)			X
Wilderness Study Areas			X

Environmental Assessment EA #ID100-2005-EA-265
Noxious and Invasive Weed Treatment for the
Boise District and Jarbidge Field Offices

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1.0 Introduction

1.1 Need for and Purpose of Proposed Action

The productivity of public lands in the Boise District and Jarbidge Field Office of the Twin Falls District is being adversely affected by the invasion and spread of invasive and noxious weeds (this area will now be referred to as the project area). An invasive species is defined as a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112). Noxious weeds are invasive species that have been designated "noxious" by law. Noxious is defined as something that is harmful or injurious to health or physical well-being. Noxious rangeland weeds are highly competitive and persistent (Sheley 1995). These invasive species typically germinate under a wide variety of conditions and show fast seedling growth; thus they establish quickly and take up water and nutrients that become unavailable for native species (USDA and USDI BLM 1997, Chapter 2). Noxious and invasive weeds can displace native plant species, degrade wildlife and plant habitat, reduce recreational opportunities, and adversely impact water quality, runoff, and sedimentation. In a relatively short time, an invasive species can dominate specific environments of the landscape where they may comprise 70%-100% of the plant community. With that domination, all other organisms, including endangered species, that depended upon the previous community diversity may be displaced or eliminated (Wilson & Young 1996). The cost and complexity of managing these weeds and restoring native habitats increases greatly the longer these situations are not adequately addressed. Twenty-eight species of noxious and invasive weeds currently or potentially pose a problem within the project area (Appendix A) (Whitson et al. 2002, Prather et al. 2006). This list is not inclusive as other invasive weeds may be added as they are discovered. Although weeds are widely scattered throughout the project area in varying degrees and densities, many infestations can be controlled and eradication is possible on some smaller weed infestations.

The purpose of this proposed action is to control the expansion of noxious and invasive weeds, improve riparian and wetland areas, restore fish and wildlife habitat, improve water quality, and improve upland ecological condition by using an integrated approach of management techniques such as mechanical, biological, and chemical methods on public lands managed by the Bureau of Land Management (BLM) within the project area. The requirements for this program were established by the Vegetation Treatment on BLM Lands Record of Decision (ROD) dated July 23, 1991 and supported by the Vegetation Treatment on BLM Lands Final Environmental Impact Statement (FEIS) of May 1991 (these documents may be reviewed at the Boise District or is available online at:
http://www.blm.gov/weeds/VegEIS/Veg_Treat_BLM_Land/In_13_Western_States_May_1991_Statement.pdf and

http://www.blm.gov/weeds/VegEIS/Veg_Treat_BLM_Land/In_13_Western_States_May_1991_Appendices.pdf).

Since 1991, the Boise District has operated under Environmental Assessments (EAs) tiered to the aforementioned FEIS and ROD. The Boise District and Jarbidge Field office are currently operating under the 1998 Noxious Weed EA (ID-010-1998-036). Since 1998 there have been changes in BLM regulations and policy regarding noxious and invasive weed management. Adaptive management practices and procedures have also been implemented in the Boise District and Jarbidge Field office since then, due to changes in weed technology. The design features outlined in the most recent version of the Slickspot Peppergrass Candidate Conservation Agreement (State of Idaho 2006) have also been implemented. Because these requirements have not been fully analyzed at the programmatic level, the Proposed Action would update and broaden the scope of the 1998 EA to analyze and incorporate these actions. The Proposed action would also address and analyze additional general and specific design features that would be implemented to minimize potential adverse effects of weed control. These design features would include general design features and specific design features for special status species and riparian and aquatic habitats.

1.2 Summary of Proposed Action

The proposed action is to control the expansion of noxious and invasive weeds, improve riparian and wetland areas, restore fish and wildlife habitat, improve water quality, and improve upland ecological condition on public lands managed by the BLM within the project area by using an integrated approach of management techniques such as mechanical, biological, and chemical methods.

1.3 Conformance with Land Use Plans

All practices discussed in this EA are applicable to the project area and are in conformance and provided for within the following land use plans:

Owyhee Resource Management Plan, 1999
Vegetation - Objective VEGE 1. Management Action 6 (page 13)

Cascade Resource Management Plan, 1988
Preferred Alternative E - Weeds - Control of Noxious Weeds (page 60)

Jarbidge Resource Management Plan (RMP), 1987 updated in 1993
Appendix F – II-94 Control of Noxious Weeds

Snake River Birds of Prey National Conservation Area Management Plan, 1995
Plant Communities and Ecology - Noxious Weeds (pages 21-22)

Bruneau-Kuna Management Framework Plan, 1983

1.4 Relationship to Statutes, Regulations, and Other Requirements

The following Laws, Acts, Plans, Manuals, and Policies provide a foundation for noxious and invasive weed management by the BLM:

Slickspot Peppergrass Candidate Conservation Agreement (State of Idaho 2006).

Noxious and Invasive Weed Treatment Program Biological Assessment Addendum for the Boise District and the Jarbidge Field Office of the Twin Falls District (USDI BLM July 2006).

The Carlson-Foley Act of 1968 directs agency heads to enter upon lands under their jurisdiction and destroy noxious plants growing on such land.

The Federal Noxious Weed Act of 1974, as amended by Section 15, Management of Undesirable Plants on Federal Lands, 1990, authorizes the Secretary "...to cooperate with other Federal and state agencies and others in carrying out operations or measures to eradicate, suppress, control, prevent, or retard the spread of any noxious weed."

The Federal Land Policy and Management Act of 1976 directs BLM to "...take any action necessary to prevent unnecessary and or undue degradation of the public lands."

The Public Rangelands Improvement Act of 1978 requires that BLM will manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible.

The Final Environmental Impact Statement for Vegetation Treatment on BLM Lands in Thirteen Western States, 1991, analyzes direct, indirect, and cumulative impacts to various resources from the proposed vegetation treatment project and alternatives (USDI BLM 1991).

Interior Departmental Manual 609 prescribes policy to control undesirable or noxious weeds on the lands, waters, or facilities under its jurisdiction to the extent economically practicable, as needed for resource protection and accomplishment of resource management objectives.

BLM Manual 9015 provides policy relating to the management and coordination of noxious weed activities among BLM, organizations, and individuals.

Idaho's Strategic Plan for Managing Noxious Weeds discusses issues critical in building a strong and successful statewide noxious weed program.

2.0 Description of the Alternatives

2.1 Alternatives Considered But Not Analyzed in Detail

Three alternatives were considered but eliminated from detailed analysis.

2.1.1 No Use of Herbicide

An alternative action that would not allow the use of any herbicides for weed control was considered but eliminated from detailed analysis because it would not meet the purpose and need, which is to implement an integrated noxious and invasive weed treatment program on public lands managed by the BLM within the project area.

Biological control agents are not available and mechanical treatments are not effective for at least six invasive and noxious weed species (Appendix B). For several other species, mechanical treatments may control individual plants, but will not effectively control larger populations. Once an invasive weed dominates substantial acreage, other management schemes must be employed. Hand control is generally not practical (Wilson & Young 1996). For some noxious weeds, such as hoary cress and perennial pepperweed, there are no suitable control methods other than herbicides. Manually pulling or cutting some species, such as tamarisk, Russian-olive, perennial pepperweed, and leafy spurge can actually stimulate their growth and allow these plants to rapidly recover. Although mechanical treatments can be effective on small infestations of some annual and biennial species, such as yellow starthistle and Scotch thistle, using only non-chemical treatments for weed control throughout the project area was not considered a viable alternative. The use of only non-chemical treatments such as hand pulling, cutting, mowing, or burning has not been fully successful in eradicating or controlling many deep-rooted, perennial weeds (Appendix B).

Although non-target plants would not be affected from herbicide use under this alternative, weed populations would continue to spread, possibly at increased rates, adversely impacting native vegetation communities, increasing soil erosion, and reducing the biological diversity of these areas.

2.1.2 No Treatment

Weed control activities would not occur within the project area. This alternative was eliminated from detailed analysis because it would not meet the purpose and need and is not consistent with BLM laws, acts, manuals, and policies pertaining to weed control. Under this alternative, noxious and invasive weeds would rapidly expand on public lands located within the project area and also onto adjacent private lands.

2.1.3 Treatment of Juniper and Sagebrush

The treatment of juniper and sagebrush are beyond the scope of this EA. Juniper and sagebrush are not listed as noxious weeds or considered alien invasive species and will not be addressed further in this document. Any treatment of juniper or sagebrush would be addressed on a project by project basis.

2.2 Description of Alternatives

2.2.1 Alternative A - No Action/Continue Present Management

The existing District Noxious Weed Control Program EA, completed in 1998 (USDI BLM 1988), would continue to be followed, except where modified. These modifications would include additional adaptive management practices, procedures, and design features for weed treatment that have not been fully analyzed at the programmatic level.

2.2.2 Alternative B - Proposed Action

The Proposed Action is an integrated programmatic noxious and invasive weed treatment program for all public lands within the project area. The Proposed Action would include all components of Alternative A, except where modified. The proposed action would broaden the scope of Alternative A by addressing and analyzing these modifications (i.e. adaptive management practices, procedures, and design features for weed treatment) that have been implemented since 1998 and would also analyze additional specific design features for special status plants, animal, and aquatic wildlife species, specific design features for riparian and aquatic habitats, and streamside, wetland, and riparian habitat herbicide restrictions and application methods (Table 1).

Treatment Methods

<u>Mechanical Treatment</u>
Mechanical treatments would be used to destroy weeds or interfere with their growth or reproduction. This would be accomplished by hand, hand tools, or chain saws, and may include pulling, digging, hoeing, cutting, or mowing. Treatments within Special Management Areas would be evaluated to ensure that these treatments do not degrade the quality, character, or integrity of these areas.

Mechanical treatments would typically be used on a limited basis, primarily to control individual plants or on very small, isolated infestations of weeds. Large weed infestations are very difficult to control with this type of treatment. See Appendix B for further information on the effectiveness of mechanical treatments for specific weeds.

Biological Control

Biological control would include the use of insects such as the flea beetle or stem borer (leafy spurge), the golden loosestrife beetle (purple loosestrife), the flower weevil, root weevil (knapweeds) gall midge, gall mite, and rust (rush skeletonweed). Introductions of all biological control agents would be done in accordance with the guidelines provided by the U.S. Department of Agriculture - Animal and Plant Health Inspection Service (APHIS) and BLM Manual 9014. Biological control would be expected to reduce target species to a negligible status, but would not result in the complete removal of weeds. See Appendix B for further information on the effectiveness of biological control treatments for specific weeds.

Chemical Control

The 1991 Vegetation Treatment FEIS approved 20 active ingredients for use on public lands. Based on these active ingredients, the BLM has currently (December 2005) approved 166 herbicide formulations for use on public lands (Appendix C). This list of approved herbicide formulations is normally updated annually to reflect those herbicides that have been recently removed or approved by the BLM. Only those herbicides with active ingredients approved through the 1991 FEIS are considered for approval. The 1991 Vegetation Treatment FEIS is currently being updated to reflect changes in chemicals, active ingredients, and technologies over the last 15 years. The result of this update may be the addition of new herbicides and active ingredients that would be authorized for noxious and invasive weed control. Any new herbicides and active ingredients added or removed from the BLM's approved list, as a result of this FEIS or as a result of any other Bureau NEPA analysis, would also be incorporated in the Boise District and Jarbidge Field Office's list of approved herbicides.

Strategy for Managing Noxious and Invasive Weeds

The BLM strategy for managing noxious and invasive weeds would be to:

- Inventory and map noxious and invasive weed presence, distribution, and density;
- Detect and eradicate new infestations of noxious and invasive weeds; and
- Contain or control large scale infestations of noxious and invasive weeds.

This program would involve one or a combination of the treatment methods. Determining which method(s) to use, when, and how often, would be based on (but not limited to) the following factors:

- growth characteristics of target weeds (rhizomatous vs. tap-rooted, annual vs. perennial);
- seed longevity and germination;
- infestation size;
- relationship of the site to other infestations;
- relationship of the site to listed, proposed, candidate, and/or sensitive species;
- distance to surface water;
- accessibility for people and/or equipment;
- use of the area by people;
- effectiveness of treatment on the target weed; and

- cost

During implementation of the weed control program, treatment of noxious and invasive weeds on public lands may occur annually on approximately 5,000 - 10,000 acres. Actual acres treated in the future would depend on funding, inventory, new technology, and the success of proposed control methods and management practices. Based on these various factors, several treatment methods may be used in a given area for several years in order to control, contain, or eradicate noxious and invasive weeds.

General Design Features for Weed Treatment

No spraying of any herbicide would occur when wind velocity exceeds 10 miles per hour, as per the Idaho State Department of Agriculture standards. Exceptions to this include those areas with more restrictive wind velocity requirements described in the Specific Design Features, Streamside, Wetland, and Riparian Habitat Herbicide Restrictions. Wind velocity requirements for slickspot peppergrass would be as described under Specific Design Features for Slickspot Peppergrass (Lepidium papilliferum) listed below.

When weed control occurs in high use areas, such as campgrounds and recreation sites, these areas would be appropriately posted to inform the public of this activity. Information on these signs would include the herbicide used, date of application, and a contact number for further information.

Cut-stump treatments would involve the use of chainsaws or hand saws to initially cut the target species (salt cedar or Russian-olive). Herbicide would then be applied directly to the fresh cut surface of the target species.
Treatment of Russian-olive would focus on small, isolated stands with densities of less than 10 plants per acre. Treatment of Russian-olive is not being proposed in areas where native vegetation has been replaced by large, dense stands of this species.

OHV use would not be allowed on erosive soils, steep slopes, or in areas with wet or muddy soil conditions.

Where not specifically provided for in a land use plan, OHV off-road travel may be authorized in accordance with 43 CFR Subpart 8340. Subpart 8340 establishes criteria for designating public lands as open, limited, or closed to the use of off-road vehicles and for establishing controls governing the use and operation of off-road vehicles in such areas. The following stipulations would apply to off-road OHV use for spraying weeds:

- OHV use would be limited to designated roads and trails within ACECs, Special Recreation Management Areas (SRMAs), eligible wild and scenic river corridors, and Wilderness Study Areas (WSAs) and areas where authorized. Off-road travel, where authorized, would be confined annually to one trip to and from each weed site to avoid creating new roads and trails and to limit the potential for spreading weed seeds.

The following restrictions would apply for the Oregon Trail:

- If treatments are necessary to prevent noxious and invasive weed colonization, surface disturbance treatments, within the designated viewshed of 0.25 to 0.5 miles on both sides of the Oregon National Historic Trail (NHT) including the main, north and south alternatives, would be designed by a cultural resource specialist and approved by management in consultation with the Idaho SHPO.

- The Kelton Road and Goodale's Cut-off (a variant of the Oregon Trail) would be treated in accordance with the Oregon Trail Management Plan for the Boise District (USDI BLM 1984) where applicable.

In riparian, wetland, and aquatic systems, the following restrictions would be applied:

- If salmonid streams are used as a water source for filling spray tanks, fine mesh screens (i.e. 3/32 inch) would be used around the foot valves of the drafting pump.
- OHVs used for weed treatment would be limited to designated crossings or work areas.
- Tank mixing or storage of herbicides would not occur within riparian habitats.
- Fueling of motorized equipment such as chainsaws or off highway vehicles (OHVs) would occur outside of riparian areas.

Specific Design Features for Slickspot Peppergrass

The following instructions, as outlined in the most recent version of the Slickspot Peppergrass Candidate Conservation Agreement (State of Idaho 2006) would be followed:

- BLM will require complete botanical surveys within occupied and potential slickspot peppergrass habitat prior to ground disturbance or herbicide use associated with non-aerial weed control treatments. If slickspot peppergrass is located during these surveys, mitigation measures described below will be implemented to avoid adverse impacts to the species.

- Herbicide application within management area boundaries will be limited to wind conditions less than 7 miles per hour, using large droplet spray with reduced pump pressure (Dexter 1993), and using spot spraying techniques to prevent drift of herbicide into slickspot peppergrass habitat.

- Herbicide application within slickspot peppergrass element occurrence boundaries will use only hand sprayers. A 10-foot no-herbicide treatment buffer will be established around slickspots located in element occurrences. Within the buffer zone, weeds will be treated by hand.

- Weed treatments using persistent herbicides such as Tordon will not occur within 150 feet of slickspot peppergrass element occurrences to avoid potential adverse impacts to the

species associated with the movement of persistent herbicides into slickspot habitat through wind or water erosion.

Specific Design Features for Special Status Species - Terrestrial Wildlife

With the exception of the yellow-billed cuckoo the following special status wildlife species have weed control strategies and activities referenced in the specific documents listed below. See Appendix H for a list of all Special Status Terrestrial Wildlife Species within the Project Area.

Northern Idaho Ground Squirrel (Spermophilus brunneus brunneus)
All activities within the probable historic distribution of northern Idaho ground squirrel as indicated in the Recovery Plan for Northern Idaho Ground Squirrel (USFWS 2003b) would require additional site-specific ESA Section 7 consultation. This recovery plan addresses maintenance of appropriate habitat and lists vegetation management (e.g. noxious weed control) as one tool that should be used on a continued basis.

Canada Lynx (Lynx canadensis)
All weed treatment activities that may potentially affect Canada lynx would follow the interim guidance of the Lynx Conservation and Assessment Strategy (USFWS 2000), until such time that Resource Management Plans are amended to include new conservation measures to guide activities.

California Bighorn Sheep (Ovis canadensis californiana)
Treatments in California bighorn sheep habitat would be consistent with the goals and recommended strategies outlined in the Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska (USDI BLM 1995).

Bald Eagle (Haliaeetus leucocephalus)
Treatments in bald eagle habitat would be consistent with the goals and strategies outlined in the Pacific Bald Eagle Recovery Plan (USFWS 1986). Weed treatment activities, within 0.5 miles of a direct line of sight of winter bald eagle concentration sites within the winter roosting season (November 1 through March 1) or within 0.5 miles of occupied nesting sites (February 1 to August 15), would be designed and implemented in a manner such that any impacts to the species from disturbance or habitat modification would be too small to be meaningfully measured, detected, or analyzed, or would be extremely unlikely to occur.

Yellow-billed Cuckoo (Coccyzus americanus)
In order to minimize disturbance or impacts to prey species during breeding and/or nesting, weed treatment activities would be restricted within 0.5 mile of a known or suspected yellow billed-cuckoo nest site between May 15 and September 15.

Greater Sage Grouse (Centrocercus urophasianus) and Columbian Sharp-tailed Grouse (Tympanuchus phasianellus columbianus)

Weed treatments in greater sage grouse and Columbia sharp-tailed grouse habitats would implement the guidance found in the Idaho Sage Grouse Management Plan (Hemker 1997), Guidelines to Manage Sage Grouse Populations and Their Habitats (Connelly et al. 2000), and Management Considerations for Sagebrush (Artemisia) in the Western United States (USDI BLM 2002).

Specific Design Features for Special Status Aquatic Wildlife Species, Riparian, and Aquatic Habitats

Riparian and aquatic habitats are those portions of a watershed required for maintaining hydrologic, geomorphic, and ecological processes that directly affect wetlands, streams, stream processes, and fish habitats. Special Status Species aquatic wildlife include eight ESA listed or candidate species and two species of concern (Appendix I).

Herbicide use would follow the streamside, wetland, and riparian habitat restrictions related to buffers for areas of concern, herbicide application method, wind speed, and aquatic level of concern for authorized herbicides (Table 1).

Table 1 - Streamside, Wetland, and Riparian Habitat Herbicide Restrictions

Buffers for Areas of Concern	Herbicide Application Method	Maximum Wind Speed	Aquatic Level of Concern Category for Authorized Herbicides *
>100 feet from live water but within upland areas where ground based herbicide applications may influence riparian habitat	All ground/broadcast spraying methods.	8 mph	Low and Moderate
>100 feet from live water but within upland areas where herbicide application may influence riparian habitat	Injecting or painting (cut-stump method).	N/A	Low and Moderate
15 - 100 feet from live water, shallow water tables, or within riparian areas	Ground/spot spraying, injecting, or painting (cut-stump method). No broadcast boom spraying. Selective spraying of target species only (e.g. spot treatment of individual plants).	8 mph	Low No applications of picloram, ester formulations of 2,4-D, or the use of the surfactant R-900 would be authorized
< 15 feet from live water or shallow water tables	Backpack sprayer or hand sprayer Selective spraying of target species (e.g. spot treatment of individual plants).	5 mph	Aquatic approved herbicides only. No use of surfactants would be authorized.
< 15 feet from live water or shallow water tables and where no known or suspected, proposed, listed, or candidate species or critical habitat occurs. **	Injecting or painting (cut-stump method). Selective treatment of target species (e.g. spot treatment of individual plants).	5 mph	Low No use of picloram, ester formulations of 2,4-D, or the use of surfactants would be authorized
< 15 feet from live water or shallow water tables where proposed, listed, or candidate species or critical habitat are known or suspected to occur (i.e. Bruneau, Snake, and Jarbidge Rivers	Injecting or painting (cut-stump method). Selective treatment of target species (e.g. spot treatment of individual plants).	5 mph	Aquatic approved herbicides only. No use of surfactants would be authorized

* Aquatic Level of Concern is a form of risk analysis used by the Fish and Wildlife Service based on procedures developed by EPA to identify a gradual "level of concern" scale. This scale compares the Estimated Environmental Concentration value to a level greater than 1/20 LC 50 risk criteria (i.e., pesticide concentration is 1/20 of the Lethal Concentration that causes mortality in 50% of the test organisms within a specific period of time). See Appendix D for a sample worksheet for assessing risk associated with herbicide applications for aquatic species.

** In those areas where there are no known or suspected proposed/listed aquatic species or critical habitat, non-aquatic herbicides, rated as a low level of concern, may be applied within this 15 foot area. Application would occur above the mean high water mark.

If noxious weed treatments are needed within special status aquatic wildlife species habitats, which are outside the scope of these design features, additional site-specific ESA section 7 consultation would be required.

Treatment Methods

Application methods would include liquid or granular forms of herbicides applied by ground-based application. Ground-based herbicide application would include broadcast or spot spraying. Broadcast spraying would involve herbicide treatment over a larger weed infested area as compared to spot spraying where herbicide is applied to individual plants or to small infestations. Both application methods could involve the use of a spray tank with the pump located in the back of a pickup truck or an all-terrain vehicle (ATV), backpack sprayer, or pack animal to transport herbicides into more rugged terrain.

Selection of an herbicide and application rate for site-specific application would depend on its effectiveness on a particular weed species, success in previous similar applications, habitat types, soil types, and nearness of the weed infestation to water.

Multiple, annual applications at a site are uncommon and not likely to occur; however chemical control of some noxious weeds such as leafy spurge or the various knapweeds requires repeat treatment for years to be effective in controlling existing infestations. It is anticipated that treatment of the same noxious weed areas year after year will be the norm due to the difficulty in killing some weeds. However, control efforts to reduce the spread of these weeds, especially by seed, is expected to be effective (USDA and USDI BLM 1997, Chapter 4).

Monitoring

The effectiveness of weed control would be monitored using site-specific and landscape level monitoring.

Site-specific monitoring would involve assessing the effectiveness of the treatment or control method on specific weed species relative to application rate, method, and treatment area. Monitoring methods may be qualitative or quantitative and would be commensurate with the level of treatment complexity and size and extent of the infestation. The methods used to monitor treated areas may include field observations, photo plots, and/or density plot methods. Management actions may be refined or changed over time as this monitoring data is analyzed.

Landscape level monitoring would be accomplished over the long term by tracking weed occurrences through Geographic Information System (GIS) mapping. Weed sites would be inventoried and mapped on-the-ground to monitor their extent and rate of spread.

Treatment with biological control agents would be monitored through a coordinated effort with the Idaho State Department of Agriculture (ISDA) and BLM. The time frame may involve multiple years to determine effectiveness.

USFWS Coordination

Consultation and/or conferencing with USFWS is occurring at the programmatic level during development of this EA and would continue to occur at the site specific level where federally threatened, endangered, proposed, or candidate species and their designated or proposed critical habitat occur. Site specific consultation/conferencing would be forwarded through the Level I Team. Conservation Data Center (CDC) and BLM database information will be used to assess the presence or absence of special status species prior to treatment. Treatments could be conducted in areas where a "No Effect" or "May Affect, Not Likely to Adversely Affect" determination has been made. Any treatment that "May Adversely Affect" a listed or proposed species would require additional site-specific Endangered Species Act (ESA) Section 7 consultation or conference.

A BLM report will be prepared annually and submitted to USFWS detailing the pesticides applied, the date of application, amount of pesticide applied, and approximate acres treated. A corresponding spatial layer will be sent along with the pesticide information. This report will be submitted by March 15th each year.

2.3 Comparison of Alternatives

No Action/Continue Present Management	Proposed Action
Effects on Soil Resources	
None of the herbicides likely to be used would result in severe effects to soil. Soil resources would benefit from weed treatments.	Benefits to soil resources would be greatest under this alternative (e.g., reduced soil erosion and reduced soil compaction) with the additional design features for weed control treatment being proposed.
Effects on Vegetation/SSS Plants	
None of the herbicides likely to be used would result in severe effects to vegetation or SSS plants. Vegetation would benefit from weed treatments (e.g., reduced non-native species and re-establishment of native species).	Impacts to vegetation and special status species would be greatest under this alternative with the additional specific design features for weed treatment being proposed.
Effects on Invasive, Non-Native Species	
Adverse impacts from invasive, non-native species would continue (e.g., displacing native plant species, degrading wildlife and plant habitat, reducing recreational opportunities, and negatively impacting water quality, runoff, and sedimentation).	Impacts from invasive and non-native species would be similar to the No Action/Continue Present Management alternative.
Effects on Fish and Wildlife	
Benefits to fish and wildlife would be less under this alternative without the general and specific design features and restrictions for weed control in place.	By adhering to the additional general and specific design features and restrictions, benefits to fish and wildlife from weed treatments would be greatest under this alternative.
Effects on Aquatic Resources/Water Quality	
Adverse impacts to aquatic resources/water quality would be greatest under this alternative with no streamside, wetland, and riparian habitat herbicide restrictions in place.	By adhering to streamside, wetland, and riparian habitat herbicide restrictions, benefits to aquatic resources/water quality from weed treatments would be greatest under this alternative and the potential for adverse impacts would be greatly reduced compared to the current situation.

No Action/Continue Present Management	Proposed Action
Effects on Special Management Areas and Visual Resources	
Adverse impacts to SMAs and visual resources from weed treatments could occur by removal of vegetation. This would affect the visual quality of treatment sites by creating openings and other vegetation-free areas that provide a noticeable visual contrast to the surrounding areas. Short-term adverse impacts to vegetation, caused from off-road vehicles used to access or treat weeds, could occur as there are only limited OHV restrictions in place under this alternative.	Impacts to SMAs and visual resources would be similar to the No Action/Continue Present Management alternative. Benefits to SMAs and visual resources would be greatest under this alternative with the additional design features for weed control.
Effects on Recreation	
Benefits to recreation in high use areas such as in campgrounds and recreation sites would be less under this alternative with only limited posting requirements regarding herbicide application in place.	Impacts to recreation would be similar to the No Action/Continue Present Management alternative. Benefits in high use areas would be greatest under this alternative with the posting requirements regarding herbicide application.
Effects on Cultural	
Adverse impacts to cultural resources from weed treatments would be minimal as treatment areas are small and scattered throughout the Project Area.	Impacts to cultural resources would be the same as the No Action/Continue Present Management alternative.

3.0 Affected Environment

The project area, located in southwest Idaho, is comprised of approximately 5.3 million acres of public land administered by the BLM (see attached maps located in Section 8.0).

The project area includes lands within Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Twin Falls, Valley, and Washington counties. The area is bounded on the west by Oregon, on the south by Nevada, on the southeast by Salmon Falls Creek, on the northeast by the boundary of the Boise National Forest, and on the north by the boundary of the Payette National Forest.

There are a variety of natural landscapes within this area, differing in elevation and precipitation. Elevation ranges from a low of 3,000 feet (average) on the Snake River to more than 8,500 feet in the Owyhee Mountains. Average annual precipitation varies from 6 inches or less on the Snake River plain to 22 inches or more in high elevation areas. The majority of precipitation falls during the winter and spring months. Mean temperatures vary from 15qF in January to 95qF in July. Temperature extremes of -20qF and greater than 100qF occur for short periods.

The following discussions focus on those aspects of the physical, biological, and human environments most likely to be affected by the proposed action. These discussions are not intended to be a comprehensive catalog of the resources within the project area. Resources that are unlikely to be affected by the proposed project are not described or are only briefly described in this section.

3.1 Soils

The soils in the project area are extremely diverse. This diversity is a result of the variety of parent materials, slope, aspect, elevation, climate, and vegetative communities. The soils may be categorized using three major physiographic regions: the Snake River Sediments; the Volcanic Plateaus, Hills, Plains; and the Granitic Mountains and foothills.

Snake River Sediments: Soils in these areas occur on nearly level to very steep dissected sedimentary terraces. These soils formed in alluvium and residuum derived from sedimentary materials and mixed volcanics. They are moderately deep to very deep and well drained to excessively drained. These soils have an aridic or aridic bordering xeric soil moisture regime and a mesic soil temperature regime.

Volcanic Plateaus, Hills, and Plains: Soils in these areas occur on nearly level to hilly structural benches, tablelands, foothill, and mountains. The soils in the more hilly areas formed in residuum and slope alluvium derived from welded ryholitic tuffs while the soils on the structural benches and tablelands formed in alluvium and residuum derived from basalt and welded ryholitic tuff. These soils are shallow to moderately deep and well drained. These soils have a

xeric or xeric bordering aridic soil moisture regime and a mesic or frigid soil temperature regime.

Granitic Mountains: Soils in these areas occur on undulating to steep granitic foothills and mountains. These soils formed in residuum, colluvium, and alluvium derived mainly from intermediate intrusive rock. They are shallow to moderately deep and well drained to somewhat excessively drained. These soils have a xeric soil moisture regime and a mesic or frigid soil temperature regime.

3.2 Upland Vegetation

There are seven general vegetation cover types within the project area (Table 2). They are generally characterized by shrub steppe, forest, or riparian species. See Appendix E for more detailed information regarding these vegetation cover types.

3.3 Special Status Plants

The policy of the BLM is to conserve ESA listed, proposed, and candidate species, including their habitats, and to mitigate adverse impacts to sensitive species. Idaho BLM and the Idaho Department of Fish and Game (IDFG) have jointly identified and published a list of all Idaho Special Status Species (SSS). The term SSS includes all ESA listed, proposed, and candidate species as well as BLM sensitive species that were identified in coordination with IDFG. The Boise District received updated lists of ESA Listed, Proposed, and Candidate species and critical habitat USFWS dated March 1, 2006 (File #1003.1000 SL 06-0318) – Four Rivers, (File #1006.2000 SL 06-0320) – Jarbidge, (File #1003.5000 SL 06-0332) – Snake River Birds of Prey NCA, (File #1003.4000 SL 06-0330) – Owyhee, and (File #1003.2000 SL 06-0325) – Bruneau. Although there are no ESA listed or candidate plants within the project area, slickspot peppergrass (Lepidium papilliferum) is currently proposed for designation as threatened or endangered status. Slickspot peppergrass occurs in the Four Rivers and Jarbidge Field Offices and the Snake River Birds of Prey National Conservation Area. There are also 79 BLM sensitive vascular plant species and three non-vascular sensitive plant species that occur, or are expected to occur, in the project area. The Type 2 species, which are rangewide/globally imperiled and commonly occur within the project area, along with slickspot peppergrass, are discussed in Appendix F. A complete list of Special Status Plants can be found in the Field Guide to the Special Status Plants of the Bureau of Land Management Lower Snake River District (now Boise District), April 2001 (this document may be reviewed at the Boise District Office).

3.4 Invasive, Nonnative Species

There are 24 species of noxious weeds and five species of invasive weeds currently or potentially posing a problem within the project area (Appendix A, Whitson et al. 2002, Prather et al. 2006). This list is not inclusive as other invasive weeds may be added as they are discovered. Cheatgrass (Bromus tectorum) and medusahead (Taeniatherum caput-medusae) are

invasive weeds that have become established within the project area. These species are very persistent and the potential for their expansion is virtually unlimited. The noxious and invasive weed program will focus on those species listed in Appendix A. Treatment of annual grasses was addressed in the Boise District's 2004 Normal Fire Rehabilitation Plan so treatment of these species may occur after wildland fires.

Infestations of noxious and invasive weeds occur in varying degrees and densities throughout the project area. The attached maps, located in Section 8.0, display weed occurrences currently known to exist within the Project Area. These weed occurrences may vary in size from individual plants to infestations of 100 acres or more. Potential weed treatments within the Project Area would occur in these areas. Weed occurrences, along with potential treatment areas, are continually updated based on information obtained from monitoring and inventorying noxious and invasive weeds within the Project Area.

3.5 Terrestrial and Aquatic Wildlife

3.5.1 Terrestrial Wildlife

General terrestrial wildlife species known to occur within the project area include pronghorn antelope, mule deer, elk, migratory birds, and sagebrush obligate birds. A large number of other species include: 1) a variety of mammalian predators; 2) small mammals including bats, shrews, rodents, rabbits and hares; 3) waterfowl; 4) non-native game birds including California quail, chukar, gray partridge, and ringneck pheasant; and 5) a diversity of reptiles and amphibians (Appendix G). Every vegetation community type within the project area provides important year-long or seasonal habitat for some combination of these animals.

3.5.2 Aquatic Wildlife

Coldwater Fish

Indigenous, coldwater species include bull trout, redband trout, mountain whitefish, sculpins, white sturgeon, and others. White sturgeon is an important game fish that is found in the Snake River upstream to Shoshone Falls. Introduced, coastal rainbow trout have been stocked by Idaho Department of Fish and Game in some perennial streams throughout the planning area. Non-native Lahontan cutthroat trout have been stocked in reservoirs in the upper Bruneau and Owyhee river basins. Non-native brook trout are found in a few streams within the project area and will hybridize with native bull trout. These exotic species prey on and compete with native trout for habitat and other resources.

Warmwater Fish

Many reservoirs as well as the Snake, Boise, Payette, and Owyhee rivers, and the lower reaches of other drainages, have populations of native and exotic warmwater tolerant fish. Native species include redside shiner (Richardsonius baiteatus), largescale sucker (Catastomus macrocheilus), bridgelip sucker (Catastomus columbianus), and northern pikeminnow (Ptychocheilus oregonensis). Introduced species include smallmouth (Micropterus dolomieu)

and largemouth bass (M. salmoides), crappie (Pomoxis spp.), channel catfish (Ictalurus punctatus), and others.

3.6 Special Status Animals

3.6.1 Terrestrial Special Status Species

Special status animal (SSA) species are those listed (endangered, threatened), proposed for listing, or candidates under the Endangered Species Act (ESA) or considered sensitive by BLM. Listed and proposed species may also have designated or proposed Critical Habitat as defined under ESA. The policy of the BLM is to conserve ESA listed, candidate, and proposed species and their habitats and to mitigate adverse impacts to sensitive species. There are six ESA listed, proposed, and candidate species in the project area (Table 3). There are no species proposed for Federal listing. SSA species occupy a variety of habitats in the project area (Appendix H).

Table 3 - ESA Listed, Proposed, and Candidate Terrestrial Wildlife Species

Scientific Name	Common Name	ESA Status[1]	BFO	FRFO	OFO	NCA	JFO
Canis lupis	Gray Wolf	XN		X			
Spermophilus brunneus brunneus	Northern Idaho Ground Squirrel	T		X			
Spermophilus brunneus endemicus	Southern Idaho Ground Squirrel	C		X			
Lynx canadensis	Canada Lynx	T		X			
Haliaeetus leucocephalus	Bald Eagle	T	X	X	X	X	X
Coccyzus americanus	Yellow-Billed Cuckoo	C	C	C	C	C	C
BFO=Bruneau Field Office, FRFO=Four Rivers Field Office., OFO=Owyhee Field Office, JFO=Jarbidge Field Office, NCA=National Conservation Area							
[1]XN = Experimental Nonessential Population, E = Endangered, T = Threatened, C = Candidate, X=Exists							

3.6.2 Aquatic Special Status Species

The ESA listed, proposed, and candidate species are listed by Field Office in Table 4. There are no species proposed for Federal listing. See Appendix I for more detailed information regarding individual Special Status Aquatic Species.

Table 4 - ESA Listed, Proposed, and Candidate Aquatic Species

Scientific Name	Common Name	ESA Status	BFO	FRFO	OFO	NCA	JFO
Rana luteiventris (Great Basin population only)	Columbia Spotted Frog	C	X		X		X
Salvelinus confluentus	Bull Trout	T	X	X			X
Valvata utahensis	Utah Valvata Snail	E					X
Taylorconcha serpenticola	Bliss Rapids Snail	T		X			X
Pyrgulopsis idahoensis	Idaho Springsnail	E	X	X	X	X	X
Physa natricina	Snake River Physa Snail	E		X			X
Lanx ssp.	Banbury Springs limpet	E					X
Pyrgulopsis bruneauensis	Bruneau Hot Springsnail	E	X				X
Salvelinus confluentus	Proposed Critical Habitat for Bull Trout	PCH					X
BFO=Bruneau Field Office, FRFO=Four Rivers Field Office., OFO=Owyhee Field Office, JFO=Jarbidge Field Office, NCA=National Conservation Area							
E = Endangered, T = Threatened, C = Candidate, PCH = Proposed Critical Habitat							

3.7 Wetlands/Riparian Areas/Aquatic Resources

The BLM administers approximately 1,200 miles of perennial and intermittent stream-associated riparian areas within the project area (BLM lands only). Riparian assessments show that less than 60 percent of these areas are functioning properly. A riparian area is considered to be functioning properly when adequate vegetation, landform, or large woody debris are present to dissipate streamflow energy, filter sediment, capture bedload, build floodplains, detain floodwaters, recharge groundwater and provide fish and wildlife habitat. The area also contains approximately 1,500 individual seep or spring associated wetlands.

3.8 Water Quality

The Idaho Department of Environment Quality has identified approximately 1,150 miles of water quality limited perennial and intermittent streams (IDEQ 1998) on BLM administered lands, state lands, and private lands within the project area. The majority of these waters are impaired due to sediment or temperature. BLM is required to maintain water quality where it presently meets EPA-approved Idaho State water quality standards (ID APA 58.01.02 and 58.01.11) and improve water quality on public land where it does not meet standards. State-approved water quality management plans are required for subbasins containing Water Quality Limited Segments, where water quality is not meeting standards.

3.9 Visual Resources/ Recreation

Public lands have a variety of visual values. Visual values are identified through Visual Resource Management (VRM) inventory and are considered with other resource values in the Resource Management Planning (RMP) process. Visual management objectives are established in conformance with the land use allocations. These area specific objectives provide the standards for planning, designing, and evaluating future management projects.

Class I is the most restrictive category and applies to BLM special administration designations where public interest and BLM management call for the preservation of pristine landscapes such as designated Wilderness and WSAs, Wild and Scenic Rivers, and visible sections of the Oregon NHT.

Classes II to IV would allow increasingly higher levels of landscape alteration. Management activities in Class II areas may be seen but should not attract the attention of the casual observer, and would repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape. Management activities may attract attention in Class III areas but would not dominate the view of the casual observer. Management activities in Class IV may include major modifications of the existing landscape character that dominates the view and is the major focus of viewer attention. A substantial majority of the lands in the project area fall into either VRM Classes III or IV.

The project area is close to several large population centers and high use recreation areas. These areas provide numerous and varied recreational opportunities including nature study, bird watching, natural and cultural resources sightseeing, horseback riding, hiking, hunting, biking, camping, fishing, water sports, rock hounding, and motorized vehicle use.

From March through June, sightseeing, bird watching and nature study associated with the raptor nesting and foraging attracts local, national, and international visitors to the NCA. The western end of the Snake River Canyon within the NCA is managed as the Snake River Birds of Prey Special Recreation Management Area. This area provides a variety of recreational opportunities classified as roaded natural, semi-primitive motorized, or non-motorized.

3.10 Special Management Areas

3.10.1 Wilderness Study Areas (WSAs)

There are 25 WSAs in the project area (Table 5). Wilderness Study Areas must be managed in a manner so as not to impair their suitability for preservation and designation as Wilderness. Weed treatments within WSAs would be evaluated under the guidelines found in the BLM Interim Management Policy and Guidelines for Lands under Wilderness Review (IMP) H-8550-1).

Table 5 - Wilderness Study Areas

WSA	FRFO	OFO	BFO	NCA	JFO
Battle Creek			X		
Big Jacks Creek			X		
Big Willow Spring		X			
Box Creek	X				
Bruneau River – Sheep Creek			X		X
Duncan Creek			X		
Jarbidge					X
Jarbidge River			X		X
Juniper Creek		X			
King Hill Creek	X				
Little Jacks Creek			X		
Little Owyhee River		X			
Lookout Butte		X			
Middle Fork Owyhee River		X			
North Fork Owyhee River		X			
Owyhee River Canyon		X			
Owyhee River - Deep Creek		X	X		
Pole Creek			X		
Sheep Creek East			X		
Sheep Creek West			X		
South Fork Owyhee River		X			
Squaw Creek Canyon		X			
Upper Deep Creek		X	X		
West Fork Red Canyon		X			
Yatahoney Creek		X	X		

3.10.2 Wild and Scenic Rivers

Federal land management agencies are responsible for evaluating certain rivers to determine suitability for inclusion in the National Wild and Scenic Rivers System. The agencies provide protection by preparing recommendations for suitable rivers to be designated and by taking immediate action to protect them. In the interim, the rivers would be treated as though they were components of the National System until acted upon by Congress (USDI BLM 1987), and must be managed in a manner so as not to impair their suitability for inclusion in the National Wild and Scenic River System. The recommended congressional designations for wild and scenic rivers are listed in Table 6.

Table 6 – Recommended Congressional Designations – Wild and Scenic Rivers

River	FRFO	OFO	BFO	NCA	JFO
Bruneau River		X	X		
Current Creek		X			
Deep Creek		X	X		
East Fork Owyhee River		X	X		
Jarbidge River			X		X
Lower North Fork Owyhee River		X			
Nickel Creek		X			
Owyhee River		X			
Sheep Creek			X		
South Fork Owyhee River		X			
Upper North Fork Owyhee River		X			
West Fork of the Bruneau River			X		

3.10.3 Areas of Critical Environmental Concern (ACECs)

Areas of Critical Environmental Concern are areas where special management attention is required to: 1) protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, 2) protect human life and safety from natural hazards, 3) preserve natural processes that dominate the landscape for the primary purpose of research and education. Some ACECs are also referred to as Research Natural Areas and Outstanding Natural Areas. A complete list of the ACECs, along with other Special Management Areas within the project area, is included in Table 7.

Table 7 - Areas of Critical Environmental Concern (ACECs)

Areas of Critical Environmental Concern	Field Office	Reason for Designation
Cottonwood Creek	BFO	Watershed and Riparian Values
Mud Flat Oolite	BFO	Rare Plants, Fossils
Triplet Butte	BFO	Plant Communities, Cultural Resources, Bighorn Sheep, Scenic Value
Boise Front	FRFO	Watershed, Wildlife, Recreation
Buckwheat Flats	FRFO	Plant Communities
Cartwright Canyon	FRFO	Aaseae's Onion
Columbia Sharp-Tailed Grouse	FRFO	Critical CST Grouse Habitat
Goodrich Creek	FRFO	Plant Communities
Guffey Butte/Black Butte Archaeological District	NCA	Archeological, Cultural Resources
Hulls Gulch	FRFO	Aaseae's Onion
Long-Billed Curlew Habitat	FRFO	Critical LB Curlew Nesting Habitat
Lost Basin Grassland	FRFO	Plant Communities
Rebecca Sand Hill	FRFO	Special Status Plants
Sand Hollow	FRFO	Aaseae's Onion
Sand-capped Knob	FRFO	Aaseae's Onion
Summer Creek	FRFO	Plant Communities
Willow Creek	FRFO	Aaseae's Onion
Woods Gulch	FRFO	Aaseae's Onion
Bruneau/Jarbidge River	JFO	Bighorn Sheep, Cultural Resources
Salmon Falls Crk Canyon	JFO	Pristine and Scenic Natural Features
Sand Point	JFO	Paleontology, Geologic, and Cultural Resources
Boulder Creek	OFO	Scenic and Wildlife Values
Cinnabar Mountain	OFO	Plant Communities
Coal Mine Basin	OFO	Special Status Plants, Paleontology
Jump Creek	OFO	Riparian Vegetation, Watershed
McBride Creek	OFO	Special Status Plants
North Fork Juniper	OFO	Watershed and Riparian Values
Owyhee River Bighorn Sheep	OFO/BFO	Bighorn Sheep Habitat
Pleasant Valley Table	OFO	Plant Communities
SommerCamp Butte	OFO	Plant Communities
Squaw Creek	OFO	Plant Communities
The Badlands	OFO	Special Status Plants
The Tules (within the Bighorn Sheep ACEC)	OFO	Plant Communities

3.10.4 Other Special Management Areas

Other SMAs and the reason for their designation are listed in Table 8 below.

Table 8 - Other Special Management Areas

Area	Field Office	Reason for Designation
C. J. Strike Wildlife Management Area	NCA	Waterfowl, ESA Listed Snails
Ted Trueblood Wildlife Area	NCA	Waterfowl, Riparian, Wetland
Stork Island	FRFO	Heron Rookery
Western Heritage Historic Byway	NCA	Scenic Quality Travel Influence Zone
Little Jacks Creek	BFO	Rangeland reference, scenic and natural values, bighorn sheep habitat

3.11 Cultural Resources

Cultural resources are those fragile and non-renewable remains of human activity, occupation, or endeavor, reflected in districts, sites, structures, objects, artifacts, ruins, and works of art as well as natural features that were of importance in human events. There are numerous recorded cultural resource sites within the project area and probably many more sites that have not been recorded. The evidence of previous human activity ranges from the weathering metal apparatus of a mining operation to the textiles created from desert plants and used by the indigenous people.

The National Historic Preservation Act of 1966 established that the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people. An official list of the Nation's cultural resources, worthy of preservation, was established by the National Historic Preservation Act. The register lists archaeological, historic, and architectural properties such as districts, sites, buildings, structures, and objects nominated for their local, state, or national significance by state and/or Federal agencies and approved by National Register staff. The project area has 24 large prehistoric and/or historic district sites on the register including the Oregon NHT (Table 9).

Table 9 - National Register of Historic Places and Cultural Complexes

Historic Place or Cultural Complex	FRFO	OFO	BFO	NCA	JFO
Bruneau River			X		X
Camas Creek-Pole Creek Archaeological District			X		
Clover Creek					X
Cougar Creek					X
Crater Rings National Natural Landmark				X	
DeLamar Historic Mining District		X			
Devil Creek Complex					X
Dove Springs					X
Dry Lakes/Bruneau River Complex					X
Five Finger Buffalo Jump	X				
Goodales Cut-off	X				
Guffey Butte/Black Butte Archaeological District				X	
Juniper Ranch					X
Kelton Road	X				X
Lava Tube Caves (including Tank/Cathedral, Higby, and Kuna Caves)	X			X	
Oregon National Historic Trail	X	X	X	X	X
Pilgrim Stage Station					X
Post Office					X
Pothole					X
Sand Point Cultural/Paleontological Complex					X
Shoofly Creek Rock Alignments	X				
Silver City Historic Mining District		X			
Union Pacific (Oregon Short Line) Railroad	X				
Y Buffalo Jump	X				

3.12 Social and Economic

Many local communities benefit from recreational activities occurring on public lands within the project area. These activities, which include hunting, fishing, camping, and sight-seeing, generate revenue for these local communities. Local ranchers which depend on public land grazing for their ranching operations, benefit the economies of these local communities as well.

4.0 Environmental Consequences

This chapter describes the potential effects to the environment that could result from implementing the alternatives described in Chapter 2. All relevant issues identified during public scoping for the proposed project were considered in the impact analysis and a brief summary of the scoping comments are included in Chapter 5: Public Involvement.

The impact analysis follows the same general outline for resources discussed in Chapter 3 (Affected Environment). It addresses impacts on those aspects of the physical, biological, and human environments most likely to be affected. Direct and indirect impacts are discussed in Sections 4.1-4.12. Cumulative impacts are discussed in Section 4.13 and make no distinction between the alternatives. Resources that are unlikely to be affected or only minimally affected are discussed briefly and resources that would have similar effects were combined.

4.1 Soils

4.1.1 Alternative A – Current Management

Noxious and invasive weed control could create some short-term, local impacts to the soil surface through the use of off-highway vehicles (OHVs) to treat or access weed infestations. This OHV use has the potential to compact the soil, create new trails, and provide new sites for weed transport and colonization. However, this disturbance should be negligible due to the small size of the areas proposed for treatment. Removal of weeds through mechanical treatment or chemical control may result in short term increases in soil erosion. Adverse impacts could result from herbicide moving off-site through soil erosion or soil carried by wind.

Reducing and/or eradicating weed infestations would provide long-term soil protection and stabilization by allowing grasses and native forbs to re-establish. Replacing noxious and invasive weeds with grasses would provide better coverage of the soil surface allowing these grasses to minimize soil erosion and also trap blowing soil particles (Sheley and Petroff, 1999, Lacey 1989). By preventing the loss of native habitats through weed control, it is expected that overall, long-term soil loss from erosion would be reduced.

4.1.2 Alternative B – Proposed Action

Long-term benefits to soils from reducing or eradicating noxious weeds would be as described in Alternative A; however, adverse impacts to soils (soil erosion, soil compaction) would be reduced with the additional design features for OHV use being proposed.

4.2 Upland Vegetation

4.2.1 Alternative A – Current Management

Mechanical vegetation treatments would have some short-term benefits by reducing small populations of weeds. Short-term adverse impacts to vegetation, caused from off-road vehicles used to access or treat weeds, could occur.

Some of the herbicides proposed for use are selective and target only broadleaf species where other herbicides proposed for use are non-selective and may also affect grasses. Herbicides could come into contact with and impact non-target plants through drift, runoff, wind transport, accidental spills, and direct spraying. Potential impacts include mortality, reduced productivity, and abnormal growth. Risk to off-site plants from spray drift is greater with smaller buffer zones. If non-selective herbicides are applied when the targeted weeds are actively growing and native vegetation is inactive, there would be less potential for adverse impacts to native vegetation. Application rate is a major factor in determining risk, with higher application rates more likely to result in risk to plants in various exposure scenarios (USDI BLM 2005). Therefore, herbicide selection and application rates would be site-specific.

Biological control efforts would have long-term beneficial impacts as these treatments would only impact the target plant (i.e. specific noxious or invasive weeds). The aim of biological control is not to eradicate the target weed, but rather to exert enough pressure on the weed to reduce its dominance to a more acceptable level (Sheley and Petroff, 1999).

Severe infestations of noxious weeds usually reduce community productivity, species diversity (relative abundance of species), and species richness (number of species) (Sheley and Petroff, 1999). Based on this, controlling or eradicating noxious and invasive weeds would benefit native vegetation over the short- and long-term. Removal of allelopathic weeds such as spotted knapweed would benefit reproduction, survival, and vigor of native plants (Fletcher and Renney 1963, Rutledge and McLendon 1996, Kelsey and Locken 1987).
Benefits of weed control would depend on the degree of impacts to non-target species and the success of weed treatments over time.

4.2.2 Alternative B – Proposed Action

Impacts would be the same as described in Alternative A; however, adverse impacts from herbicide application, herbicide application methods, and chemical drift would be reduced with the additional specific design features associated with application methods, buffer zones, and restrictions.

4.3 Special Status Plants

4.3.1 Alternative A – Current Management

Special status plants could be adversely impacted over the short- and long-term by mechanical damage and chemical drift. Biological control methods would be host specific and would not adversely affect SSP species. Occupied and suitable habitat would benefit over the short- and long-term from all treatment methods that reduce competition from weeds.

4.3.2 Alternative B – Proposed Action

Impacts would be the same as described in Alternative A; however, adverse impacts from herbicide application, herbicide application methods, and chemical drift would be reduced with the additional specific design features associated with application methods, buffer zones, and restrictions.

ESA Candidate Species – Slickspot Peppergrass

Habitat invasion by non-native plant species was identified in the Candidate Conservation Agreement (CCA) as one of the threats to this species. Adhering to the conservation measures listed in the CCA for slickspot peppergrass would provide long-term benefits by contributing to the re-establishment of native habitat and reducing invasive weeds within slickspot peppergrass habitat.

4.4 Invasive, Nonnative Species

4.4.1 Alternative A – Current Management

Mechanical control of weeds can cause soil disturbance, which can provide appropriate conditions for weeds to resprout from roots, rhizomes, or seeds. Mechanical control, by removing only the target weed, would have no adverse impacts to non-target vegetation.

Biological control methods would be host specific and would not adversely affect non-target species.

The use of herbicides on weeds would benefit plant communities with weed infestations by decreasing the growth, seed production, and competitiveness of target plants, thereby releasing native species from competitive pressures (e.g., water, nutrient, and space availability) and aiding in the re-establishment of native species. However, weeds may resprout or reseed quickly, out-compete native species, and in some cases increase in vigor as a result of treatments (USDI BLM 2005).

Although weeds are widely distributed throughout the project area in varying degrees and densities, many infestations can be controlled and eradication is possible on some smaller weed infestations. There would be some degree of control and the long term benefits of this weed

control would result in preventing these infestations from expanding or becoming monocultures.

4.4.2 Alternative B – Proposed Action

Impacts would be similar to impacts described in Alternative A; however, adverse impacts to other resources would be reduced by implementing the additional general and specific design features for weed control addressed in the Proposed Action. Reducing impacts to surrounding vegetation in these areas would allow faster recovery and would reduce the area's susceptibility to weed invasion over the long term.

4.5 Terrestrial and Aquatic Wildlife

4.5.1 Alternative A – Current Management

Terrestrial Wildlife

Increased noise and disturbance from human activity and vehicles associated with weed treatment activities could displace wildlife, affect the reproductive success of ground-nesting birds, and disrupt their movement between habitats in the short-term.

In the long term, beneficial effects from weed control would be permanent and increase incrementally, as long as weed-infested areas recover to more natural conditions. Wildlife species that rely on shrub-grassland-forb communities such as pronghorn, deer, and elk, would benefit through improved habitat and increased forage availability. When spotted knapweed was removed from historic elk winter range in western Montana, elk use increased dramatically (Thompson 1996).

Chemical control of noxious weeds might pose some toxicological risk to sage grouse and other wildlife during treatment. Pathways of exposure include absorption from treated plants, inhalation of chemical particles suspended in the atmosphere, and direct ingestion of treated plants (Montana Fish, Wildlife, and Parks 1994). If properly applied, however, toxicological risks would be minimal. A reduction of forbs important to sage grouse during brood-rearing could have more serious consequences to local populations, with the magnitude of effects dependent on the scale of treatment. However, untreated noxious weeds are ultimately more effective at competitively displacing desirable plant components than short-term, transient impacts from proper herbicide application (Montana Sage Grouse Working Group 2005).

Native wildlife and habitat productivity that was lost as a result of treatments would be irretrievable in the short term until native communities re-established themselves usually within several growing seasons. Improvement in vegetation would translate into benefits for wildlife, except for those species that have adapted to or thrive in areas where vegetation has changed from historic conditions (USDI BLM 2005).

Small mammals would benefit from weed treatments as a result of improved habitat. Studies in the Upper Snake River Plain indicated that small-mammal biomass was higher in areas with higher shrub and biological crust cover. Both high shrub and biological crust cover are characteristics of areas with lower levels of disturbance (Jenkins 2005).

Aquatic Wildlife

Direct adverse effects to aquatic wildlife could occur from noxious weeds such as purple loosestrife and salt cedar. Purple loosestrife reduces the diversity of native wetland ecosystems and crowds out wildlife-supporting native vegetation, such as cattails and bulrushes (Sheley and Petroff, 1999). Salt cedar has the ability to lower water tables causing surface springs to dry up and reduce stream flow. It also chokes stream banks making the area uninhabitable to species that need moist soil or open water (Frost 2003). Long-term indirect benefits from weed treatments include the re-establishment of desirable riparian species which would provide soil and water protection, increased insect populations, improved stream canopy cover and bank protection, and large woody debris recruitment potential which would benefit aquatic wildlife.

4.5.2 Alternative B – Proposed Action

Terrestrial Wildlife

Impacts would be the same as described for Alternative A.

Aquatic Wildlife

Short-term, adverse impacts to aquatic species would be less than described in Alternative A. Employing streamside, wetland, and riparian habitat herbicide restrictions, application methods, specific design features, buffer zones, and aquatic levels of concern (as described in Table 1 - Streamside, Wetland, and Riparian Habitat Herbicide Restrictions) would minimize the risk for these substances to inadvertently enter aquatic ecosystems. Long-term indirect benefits would be the same as described in Alternative A.

4.6 Special Status Animals

4.6.1 Alternative A – Current Management

Terrestrial Wildlife

Short-term indirect impacts could temporarily displace special status wildlife, affect the reproductive success of ground-nesting birds, disrupt nesting or feeding behavior, cause nest abandonment, and disrupt their movement between habitats as a result of increased noise and disturbance from human activity and vehicles associated with weed treatment activities.

In the long term, beneficial effects from weed control would be permanent and increase incrementally, as long as weed-infested areas re-establish to native communities. Because of

the restricted ranges of many SSA species, special status wildlife species that rely on shrub-grassland-forb communities such as the California bighorn sheep would benefit through improved habitat and increased forage availability. Ground dwelling species such as reptiles, amphibians, and small mammals whose movements can be restricted by dense stands of invasive weeds would benefit from weed treatment as many of these species also have very small home ranges and large weed infestations may restrict their movements. Sage grouse, sharp-tailed grouse, and other species that occur in big sagebrush habitats would benefit through improved diversity and vigor of native perennial grass, forbs, and shrub species.

Gray Wolf and Canada Lynx

The proposed weed treatments are not anticipated to directly impact the highly mobile gray wolf or Canada lynx. Disturbance could affect lynx reproductive success if projects are implemented near an active denning site. Weed control activities are not anticipated to adversely impact wolf prey (e.g. large ungulates such as elk and deer) or lynx prey (e.g. snowshoe hare and red squirrel) availability.

The short and long term results of weed treatments, such as less competition for native plant species, would benefit wolf and lynx prey species and indirectly benefit the gray wolf and lynx over time.

Northern and Southern Idaho Ground Squirrel

Exposure to chemical treatments through direct contact with chemicals or ingestion of treated plants may result in short- or long-term reproductive impacts to ground squirrels. However, ground squirrels would benefit from weed treatment as ground squirrels have very small home ranges and large weed infestations may restrict their movements.

Bald Eagle

Areas proposed for weed treatment have no known bald eagle nest or winter roosting sites, therefore no impacts to nesting and roosting habitat would occur.

Yellow-Billed Cuckoo

Weed treatments would cause minimal disturbance near occupied yellow billed-cuckoo habitat and, consequently, are not likely to adversely impact the yellow-billed cuckoo.

The recovery of native riparian vegetation in the absence of competitive invaders would benefit the yellow-billed cuckoo by re-establishing vegetation for insect food sources and nesting habitat for yellow-billed cuckoo.

Aquatic Wildlife

Short-term indirect adverse impacts to special status aquatic resources could occur if soil particles from herbicide treatment areas are transported to a stream through drift, runoff, wind transport, accidental spills, and direct spraying. Proper selection, timing and application of herbicides would minimize the risk for these substances to inadvertently enter aquatic ecosystems. Application rate is a major factor in determining risk, with higher application rates

more likely to result in risk in various exposure scenarios (USDI BLM 2005). Direct adverse effects to special status aquatic wildlife could occur if herbicides were accidentally spilled into the water. Potential impacts include mortality, reduced productivity, and abnormal growth. Long-term indirect benefits from weed treatments include the re-establishment of desirable riparian species which would provide soil and water protection, increased insect populations, improved stream canopy cover and bank protection, and large woody debris recruitment potential which would benefit special status aquatic wildlife.

Adverse impacts to special status aquatic wildlife species would be greater under this alternative than impacts associated with implementing the proposed action because this alternative does not employ streamside, wetland, and riparian habitat herbicide restrictions, application methods, or address specific design features or aquatic levels of concern for authorized herbicides that would minimize potential adverse impacts to special status aquatic wildlife species as a result of weed treatment.

Molluscan Species

Weed treatments that include operation of equipment or other activities within the Snake River or occupied spring habitats may directly injure or kill Bliss Rapids snail, Idaho springsnail, Bruneau Hot springsnail, Utah valvata snail, or Banbury Springs lanx when they occur in shallow water. Snake River physa are found in deeper water and are less likely to be impacted by instream heavy equipment. Because weed control activities are not anticipated to occur in the Snake River or associated spring habitats, no direct effects to the listed snails from operations within water would occur.

Activities that may impact water quality such as treatments within upland or riparian habitats that introduce chemicals into aquatic systems may also adversely impact Snake River snails exposing individual snails to toxins. These species require cool, clean, and well-oxygenated waters. They are relatively intolerant of pollution.

Treatments that reduce invasive species would indirectly assist in protecting habitat for all aquatic species, including listed Snake River snails.

Columbia Spotted Frog

Individual Columbia spotted frogs may be killed or injured by operation of equipment within aquatic habitats or other in-stream activities. Activities that may impact water quality such as treatments within upland or riparian habitats that introduce chemicals into aquatic systems may also adversely impact Columbia spotted frogs by increasing toxic substances into water.

Treatments that reduce erosion and sediment transport, maintain natural hydrologic cycles, and rehabilitate riparian vegetative cover would: 1) protect water quality (e.g. temperature and sediment), 2) maintain channel morphology (e.g. dimensions and sediment budget), and 3) protect habitat for all aquatic species. Protection of riparian habitat would provide long-term large woody debris recruitment potential and would maintain or improve spotted frog habitat over time.

Bull Trout

Individual bull trout may be killed or injured by operation of equipment within aquatic habitats or other instream activities. Activities that may impact water quality such as treatments within upland or riparian habitats that introduce sediment, organic matter, or chemicals into aquatic systems may also adversely impact bull trout by increasing water temperatures, reducing dissolved oxygen levels, impacting reproduction and survival by potentially injuring or killing individual fish or smothering eggs. Bull trout may also be directly injured or killed by pumping of water from aquatic systems.

Bull trout would benefit from re-establishment of native riparian plant species in the absence of competitive invaders. The recovery of native riparian vegetation would assist in the maintenance of and/or improvement in water quality for bull trout and its critical habitat by maintaining bank stability, reducing sediment loads, maintaining low water temperatures, and diminish the risk of post-wildland fire flooding and landsliding that could degrade water quality and aquatic habitat.

Over both the short- and long-term, proposed weed treatments would allow for soil stabilization and recovery of native vegetation, especially native riparian vegetation such as rushes, sedges, cottonwoods, and willows. Maintenance or improvement of riparian habitat would provide long-term large woody debris recruitment potential and provide stable fish habitat over time.

4.6.2 Alternative B – Proposed Action

Terrestrial Wildlife

Gray Wolf and Canada Lynx

Impacts would be the same as described for Alternative A. Based on the Biological Assessment of Noxious and Invasive Weed Treatment for Boise District and Jarbidge Field Office 2005, the determination of effects for the proposed action is "May Affect, Not Likely to Adversely Affect" the Canada lynx. Based on the lack of effects, the determination of effects for the proposed action is "Not Likely to Jeopardize the Continued Existence of the Species" for the gray wolf.

Northern and Southern Idaho Ground Squirrel

Ground disturbing activities such as herbicide applications would be designed to avoid or minimize potential impacts to ground squirrels. Chemical treatments within historic ground squirrel habitat would be designed to avoid or minimize potential effects to the level that impacts would be insignificant or discountable, reducing the potential for short- and long-term reproductive impacts from chemical exposure. Any ground disturbing activities or chemical treatments proposed within the probable historic distribution of northern Idaho ground squirrel would require additional section 7 consultation with the USFWS.

Based on the Biological Assessment of Noxious and Invasive Weed Treatment For Boise District and Jarbidge Field Office 2005, the proposed action is "Not Likely to adversely Impact" the southern Idaho ground squirrel and the determination of effects for the proposed

action is “May Affect, Not Likely to Adversely Affect” the northern Idaho ground squirrel. However, additional section 7 consultation would be required prior to weed control activities proposed within the historic range of the northern Idaho ground squirrel.

Bald Eagle

Impacts would be the same as described for Alternative A. Based on the Biological Assessment of Noxious and Invasive Weed Treatment for Boise District and Jarbidge Field Office 2005, the determination of effects for the proposed action is “May Affect, Not Likely to Adversely Affect” the bald eagle.

Yellow-Billed Cuckoo

Impacts would be the same as described for Alternative A. Based on the Biological Assessment of Noxious and Invasive Weed Treatment For Boise District and Jarbidge Field Office 2005 the determination of effects for the proposed action is “Not Likely to Adversely Impact” the yellow-billed cuckoo.

Aquatic Wildlife

By adhering to the additional general design features and specific design features for special status aquatic wildlife species, riparian, and aquatic habitats, short-term adverse impacts would be less under this Alternative and any adverse impacts are expected to be minimal. For example, the most restrictive herbicide design feature would be in the zones closest to live-water to protect water quality and wetland, riparian, and aquatic habitats (Table 1).

Molluscan Species

Weed treatments would be designed to have no adverse effect on listed snails. Adverse impacts from herbicide applications and motorized vehicle use would be avoided within riparian habitats and adjacent upland areas that may influence riparian areas that contain or are upstream of listed Snake River snail species. Specific streamside, wetland, and riparian herbicide restrictions would minimize impacts of ground-based chemical weed control on aquatic special status species such as Snake River snails. Riparian design features limiting use of off-road vehicles in live water to designated crossings and work areas would further minimize the potential for impacts to water quality.

Over both the short and long-term, proposed weed treatments with design features for SSS aquatic animals and riparian habitats would accelerate recovery of native vegetation, especially native riparian vegetation such as rushes, sedges, cottonwoods, and willows in the absence of invasive tree species. Treatments that reduce invasive species would indirectly assist in protecting habitat for all aquatic species, including listed Snake River snails.

Based on the Biological Assessment of Noxious and Invasive Weed Treatment for Boise District and Jarbidge Field Office 2005, the determination of effect for the proposed action is “May Affect, Not Likely to Adversely Affect” the Bliss Rapids snail, Bruneau Hot Springsnail, Snake River physa snail, Idaho springsnail, Utah valvata snail, or Banbury Springs lanx.

Columbia Spotted Frog

Impacts would be the same as described in Alternative A. However, over both the short- and the long-term, proposed treatments with specific design features would reduce impacts to non-target vegetation accelerate the recovery of native vegetation, especially native riparian vegetation such as rushes, sedges, cottonwoods, and willows.

Specific streamside, wetland, and riparian herbicide restrictions would minimize impacts of chemical weed control on aquatic special status species such as Columbia spotted frog. Riparian design features limiting use of off road vehicles in live water to designated crossings and work areas would further minimize the potential for impacts to water quality.

Based on the Biological Assessment of Noxious and Invasive Weed Treatment for Boise District and Jarbidge Field Office 2005, the determination of effect for the proposed action is "Not Likely to Adversely Impact" the Columbia spotted frog.

Bull Trout

Impacts would be the same as described in Alternative A. However, weed treatments utilizing off-road vehicle traffic would be designed to have no adverse effect on bull trout. Adverse impacts from ground disturbing activities and motorized vehicle use would be avoided within riparian habitats and adjacent upland areas that may influence riparian areas that contain or are upstream of bull trout or proposed critical habitat. Specific streamside riparian herbicide restrictions would minimize impacts of ground-based chemical weed control. Riparian design features limiting use of off road vehicles in live water to designated crossings and work areas would further minimize the potential for impacts to water quality. The use of fine mesh screens (i.e. 3/32 inch) around foot valves when drafting water from salmonid streams would limit potential impacts to bull trout from weed control activities that might require pumping of water from streams. Potential water pumping from salmonid streams would require additional site specific section 7 consultation to verify that no adverse affects to bull trout would occur.

Using the design features specified for special status aquatic species and riparian vegetation, site-specific projects would either have "No Effect" or be discountable, insignificant, or completely beneficial to SSS aquatic species. In addition, the Proposed Action would not adversely modify primary constituent elements of proposed critical habitat for bull trout. If weed control treatments are needed outside the scope of these design features, additional ESA Section 7 consultation would be required.

Adverse impacts to bull trout associated with herbicide applications would be avoided by using project wide and site specific design features to avoid or minimize impacts on bull trout. Over both the short- and long-term, proposed weed treatments with design features for SSS aquatic animals and riparian habitats would accelerate soil stabilization and recovery of native vegetation, especially native riparian vegetation such as rushes, sedges, cottonwoods, and willows. Protection and/or promotion of riparian habitat would provide long-term large woody debris recruitment potential and provide stable fish habitat over time.

Based on the Biological Assessment of Noxious and Invasive Weed Treatment for Boise District and Jarbidge Field Office 2005, the determination of effects for the proposed action is "May Affect, Not Likely to Adversely Affect" bull trout or its critical habitat.

4.7 Wetlands/Riparian Areas/Aquatic Resources/Floodplains

4.7.1 Alternative A – Current Management

Direct effects to floodplains, wetlands, and riparian zones could occur if chemicals were accidentally spilled into or near water or if OHVs used for weed treatment traveled through riparian, wetland, or aquatic habitats.

Non-native species, such as purple loosestrife and perennial pepperweed, by displacing native vegetation, can alter the hydrology and soil conditions of wetlands. Tamarisk (salt cedar) alters environments by crowding out native plant species, increasing soil salinity, increasing sediment deposition, lowering wildlife values, and consuming large quantities of water,. Long-term indirect effects from weed treatments to control these non-native species could improve hydrologic function and reduce soil erosion.

4.7.2 Alternative B – Proposed Action

Impacts would be the same as described in Alternative A; however, by following the general and specific design features listed in the Proposed Action, direct effects to floodplains, wetlands, and riparian zones would be minimized and less than Alternative A. For example, the most restrictive herbicide design feature would be in the zones closest to live-water to protect water quality, and wetland, riparian, and aquatic habitats.

4.8 Water Quality

4.8.1 Alternative A – Current Management

Direct effects to water quality could occur if herbicides were accidentally spilled into the water. Proper selection, timing, and application of herbicides would minimize the risk for herbicides to inadvertently enter aquatic ecosystems. Short-term indirect impacts would occur if soil particles containing herbicide are transported to a stream or wetland. Long-term indirect effects from weed treatments include improved hydrologic function and healthier watersheds, by reducing competition from invasive species thereby allowing desirable species to become established.

4.8.2 Alternative B – Proposed Action

Impacts to water quality would be the same as described in Alternative A; however, by following the application methods listed in Table 1 (Streamside, Wetland, and Riparian Habitat Herbicide Restrictions) and the additional design features, short-term direct effects to water quality would be minimized.

4.9 Visual Resource/Recreation

4.9.1 Alternative A – Current Management

Landscape aesthetics could be changed as a result of weed treatments in both the short- and long-term and could change recreational use patterns. The removal of vegetation would affect the visual qualities of treatment sites by creating openings and other vegetation-free areas that provide a noticeable visual contrast to the surrounding areas. In addition, the use of herbicides could create visually distinct areas of discolored vegetation (i.e., areas where herbicides have killed vegetation), which could contrast markedly from surrounding areas of green vegetation. Impacts to visual resources would begin to disappear within one to two growing seasons after treatment in most areas. Over the long-term vegetation treatments would likely improve visual resources on public lands (USDI BLM 2005).

Short-term adverse impacts to vegetation, caused from OHVs used to access or treat weeds, could occur as there would only be limited OHV restrictions or general and specific design features for weed control in place.

Potential impacts to recreational resources would also be reduced and future recreational experiences would be improved as a result of weed control. Short-term (12-48 hours) adverse impacts could occur to recreationists as they may not be able to access treated areas immediately after herbicide has been applied. These areas treated with herbicide would be posted with signs when specific herbicide product labels require this to occur. For most herbicides approved for use on BLM lands this is not a label requirement. In most cases, once the herbicide has dried on the vegetation, it is not considered a problem to enter treated areas.

Recreation use is expected to continue to increase regardless of whether this alternative is implemented or not. Although this alternative is not expected to directly affect the number of recreationists within the project area it would improve the experience of those recreationists who do visit.

4.9.2 Alternative B – Proposed Action

Impacts would be the same as described in Alternative A; however, signs informing recreation users of weed treatments could result in greater public awareness and safety benefits than Alternative A. Impacts from OHV use would also be less under this alternative with the additional OHV design features in place.

4.10 Special Management Areas

4.10.1 Alternative A – Current Management

By adhering to the BLM Interim Management Policy (IMP) for Lands under Wilderness Review, short-term adverse effects to WSAs from weed treatment are expected to be minimal.

Although there are no set restrictions on vegetative treatments in other types of special management areas, impacts from weed treatments would be minimal as these treatments cannot degrade the quality, character, or integrity of these lands. In the long term, beneficial effects to special management areas from weed control would be permanent and increase incrementally, as long as weed-infested areas re-establish to native communities.

4.10.2 Alternative B – Proposed Action

Impacts would be the same as described in Alternative A;

4.11 Cultural Resources

4.11.1 Alternative A – Current Management

There is minimal potential for impacts to cultural resources by ground disturbance and impacts associated with the use of vehicles (trucks, ATVs) used for weed treatment or hand-pulling individual weeds as treatment areas are small and scattered throughout the Project Area.

4.11.2 Alternative B – Proposed Action

Impacts would be the same as described in Alternative A; however impacts would be minimized within the designated viewshed of 0.25 to 0.5 miles on both sides of the Oregon National Historic Trail (NHT) including the main, north and south alternatives adjacent to historic trails (Oregon, Kelton, Goodale) as treatment methods would be designed by a cultural resource specialist and approved by management in consultation with the Idaho SHPO.

4.12 Social and Economic

4.12.1 Alternative A – Current Management

Vegetation treatments could adversely affect use of treated areas in the short term and loss or restrictions on the use of these treated lands could temporarily cause hardship to affected parties. Long term, most users of public lands, and those with interests near public lands, would likely benefit. An important goal of treatments is to restore ecosystem health so that public lands can provide sustainable and predictable products and services to benefit recreationists and other public land users (USDI BLM 2005).

4.12.2 Alternative B – Proposed Action

Impacts would be the same as described in Alternative A.

4.13 Cumulative Effects

Resources Addressed

Cumulative impacts to upland vegetation including special status plants; terrestrial and aquatic wildlife including special status species; wetland, riparian, and aquatic areas; water quality; and social and economic conditions for alternatives A and B are considered similar and have been grouped together.

Scope of Analysis

The analysis period covered by the cumulative effects analysis includes the past 20 years to 10 years in the future. The spatial domain for past, present, and reasonably foreseeable future activities is primarily the Boise District and the Jarbidge Field Office. However, effects to resources could occur outside of this project area. This project area is comprised of public land with varying degrees of state and private lands. Although BLM does not have authority to regulate activities on lands that it does not administer, actions occurring on public lands can cause direct, indirect, or cumulative effects on non-federal lands. Actions on non-federal lands may also affect adjacent public lands as well.

Over the years, Idaho has enacted statutes and created programs designed to prevent and manage a wide variety of invasive species. Often, these programs are administered in cooperation with various partners and range from monitoring site-specific populations to landscape-wide trends. The agencies involved include: Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Twin Falls, and Washington County Weed Departments; Idaho Department of Lands; Idaho Department of Fish and Game; Idaho Department of Transportation; Idaho Department of Agriculture; Idaho Power Company; private landowners; USDA's Animal, Plant Health Inspection Service (APHIS) and Forest Service (USFS); and the

Lower Gem, Lower Weiser River, Jordan Valley, Adams, Upper Payette, and South Fork of the Boise Cooperative Weed Management Areas (CWMAs).

In addition, the University of Idaho's colleges of Agriculture and Natural Resources and the Cooperative Extension Service play important research and educational roles. Finally, local governments, industries and their associations, various interest groups and individuals work cooperatively in control and educational efforts, often coming together in successful efforts such as cooperative weed management areas and the Idaho Weed Awareness Campaign.

Idaho's Strategic Plan for Managing Noxious Weeds was released in February of 1999, which created Statewide Cooperative Weed Management Areas (CWMAs) that developed and integrated weed management plans. These weed management programs are responsible for identifying local and regional invasive and noxious weed concerns and educating local landowners on treatments, government aids, etc. Currently there are 29 successfully functioning CWMA's that cover approximately 82% of the State, including the area surrounding the project area. This cooperative process has since lead to the establishment of the Idaho Invasive Species Council (IISC), which was established by Governor Kempthorne's Executive Order No. 2001-11. Their primary task is to "provide policy level direction and planning for combating harmful invasive species infestations throughout the State and for preventing the introduction of others that may be potentially harmful". In addition to these and other invasive and noxious weed management programs implemented by the State, and on a county-by-county basis, various federal statutes have been put in place to combat invasive and noxious weeds as well.

Past and present cumulative impacts within the project area have occurred from livestock grazing, wild fires, mining, timber harvests, construction and maintenance of roads, residential, commercial, and industrial development, and recreational activities including OHV use. All of these impacts have the potential to remove vegetation and create disturbed areas for weeds to become established.

Adjustments to livestock grazing are currently being made through the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management process. Wildland fires are evaluated for long-term post-fire impacts to critical natural resources. Those areas unlikely to recover naturally from severe wildland fire damage are identified and, where feasible, stabilization plans are developed to restore or establish healthy, stable ecosystems. Mining plans include reclamation, rehabilitation, and monitoring plans to mitigate impacts. Timber harvests are currently designed to create and maintain vegetative mosaics on the landscape to provide diverse ecological stages and associated habitats for wildlife species and to reduce the potential for soil erosion. The BLM is currently designating specific routes for OHV use, to limit the amount of off-road use and damage. Weed treatments, which are occurring throughout the Project Area in varying degrees, would have minimal adverse short-term and slight to moderate beneficial impacts long term, to these activities.

4.13.1 Upland Vegetation/ Special Status Plants

Livestock grazing, OHV use, wildland fires, mining, and timber harvests may alter vegetation, causing moderate impacts. OHV use and grazing also pose a risk of spreading noxious weeds when seeds attach to livestock or when seeds collect in tires or the undercarriage of vehicles and these seeds are then transported to other locations. Adjustments to livestock grazing, OHV designations, and weed control activities are expected to restore or improve native plant communities and watersheds, provide protection of occupied special status plant habitat, reduce erosion, and reduce non-native species.

Under both alternatives adverse impacts from weed control activities would be localized, short-term, and negligible to minor. Controlling populations of noxious and invasive weeds would benefit native plant communities and special status plants from reduced competition allowing native species to re-establish in these areas. Due to the potential risk to non-target vegetation from herbicide application there could be short-term impacts to native vegetation and special status plants, but over the long-term, weed treatments should restore native vegetation. Impacts from weed control treatments are anticipated to be beneficial and the combination of all weed control activities in the project area is not expected to have an irreversible impact on upland vegetation and special status plants.

4.13.2 General/Special Status Terrestrial and Aquatic Wildlife Species

Wildland fires, mining, OHV use, livestock grazing, and timber harvests may alter wildlife habitat, or cause wildlife to be temporarily displaced due to increased human activity and noise, causing moderate impacts. Adjustments in livestock grazing, reclamation plans for mining operations, designating specific routes for OHV use, and properly designed timber harvests would have slight to moderate benefits to wildlife over the long term. With improvement of wildlife habitat, impacts from weed control treatments are anticipated to be beneficial, with the degree of benefit depending on the success of these treatments. The combination of all weed control activities in the project area is not expected to have an irreversible impact on general/special status fish and wildlife species.

Under both alternatives, herbicide toxicity and proposed application rates pose low risks to wildlife, even when treatments in surrounding areas are included. Estimated doses from typical rangeland exposures to wildlife would result in a negligible risk from all herbicides currently approved (USDI 1991). Under both alternatives, adverse impacts would be localized, short-term, and negligible to minor.

4.13.3 Wetlands/Riparian Areas/Aquatic

Livestock grazing, OHV use, wildland fires, mining, and timber harvests may cause moderate impacts to wetlands, riparian areas, and aquatic habitats. OHV use and grazing also pose a risk of spreading noxious weeds when seeds attach to livestock or when seeds collect in tires or the undercarriage of vehicles and these seeds are then transported to other locations. Adjustments to livestock grazing, OHV designations, and weed control activities are expected to allow for

slight to moderate short- and long-term improvement in floodplains, wetlands, and riparian zones by reducing non-native species in these areas and restoring, maintaining, or improving native riparian vegetation. Establishing native vegetation in these areas would stabilize streambanks, aid in floodplain development, dissipate energy, and control erosion. Because benefits from adjustments in livestock grazing may only occur on public lands, the current condition of some state and private lands could remain static.

Potential adverse impacts to aquatic and riparian resources would be minimized under the Proposed Action through the streamside, wetland, and riparian habitat herbicide restrictions, application methods, and design features. Impacts would be greater under the No Action alternative with only limited specific restrictions in place. Both alternatives could experience a short-term loss of wetland, riparian, and aquatic functions and values but the rate of loss would be slowest under the Proposed Action and slower than historic levels under the No Action. Long-term effects from weed control treatments are anticipated to be beneficial and the combination of all of the weed control activities in the project area is not expected to have an irreversible impact on riparian resources.

4.13.4 Water Quality

Wildfires, mining, OHV use, past and current road construction and maintenance, livestock grazing, and timber harvests may alter water quality, causing moderate impacts. Adjustments in livestock grazing, reclamation plans for mining operations, designating specific routes for OHV use, and properly designed timber harvests would have slight to moderate short- and long term benefits to water quality through improved native plant communities and watersheds, increased site protection, and a reduction of non-native species. This increase in native vegetation along riparian areas would improve water quality by reducing water temperature through additional shading and would also filter sediment.

Impacts would be greater under the No Action alternative with fewer specific restrictions in place. Under the proposed action, buffers for areas of concern and herbicide application methods would be implemented so that treatments would not occur in close proximity to streams; therefore, the potential risk for herbicide to be transported into waterways is low. In the short- term both alternatives could contribute to deterioration in water quality through reduced vegetation which could allow for increased erosion. Long-term effects from weed control treatments are anticipated to be beneficial through improved vegetation and the combination of all weed control activities in the project area is not expected to have an irreversible impact on water quality.

4.13.5 Social and Economic Values

Many local communities benefit from recreational activities occurring on public lands within the Project Area. These activities, which include hunting, fishing, camping, and sight-seeing, generate revenue for these local communities. Based on an assessment done for the BLM and Forest Service for the Interior Columbia Basin, recreation and tourism associated with public lands are expected to show little change during the next decade (USDI BLM 2005). Local

ranchers which depend on public land grazing for their ranching operations benefit the economies of these local communities as well.

Under both alternatives, impacts from weed control treatments are anticipated to be beneficial. Economic benefits to local communities from revenue generated from recreational activities and local ranchers would be similar to economic benefits that have occurred in the past. Vegetation treatments could affect private property in the vicinity of public lands, particularly parcels adjacent to treatment areas. Over the short term, there would be minor risks for property damage associated with treatments because it is possible that some treatment effects would extend beyond BLM boundaries onto private property. Long term, treatments that reduce weeds and improve the scenic and recreational values of public lands should increase property values near public lands (USDI BLM 2005).

4.14 Mitigation

No mitigation measures are being proposed. The proposed action includes general design features for weed treatment, specific design features for special status plant species, specific design features for special status terrestrial wildlife species, specific design features for special status aquatic wildlife species, riparian, and aquatic habitats, and specific streamside, wetland, and riparian habitat herbicide restrictions that preclude the need for any mitigation measures.

5.0 Consultation and Coordination

5.1 List of Preparers

Name	Specialty
Mark Steiger	Botanist
Sheri Hagwood	Botanist
Dean Shaw	Cultural Resource Specialist
Kathi Kershaw	Ecologist
Lynn Wessman	Ecologist
Cindy Fritz	ESR Coordinator
Bruce Zoellick	Fisheries Biologist
Jeff Mork	GIS Specialist
Sharon Paris	NEPA Coordinator
Jean Fend	NEPA Specialist
Matt McCoy	NEPA Specialist
Frank Jenks	Recreation Specialist
Paul Seronko	Soil Scientist
Pat Kane	Weed Management Specialist
Jim Klott	Wildlife Biologist
Tim Carrigan	Wildlife Biologist

5.2 List of Agencies, Organizations, and Individuals Consulted

Consultation
The Boise District received updated lists of ESA Listed, Proposed, and Candidate species and critical habitat USFWS dated March 1, 2006 (File #1003.1000 SL 06-0318) – Four Rivers, (File #1006.2000 SL 06-0320) – Jarbidge, (File #1003.5000 SL 06-0332) – Snake River Birds of Prey NCA, (File #1003.4000 SL 06-0330) – Owyhee, and (File #1003.2000 SL 06-0325) – Bruneau. Endangered Species Act section 7 consultation continued with the USFWS during the development of the EA. The Boise District Level 1 ESA Streamlining Team will review, discuss, and come to an agreement on the Biological Assessment. A final decision based on the EA will not be made until consultation is concluded. Since this consultation is based on a programmatic analysis, continued coordination between the USFWS and the BLM would assist in monitoring weed control projects. If site-specific weed treatments exceed the parameters described under the Proposed Action and/or may adversely affect proposed or listed species or their habitats, additional site-specific ESA Section 7 consultation may be required prior to individual project implementation.

The federal government has a special trust responsibility to American Indian tribes that is defined by treaties, statutes, and executive orders. According to Department of the Interior Secretarial Order Number 3215, the trust responsibility covers lands, natural resources, money or other assets held by the federal government in trust or that are restricted against alienation for

Indian tribes and Indian individuals. Proper discharge of the federal trust responsibility requires BLM to protect treaty-based fishing, hunting, gathering, and similar rights of access and resource use on traditional tribal lands. Within the project area, the Shoshone-Bannock Tribes of the Fort Hall Reservation have rights, reserved in the Fort Bridger Treaty of 1868, to hunt (and by extension to fish and gather) on the unoccupied lands of the United States. The BLM is also responsible under statute, regulation, and executive order to consult with tribes, with or without treaties, whose interests might be affected by land management decisions. Consultation with the Shoshone-Paiute Tribes of the Duck Valley Reservation and the Shoshone-Bannock Tribes of Fort Hall on this and similar projects indicates that a wide range of Tribal interests are potentially affected. These interests include traditional cultural practices like hunting, trapping, fishing, gathering wild food and medicinal plants and other natural products, clean water and healthy plant and wildlife populations, as well as aboriginal archaeological sites, sacred sites, and traditional cultural properties.

As part of monitoring, acreages and locations of site-specific actions associated with listed, proposed, and candidate species and/or critical habitat would be submitted to USFWS annually by March 15. The BLM would also annually report the acreages and locations of site-specific actions implemented in slickspot peppergrass habitat by March 15.

5.3 Public Participation

Time Period	Correspondence, Meeting, Activity
5-19-05	Wings and Roots Coordination meeting
5-27-05	Idaho Army National Guard – Marjorie McHenry

A scoping letter was sent to 94 interested publics including organizations, and Federal and state agencies in May 2001. This letter informed the public that a weed treatment environmental assessment, accompanied by an unsigned decision record, was available for public review and comment. By the end of the 30-day scoping period three comment letters were received. These comments are addressed below.

This EA was not finalized at that time as it was decided to broaden the scope of the EA to address and analyze additional herbicide application methods such as injecting and painting (cut-stump method), specific streamside, wetland, and riparian habitat herbicide restrictions (Table 1), and detailed general and specific design features benefiting special status plant and animal species.

A scoping letter was then sent to 102 interested publics including organizations, and Federal and state agencies in April 2003. This letter informed the public that the BLM was in the planning stage for tamarisk and Russian-olive control and asked for comments regarding this proposal. At the end of the 30-day scoping period one comment letter was received.

Comments from the above mentioned scoping letters are summarized below:

Comment #1
This EA fails to provide and fully analyze a sufficient range of alternatives.
We request that you withdraw this "EA" and begin the scoping process for an EIS that fully considers a broad range of alternatives.

Response
This EA is tiered to the Final Environmental Impact Statement (FEIS) Vegetation Treatment on BLM Lands (May, 1991) and the Vegetation Treatment on BLM Lands Record of Decision (ROD) July, 1991. In accordance with NEPA this FEIS may be used as a broad, comprehensive background source on which any necessary, subsequent EA can be tiered, in accordance with the Council on Environmental Quality (CEQ) procedures for implementing NEPA (40 CFR 1500-1508). Tiering eliminates repetitive discussions of the same issues and allows consideration of the actual issues that are relevant.

Alternatives discussed in this FEIS include No Aerial Application of Herbicides, No Use of Herbicides, No Use of Prescribed Burning, and No Action (Continue Current Management). Further discussion in this EA regarding these alternatives would be repetitive since site specific conclusions and impacts would essentially be the same as the alternatives analyzed in the FEIS.

Comment #2
This EA is tiered to a long-outdated Vegetation Treatment FEIS that is no longer relevant to administration and decision making processes on BLM lands.

This EA fails to recognize the significantly altered environmental setting and new scientific knowledge acquired since the days of the FEIS.

This EA fails to adequately analyze and assess human health risks of herbicides proposed for use and significant new information on effects of herbicides singly, additively, cumulatively, break-down products, infiltration of streams and aquifers, etc. that exists since the days of the FEIS.

Response
The weed control program for the project area is consistent with and tiers to the Vegetation Treatment on BLM Lands FEIS Record of Decision dated July, 1991. The proposed action in this EA meets the Purpose and Need set forth in the Vegetation Treatment on BLM Lands (FEIS) of May, 1991. Although this document continues to be used for administration and decision making processes for vegetation treatment on BLM lands, it is reaching its limit of usefulness due to dated supportable analysis and new information that has been gathered since this document was prepared. Based on this, the BLM is currently preparing a national programmatic environmental impact statement (PEIS) to replace analyses contained in previous EISs. However, in the interim, we believe that this EA adequately provides necessary information and analysis. Any changes in this new EIS would be incorporated into our actions where this proposed EA is inconsistent. The comment period for the Draft Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States

Programmatic Environmental Impact Statement (USDI BLM 2005) closed on February 10, 2006 and the BLM is currently working on comment analysis.

Comment #3
BLM's proposal completely, utterly and totally fails to assess the impacts of livestock on infestation, spread, and dispersal of exotic species on BLM lands in the Lower Snake River District.

We request that allotments with known infestations of noxious weeds in areas with remaining native vegetation communities be closed to livestock grazing until weeds are controlled, and infestation sites are restored.

If native vegetation is not allowed to reestablish on these sites, weed problems will re-occur. To successfully reestablish native vegetation, BLM must limit and adjust livestock grazing.

Response
Adjusting livestock grazing is beyond the scope of this EA. Adjustments in livestock grazing involve the process set forth in the Standards for Rangeland Health and Guidelines for Grazing Management.

Comment #4
The Boise District BLM is familiar with ICBEMP and other information, much of which we have previously provided to your office when you have ignored this information in preparation of other documents. Please let us know if we must once again provide you with this info in order to get you to include it in the current analysis.

Response
We have included the strategy outlined in the Upper Columbia River Basin (UCRB) Draft Environmental Impact Statement (EIS) dated May, 1997 along with other pertinent information presented in the UCRB Draft EIS.

Comment #5
The EA fails to sufficiently analyze the use of mechanical or hand-pulling of weeds.

Response
This alternative was discussed in this EA and was also discussed in both the Final FEIS and in Section C1 Non-chemical Vegetation Treatment Methods located in the FEIS Appendix (see response to comment #1). This method is an important component of the Proposed Action.

Comment #6
This document fails to analyze the adverse impacts of the use of chemical herbicides on BLM lands.

Response

The Environmental Consequences section of the FEIS analyzed adverse impacts of herbicides on soils, vegetation, erosion potential, and surface water impacts. The FEIS Appendix addressed non-target species hazard analysis, non-target species exposure analysis, and non-target species risk analysis (see response to comment #1).

Comment #7
It is also unclear whether this document addresses the use of supposed weed germination inhibitors/herbicides such as Oust, which is currently and expensively in vogue for cheatgrass "control" following fire. Does this EA purport to address use of sagebrush-killing and juniper-killing chemicals?

This EA fails to analyze the impacts of invasive species such as cheatgrass. It does not even mention medusahead.

Response
As stated in Section 3.4, cheatgrass (Bromus tectorum) and medusahead (Taeniatherum caput-medusae) are invasive weeds that have become established within the project area. These species are very persistent and the potential for their expansion is virtually unlimited. Based on this the noxious and invasive weed program will focus on those species listed in Appendix A. Treatment of annual grasses was addressed in the Boise District's 2004 Normal Fire Rehabilitation Plan and treatment of these species may occur after wildland fires.

As stated in Section 2.1.3, the treatment of juniper and sagebrush are beyond the scope of this EA. Juniper and sagebrush are not listed as noxious weeds or considered alien invasive species.

Comment #8
The EA fails to require the BLM, counties, and any others who are authorized to conduct weed control measures through herbicide applications to post signs to alert the public that chemicals were recently applied in the treated area.

Response
As discussed in the General Design Features for Weed Treatment section areas treated with herbicide would be posted with signs when specific herbicide product labels require this to occur. For most herbicides approved for use on BLM lands this is not a label requirement. In most cases once the herbicide has dried on the vegetation it is not considered a problem for people to enter treated areas. When weed control occurs in high use areas, such as campgrounds and recreation sites, these areas would be appropriately posted to inform the public of this activity. Information on these signs would include the herbicide used, date of application, and a contact number for further information.

Comment #9
There appears to be no thought given to monitoring the situation after the treatment(s).

Response
Monitoring is discussed in this EA on page 14 under II.B.2(e) monitoring.

Comment #10
The statement that OHV use would be in conformance with the land use plan raises significant concerns. Travel is restricted within WSAs, areas of erosive soil, steep slopes, or areas with wet or muddy ground conditions. Severely restricting OHV use for weed control efforts assures that the objectives for eradication, control, and confinement of weed infestations will not be met.

Response
Placing certain restrictions on off-road use would not only protect the natural resources but would also limit the steady expansion of roads and trails within this area. OHV use for weed control would be in compliance with applicable land use plans and regulations. Where OHV use was not specifically provided for in a land use plan, it may be authorized. This would occur on a case by case basis.

Wilderness Study Areas are required to be managed under BLM Interim Management Policy for Lands under Wilderness Review (IMP). The IMP prohibits any action that is considered to adversely affect a WSA's suitability for congressional wilderness designation. Because off-road travel has the potential to create new roads and trails, it would not be allowed in WSAs.

Travel is also restricted in areas with erosive soil, steep slopes, or areas with wet or muddy ground conditions to prevent new roads and trails from becoming established, to prevent soil erosion, and to prevent new weed infestations from establishing in these disturbed areas.

Because OHV travel would be restricted or limited in certain locations, weed control efforts within these areas may consist of mechanical treatments such as hand pulling, herbicide application with backpack sprayers, pack animals, and/or biological control. Although eradication, control, and confinement of weed infestations remain extremely important, the BLM must balance this with the need to protect the areas natural resources and also limit the steady expansion of roads and trails within these areas.

Comment #11
We have concerns regarding Russian-olive control as there are some areas where Russian-olives provide the only winter food for pheasants and quail.

Response
Treatment is not being proposed in areas where native vegetation has been replaced by large, dense stands of Russian-olive. The purpose of the proposed action is to remove Russian-olive in those areas where control is still feasible. Although there are many large, dense stands of Russian-olive established within the project area, treatment would focus on small, isolated stands with densities of less than 10 plants per acre. Control at this stage would prevent the establishment of dense stands of Russian-olive and would prevent the associated adverse site alterations such as loss of native plants and wildlife, water use, reduced nutrient cycling, and further invasion into new areas.

Comment #12

We are concerned about the use of Garlon 4 and Arsenal herbicides around bodies of water as they are both highly toxic to fish. We are concerned about impacts of herbicides on non-target species

Response
See Table 1 - Streamside, Wetland, and Riparian Habitat Herbicide Restrictions. Within 15 feet of live water only aquatic approved herbicides would be authorized if the application involves backpack sprayers or hand sprayers. If herbicide application involves either injecting or painting (cut-stump method), then only aquatic approved herbicides would be used where special status species are known to occur. If there are no known or suspected proposed, listed, or candidate species or critical habitat in the area non-aquatic herbicides, rated as a low level of concern, may be selectively applied through injecting or painting (cut stump method) to target species. Application would occur above the mean high water mark to individual plants. Both Arsenal and Garlon 4 fall in the moderate and high level of concern range and based on this would not be approved for use within 15 feet of live water.

By adhering to specific label restrictions and the restrictions outlined in Table 1, impacts to aquatic resources and non-target species would be minimal as treatment is selective and non-target species should not be affected.

Comment #13
Will native vegetation be planted or seeded after treatment?

Response
Seeding is beyond the scope of this EA. Any large scale projects (seedings or plantings) would be addressed under a separate EA prior to implementation.

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7.0 Appendices

Appendix A - Noxious (N) and Invasive (I) Weeds of Concern

Black Henbane (N) (Hyoscyamus niger) is a native of Europe and is often cultivated as an ornamental. This plant is an annual or biennial that grows up to 3 feet in height. It spreads by seeds and can grow in a wide range of environmental conditions. Each plant can produce between 10,000 to half a million seeds annually. Black henbane contains alkaloids, which can poison livestock

Buffalobur (N) (Solanum rostratum) is an annual and is native to the Great Plains region of the United States. This plant is drought tolerant but not highly competitive.

Canada thistle (N) (Cirsium arvense) is an aggressive, creeping perennial weed that infests crops, pastures, rangeland, and roadsides. As it establishes itself in an area, Canada thistle crowds out and replaces native plants, changes the structure and species composition of natural plant communities, and reduces plant and animal diversity. This highly invasive thistle prevents the coexistence of other plant species through shading, competition for soil resources and possibly through the release of chemical toxins poisonous to other plants. Generally, infestations start on disturbed ground, including ditch banks, overgrazed pastures, tilled fields or abandoned sites. It is difficult to control because its extensive root system allows it to recover from control attempts.

Common crupina (N) (Crupina vulgaris) is an erect winter annual, 1 to 3 feet tall. Adapted to a wide range of soil and climate conditions, common crupina can form solid stands. Although it is not toxic, livestock and wildlife tend to avoid common crupina as the stem and leaf margins develop short, stiff spines as the plant bolts.

Dalmatian toadflax (N) (Linaria dalmatica) and Yellow toadflax (Linaria vulgaris) are aggressive, highly competitive perennial noxious weeds that were introduced into North America as ornamentals, fabric dyes, and folk remedies. These plants escaped from gardens to infest farmland, pastures, and rangeland across the United States and Canada, displacing native plant species, livestock forage, and wildlife habitat. Toadflax thrives in a wide range of habitat types and climate zones and is extremely difficult to manage, partly because of localized biotypes that respond differently to herbicides and other management tactics. They are highly competitive in areas where summers tend to be dry. Areas of low competition between species, sparsely vegetated soils, and drier, open areas on rangeland are more susceptible to invasion in some cases, particularly south-and southeast-facing slopes.

Diffuse knapweed (N) (Centaurea diffusa) was introduced from Europe and is a biennial or short-lived perennial forb which reproduces only by seed. Flowers are mostly white, sometimes purple, and are located on each branch tip. Diffuse knapweed can be found in pastures, riparian areas, roadsides, and waste areas. It is a tough competitor on dry sites and rapidly invades and dominates disturbed areas

Dyer's woad (N) (Isatis tinctoria L.) is a member of the mustard family and is a native of southeastern Russia. Dyer's woad is classified as a biennial, although it occasionally grows as a summer annual. Dyer’s woad infestations often start on dry, gravely soil along roadsides, but soon invade range and cropland.

Field bindweed (N) (Convolvulus arvensis) is a long-lived perennial which produces a dense ground cover. Field bindweed is one of the most competitive perennial weeds. This plant can store a two-three year food supply in its extensive underground root system which can reach depths of 10 feet. Seeds can also remain viable in the soil for up to 50 years.

Hoary cress (N) (Cardaria draba), also referred to as whitetop, is a creeping perennial which reproduces by seed and roots. The extensive root system spreads horizontally and vertically with frequent shoots arising from the root stock. Once this plant is established, it is difficult to control. Hoary cress can be found growing along roadways, ditch banks, pasture, rangeland, and cultivated fields. It is a very aggressive plant that will eventually eliminate desirable vegetation. The plant is common on alkaline and disturbed soils.

Houndstongue (I) (Cynoglossum officinale) is a biennial or short-lived perennial that grows 1-4 ft tall. Houndstongue is a very strong competitor that competes with desirable forage. The seeds have the ability to attach to people, the coats of livestock, and vehicles, enabling this plant to spread great distances. Houndstongue is poisonous.

Leafy spurge (N) (Euphorbia esula L.) is an erect, branching, perennial 2 to 3 feet tall, with smooth stems and showy yellow flower bracts. Stems frequently occur in clusters from a vertical root that can extend 20-30 feet underground. Leafy spurge displaces native vegetation in rangelands through shading and by usurping available water and nutrients. Leafy spurge is an aggressive invader that can completely overtake large areas of open land.

Meadow hawkweed (N) (Hieracium caespitosum) is a perennial weed with shallow, fibrous roots. Stolons are extensive, creating a dense mat of hawkweed plants that can eliminate other vegetation. Meadow hawkweed thrives in meadows, rangelands, pastures and forests.

Mediterranean sage (I) (Salvia aethiopis L.) is an erect, coarse biennial or short-lived perennial, with a stout taproot. It has the capability to invade and establish in dry pastures and rangeland. It is non-palatable and can out-compete beneficial forage plants. This plant has the capability of establishing on disturbed sites and then moving into stable plant communities.

Musk thistle (N) (Carduus nutans) is an aggressive weed of foreign origin that occurs in pastures, rangeland, roadsides, and non-crop areas. It is a biennial weed, although occasionally it is an annual that reproduces solely from seed. Musk thistle often forms nearly impenetrable stands and can grow under a wide range of environmental conditions.

Orange hawkweed (N) (Hieracium aurantiacum) is a perennial weed that is an unpalatable, aggressive competitor that grows in meadows, grasslands, rangelands, and pastures.

Perennial pepperweed (N) (Lepidium latifolium) establishes rapidly and colonizes pastures, riparian habitats, and wet areas, as well as along roadsides, rangelands and field crop situations. It degrades nesting habitat for wildlife and displaces desirable species in natural areas and hay meadows.

Perennial sowthistle (N) (Sonchus arvensis) Perennial sowthistle is a native of Eurasia. This plant spreads by seed and rhizomes and can produce large, dense infestations. This plant prefers moist conditions for growth.

Poison hemlock (N) (Conium maculatum) grows in moist pastures and meadows where it has the potential to out-compete more desirable native species. All parts of the plant are extremely poisonous with the lower portions of the stem and root particularly deadly.

Poison ivy (I) (Toxicodendron rydbergii) is a woody shrub or vine with hairy looking aerial roots. It grows to 10 feet or more, climbing on trees, walls and fences or along the ground on trails. All parts of poison ivy, including the roots, are poisonous at all times of the year.

Puncturevine (N) (tribulus terrestris) is a prostrate annual introduced from Europe. It spreads by seed and normally grows on sandy, dry, or gravelly ground. Because this plant produces sharp, pointed burs it can reduce recreational use in many areas.

Purple loosestrife (N) (Lythrum salicaria) is a semi-aquatic, perennial that adapts readily to natural and disturbed wetlands. As it establishes and expands, it outcompetes and replaces native grasses, sedges, and other flowering plants that provide a higher quality source of nutrition for wildlife. The highly invasive nature of purple loosestrife allows it to form dense, homogeneous stands that restrict native wetland plant species, and reduce habitat for waterfowl.

Rush skeletonweed (N) (Chondrilla juncea) is perennial that ranges in height from one to four feet tall, with a taproot reaching down seven feet, or more. This weed thrives on well drained, sandy textured or rocky soils, along roadsides, in rangelands, pastures and grain fields displacing native or beneficial forage species for livestock and wildlife. Forage production is lowered when rush skeletonweed successfully outcompetes beneficial species for limited resources, particularly nitrogen.

Russian knapweed (N) (Acroptilon repens) is a creeping, herbaceous perennial that reproduces from seed and vegetative root buds. It typically invades disturbed areas, forming dense single-species stands. Once established, Russian knapweed uses a combination of adventitious shoots and allelopathic chemicals to spread outward into previously undisturbed areas.

Russian-olive (I) (Elaeagnus angustifolia L.) is a small, usually thorny shrub or small tree that can grow to 30 feet in height. Its stems, buds, and leaves have a dense covering of silvery to rusty scales. Russian-olive can out-compete native vegetation, interfere with natural plant succession and nutrient cycling, and tax water reserves. Although Russian-olive provides a plentiful source of edible fruits for birds, ecologists have found that bird species richness is actually higher in riparian areas dominated by native vegetation. Once Russian-olives occupy a site, there is a decrease in the suitability of the site for native riparian tree species and their associated vegetation.

Scotch thistle (N) (Onopordum acanthium) is a spiny biennial that usually occurs along roadsides, in waste areas, on rangelands, and along streams and bottomlands where moisture occurs. Scotch thistle competes with, and decreases, desirable forage. The sharp spines deter livestock and wildlife from grazing. If the stand is dense enough it will create a natural barrier that hinders animal movement.

Spotted knapweed (N) (Centaurea maculosa) is a perennial, taprooted Eurasian weed invading rangeland throughout the western United States and Canada. Spotted knapweed invasion is associated with reductions in biodiversity, wildlife and livestock forage, and increased soil erosion.

Tamarisk (I) (Tamarix ramosissima), also known as saltcedar, is an aggressive, woody shrub or small tree that grows in dense stands along lakes, reservoirs, rivers, streams, springs and riparian areas. Tamarisk was introduced into the United States as an ornamental in the 19th century and has been utilized as an erosion control agent in the past. Over time it has spread throughout the west and caused major changes to natural environments. These prolific, nonnative species produce massive quantities of seed and can propagate from buried or submerged stems. Tamarisk alters environments by crowding out native plant species, increasing soil salinity, increasing sediment deposition, lowering wildlife values, consuming large quantities of water, increasing soil salinity and increasing fire frequency. In many areas, it occupies previously open spaces and is adapted to a wide range of environmental conditions. Once established in an area, it typically spreads and persists.

Yellow starthistle (N) (Centaurea solstitialis) is an aggressive annual that grows from a taproot and stands 1 to 3 feet tall. Infestations can reduce wildlife habitat and forage, displace native plants, and decrease native plant and animal diversity. Yellow starthistle is best adapted to open grasslands and is generally associated with deep well-drained soils.

Appendix B - Effectiveness of Mechanical and Biological Control Treatments

Invasive Species	Mechanical Treatment	Biological Control Treatment
Black Henbane	Black henbane can be difficult to mechanically treat (hand-pull) but hand-pulling is an effective control method.	No biological control agents are available
Buffalobur	Hand-pulling and repeated cutting of this plant are effective treatments.	No biological control available.
Canada thistle	Hand-pulling is not considered to be an economically effective means of controlling Canada thistle. This weed can survive hand-pulling once or twice a month for many years before its root reserves are depleted.	Biological control agents are available for Canada thistle
Common crupina	Hand-pulling small infestations every two-four weeks each spring and summer is an effective treatment	No biological control currently available.
Dalmatian toadflax	Hand-pulling small infestations can be effective.	Biological control agents are available for dalmatian toadflax.
Diffuse knapweed	Hand-pulling is effective if enough of the taproot is removed to discourage sprouting. Hand-pulling needs to occur three times per year for as many years as additional knapweed appears.	Biological control agents are available for diffuse knapweed.
Dyer's woad	Mechanical treatment is effective if enough of the taproot is removed to discourage sprouting. Hand-pulling needs to occur two to three times per year for several years.	A rust pathogen has spread onto populations of dyers woad throughout Idaho.
Field bindweed	Mechanical treatment is ineffective in controlling this weed.	Biological control agents are available for field bindweed.
Hoary cress (white top)	Successful mechanical control requires complete plant removal within 10 days after weed emergence throughout the growing season for 2-4 years.	No biological control agents are currently available.
Houndstongue	Mechanical treatment is effective if the plant is cut below ground level.	There are currently no approved biological control agents for hounds tongue but potential agents have been identified and are being studied for possible release.
Leafy spurge	Hand-pulling is not an effective mechanical treatment due to the depth of the root system and numerous root buds.	Biological control agents are available for leafy spurge.
Meadow hawkweed	Mechanical treatment of hawkweed has had limited success.	There are currently no approved biological control agents for meadow hawkweed but potential agents have been identified and are being studied for possible release.
Mediterranean sage	Mechanical methods that sever the root below the soil surface will kill this plant.	Biological control agents are available for Mediterranean sage.

Invasive Species	Mechanical Treatment	Biological Control Treatment
Musk thistle	Mechanical methods that sever the root below the soil surface will kill this plant.	Biological control agents are available for musk thistle.
Orange hawkweed	Mechanical treatment of hawkweed has had limited success.	There are currently no approved biological control agents for orange hawkweed but potential agents have been identified and are being studied for possible release.
Perennial pepperweed	Mechanical treatment of perennial pepperweed has had limited success as plants can resprout from root fragments	No biological control agents are currently available for perennial pepperweed.
Perennial sowthistle	Mechanical treatment of perennial sowthistle has had limited success as plants can resprout from root fragments	No biological control agents are currently available for perennial sowthistle
Poison hemlock	Mechanical treatment of poison hemlock will kill the plant.	Biological control agents are available for poison hemlock.
Poison ivy	Mechanical treatment of poison ivy will kill the plant.	No biological control currently available for poison ivy.
Puncturevine	Removing plants through mechanical treatment can be effective.	Biological control agents are available for puncture vine
Purple loosestrife	Small infestations can be controlled with mechanical treatment but it is seldom effective for older plants or large infestations.	Biological control agents are available for purple loosestrife.
Rush skeletonweed	Mechanical treatment can provide effective control of very small infestations. Hand-pulling requires removal of plant growth 2-3 times per year for 6-10 years.	Biological control agents are available for rush skeletonweed.
Russian knapweed	Mechanical treatment can provide effective control of very small infestations.	Biological control agents are available for Russian knapweed.
Russian-olive	Mechanical treatment has not been effective due to this species ability to re-sprout.	No biological controls are currently available for Russian-olive.
Scotch thistle	Mechanical methods that sever the root below the soil surface will kill this plant.	No biological control currently available for Scotch thistle.
Spotted knapweed	Mechanical treatment can provide effective control of very small infestations.	Biological control agents are available for spotted knapweed.
Tamarisk (salt cedar)	Mechanical treatment has not been effective due to this species ability to re-sprout.	There are currently no approved biological control agents for salt cedar but a potential agent has been identified and is being studied for possible release.
Yellow starthistle	Mechanical treatment can provide effective control to this winter annual.	Biological control agents are available for yellow starthistle.

Invasive Species	Mechanical Treatment	Biological Control Treatment
Yellow toadflax	Hand-pulling small infestations can be effective.	Biological control agents are available for yellow toadflax.

Information for this table was derived from Sheley and Petroff, 1999, Biological Control of Invasive Plants in the United States, 2004, and Young, 1995.

Appendix C – Herbicides Approved for use on BLM Lands (November 2006)

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Atrazine	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Atrazine 4F	Albaugh/Agri-Star	42750-45
		Atrazine 4L	Loveland Products Inc.	34704-69
		Atrazine 90WDG	Loveland Products Inc.	34704-622
		AAtrex Nine-O	Syngenta	100-585
		AAtrex 4L	Syngenta	110-497
		Atrazine 4 L	Setre (Helena)	5905-470
		Atrazine 90DF	Setre (Helena)	35915-3-38167
Bromacil	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Hyvar X	DuPont	352-287
		Hyvar XL	DuPont	352-346
Bromacil + Diuron	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Kroval I DF	DuPont	352-505
		Weed Blast Res. Weed Cont.	Loveland Products Inc.	34704-576
		DiBro 2+2	Nufarm Americas Inc.	228-227
		DiBro 4+4	Nufarm Americas Inc.	228-235
		DiBro 4+2	Nufarm Americas Inc.	228-386
		Weed Blast 4G	SSI Maxim	34913-19
Chlorsulfuron	AZ, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Telar DF	DuPont	352-522
Clopyralid	AZ, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Reclaim	Dow AgroSciences	62719-83
		Stinger	Dow AgroSciences	62719-73
		Transline	Dow AgroSciences	62719-259
		Spur	Albaugh, Inc.	42750-89
		Pyramid R&P	Albaugh, Inc.	42750-94
Clopyralid + 2,4-D	AZ, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Curtail	Dow AgroSciences	62719-48
		Commando	Albaugh, Inc.	42750-92
2,4-D	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	Agrisolution 2,4-D LV6	Agriliance, L.L.C.	1381-101
		Agrisolution 2,4-D Amine 4	Agriliance, L.L.C.	1381-103
		Agrisolution 2,4-D LV4	Agriliance, L.L.C.	1381-102

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
2,4-D - cont.		Five Star	Albaugh, Inc./Agri Star	42750-49
		D-638	Albaugh, Inc./Agri Star	42750-36
		Aqua-Kleen	Cerexagri, Inc.	228-378-4581
		2,4-D LV6	Helena Chem. Co.	4275-20-5905
		2,4-D Amine	Helena Chem. Co.	5905-72
		Opti-Amine	Helena Chem. Co.	5905-501
		Barrage HF	Helena	5905-529
		HardBall	Helena	5905-549
		Unison	Helena	5905-542
		Clean Amine	Loveland Products Inc.	34704-120
		Low Vol 4 Ester Weed Killer	Loveland Products Inc.	34704-124
		Low Vol 6 Ester Weed Killer	Loveland Products Inc.	34704-125
		LV-6 Ester Weed Killer	Loveland Products Inc.	34704-6
		Saber	Loveland Products Inc.	34704-803
		Saber CA	Loveland Products Inc.	34704-803
		Salvo	Loveland Products Inc.	34704-609
		Savage DF	Loveland Products Inc.	34704-606
		Aqua-Kleen	NuFarm Americas Inc.	71368-4
		Esteron 99C	NuFarm Americas Inc.	62719-9-71368
		Weedar 64	NuFarm Americas Inc.	71368-1
		Weedone LV-4	NuFarm Americas Inc.	228-139-71368
		Weedone LV-4 Solventless	NuFarm Americas Inc.	71368-14
		Weedone LV-6	NuFarm Americas Inc.	71368-11
		Formula 40	Nufarm Americas Inc.	228-357
		2,4-D LV 6 Ester	Nufarm Americas Inc.	228-95
		Platoon	Nufarm Americas Inc.	228-145
		WEEDstroy AM-40	Nufarm Americas Inc.	228-145
		Hi-Dep	PBI Gordon Corp.	2217-703
		2,4-D Amine	Setre (Helena)	5905-72
		Barrage LV Ester	Setre (Helena)	5905-504
		2,4-D LV4	Setre (Helena)	5905-90
		2,4-D LV6	Setre (Helena)	5905-93
		Clean Crop Amine 4	UAP-Platte Chem. Co.	34704-5 CA
		Clean Crop Low Vol 6 Ester	UAP-Platte Chem. Co.	34704-125
		Salvo LV Ester	UAP-Platte Chem. Co.	34704-609
		2,4-D 4# Amine Weed Killer	UAP-Platte Chem. Co.	34704-120
		Clean Crop LV-4 ES	UAP-Platte Chem. Co.	34704-124
		Savage DF	UAP-Platte Chem. Co.	34704-606
		Cornbelt 4 lb. Amine	Van Diest Supply Co.	11773-2
		Cornbelt 4# LoVol Ester	Van Diest Supply Co.	11773-3
		Cornbelt 6# LoVol Ester	Van Diest Supply Co.	11773-4
		Amine 4	Wilbur-Ellis Co.	2935-512

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
2,4-D - cont.		LoVol-4	Wilbur-Ellis Co.	228-139-2935
		Lo-Vol-6 Ester	Wilbur-Ellis Co.	228-95-2935
		2,4-D Amine 4	Albaugh, Inc/Agri Star	42750-19
		2.4-D LV 4	Albaugh, Inc/Agri Star	42750-15
		Solve 2,4-D	Albaugh, Inc/Agri Star	42750-22
		2,4-D LV 6	Albaugh, Inc/Agri Star	42750-20
Dicamba	AZ, CA, CO, ID, MT, ND,	Dicamba DMA	Albaugh, Inc/Agri Star	42750-40
	NM, NV, OK, East-OR,	Vision	Albaugh, Inc.	42750-98
	West-OR, SD, UT, WA, WY	Clarity	BASF Ag. Products	7969-137
		Rifle	Loveland Products Inc.	34704-861
		Banvel	Micro Flo Company	51036-289
		Diablo	Nufarm Americas Inc.	228-379
		Vanquish	Syngenta	100-884
Dicamba + 2,4-D	AZ, CA, CO, ID, MT, ND,	Outlaw	Albaugh, Inc./Agri Star	42750-68
	NM, NV, OK, East-OR,	Range Star	Albaugh, Inc./Agri Star	42750-55
	West-OR, SD, UT, WA, WY	Weedmaster	BASF Ag. Products	7969-133
		Rifle-D	Loveland Products Inc.	34704-869
		KambaMaster	Nufarm Americas Inc.	71368-34
		Veteran 720	Nufarm Americas Inc.	228-295
Diuron	AZ, CA, CO, ID, MT, ND,	Diuron 80DF	Agriliance, L.L.C.	9779-318
	NM, NV, OK, SD, UT,	Karmex DF	Griffin Company	1812-362
	WA, WY	Direx 80DF	Griffin Company	1812-362
		Direx 4L	Griffin Company	1812-257
		Direx 4L-CA	Griffin Company	1812-257
		Diuron 4L	Loveland Products Inc.	34704-854
		Diuron 80 WDG	Loveland Products Inc.	34704-648
		Diuron 80WDG	UAP-Platte Chem. Co.	34704-648
		Diuron-DF	Wilbur-Ellis	00352-00-508-02935
Fosamine	CA	Krenite	DuPont	
	If used in areas other than California, refer to the California Veg. Management FEIS and ROD Risk Assessment, 1988.			
Glyphosate	AZ, CA, CO, ID, MT, ND,	Aqua Star	Albaugh, Inc./Agri Star	42750-59
	NM, NV, OK, East-OR,	Forest Star	Albaugh, Inc./Agri Star	42570-61
	West-OR, SD, UT, WA, WY	Gly Star Original	Albaugh, Inc./Agri Star	42750-60
		Gly Star Plus	Albaugh, Inc./Agri Star	42750-61

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Glyphosate-continued		Glyfos Aquatic	Cheminova	4787-34
		ClearOut 41	Chem. Prod. Tech., LLC	70829-2
		ClearOut 41 Plus	Chem. Prod. Tech., LLC	70829-3
		Glyfos	Cheminova	4787-31
		Glyfos PRO	Cheminova	67760-57
		Glypro Plus	Dow AgroSciences	62719-322
		Glypro	Dow AgroSciences	62719-324
		Rodeo	Dow AgroSciences	62719-324
		Gly Star PRO	Albaugh, Inc./Agri Star	42750-61
		Accord SP	Dow AgroSciences	62719-322
		DuPont Glyphosate	DuPont	352-607
		DuPont Glyphosate VMF	DuPont	352-609
		Mirage	Loveland Products Inc.	34704-889
		Mirage Plus	Loveland Products Inc.	34704-890
		Aquamaster	Monsanto	524-343
		Roundup Original	Monsanto	524-445
		Roundup Original II	Monsanto	524-454
		Roundup Original II CA	Monsanto	524-475
		Honcho	Monsanto	524-445
		Honcho Plus	Monsanto	524-454
		Roundup PRO	Monsanto	524-475
		Roundup PRO Concentrate	Monsanto	524-529
		Roundup PRO Dry	Monsanto	524-505
		Roundup RT	Monsanto	524-454
		GlyphoMate 41	PBI Gordon Corp.	2217-847
		Aqua Neat	Nufarm Americas Inc.	228-365
		Foresters	Nufarm Americas Inc.	228-381
		Razor	Nufarm Americas Inc.	228-366
		Razor Pro	Nufarm Americas Inc.	228-366
		Rattler	Setre (Helena)	524-445-5905
		Buccaneer	Tenkoz	55467-10
		Buccaneer Plus	Tenkoz	55467-9
		Mirage	UAP-Platte Chem. Co.	524-445-34704
		Mirage Plus	UAP-Platte Chem. Co.	524-454-34704
Glyphosate + 2,4-D	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	Landmaster BW	Albaugh, Inc./Agri Star	42570-62
		Campaign	Monsanto	524-351
		Landmaster BW	Monsanto	524-351
Glyphosate + Dicamba	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	Fallowmaster	Monsanto	524-507

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Hexazinone	AZ, CA, CO, ID, MT, ND, NM, NV. OK, SD, UT, WA, WY	Velpar ULW	DuPont	352-450
		Velpar L	DuPont	352-392
		Velpar DF	DuPont	352-581
		Pronone MG	Pro-Serve	33560-21
		Pronone 10G	Pro-Serve	33560-21
		Pronone 25G	Pro-Serve	33560-45
		Pronone Power Pellet	Pro-Serve	33560-41
Hexazinone + Sulfometuron	AZ, CO, ID, MT, ND, NM, NV. OK, SD, UT, WA, WY	Westar	DuPont Crop Protection	352-626
Imazapyr	AZ, CO, ID, MT, ND, NM, NV. OK, SD, UT, WA, WY	Arsenal Railroad Herbicide	BASF	241-273
		Chopper	BASF	241-296
		Arsenal Applicators Conc.	BASF	241-299
		Arsenal	BASF	241-346
		Arsenal Technical	BASF	241-286
		Stalker	BASF	241-398
		Habitat	BASF	241-426
		Polaris RR	Nufarm Americas Inc.	241-273-228
		Polaris SP	Nufarm Americas Inc.	241-296-228
		Polaris AC	Nufarm Americas Inc.	241-299-228
		Polaris AQ	Nufarm Americas Inc.	241-426-228
		Polaris Herbicide	Nufarm Americas Inc.	241-346-228
		SSI Maxim Arsenal 0.5G	SSI Maxim Co., Inc.	34913-23
		Ecomazapyr 2 SL	Vegetation Man., LLC	74477-6
		Imazapyr 2 SL	Vegetation Man., LLC	74477-4
Imazapyr + Diuron	AZ, CO, ID, MT, ND, NM, NV. OK, SD, UT, WA, WY	TopSite	BASF	241-344
		Sahara DG	BASF	241-372
		SSI Maxim Topsite 2.5G	SSI Maxim Co., Inc.	34913-22
Imazapic		Plateau	BASF	241-365
	FOR EXPERIMENTAL USE ONLY – Not more than 15 total acres until NEPA document is completed and approved. Must be used only in cooperation with University or Agency Weed Scientist or Chemical Technical Representative. At present – only registered for weed control, native grass establishment and turf growth suppression on Pastures, Rangeland, and Non-cropland Areas.			
THE SIZE OF EACH PLOT MUST NOT EXCEED 5 ACRES AND NO MORE THAN 3 PLOTS PER FIELD OFFICE/STATION.				
Mefluidide	AZ, CO, ID, MT, ND, NM, NV. OK, SD, UT, WA, WY	Embark 2-S	PBI Gordon Corp.	2217-759

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Metsulfuron methyl	AZ, CO, ID, MT, ND, NM, NV. OK, SD, UT, WA, WY	Escort	DuPont	352-439
		Escort XP	DuPont	352-439
		Cimarron	DuPont	352-616
		Metsulfuron Methyl DF	Vegetation Man., L.L.C.	74477-2
		Patriot	Nufarm Americas Inc.	228-391
		PureStand	Nufarm Americas Inc.	71368-38
Picloram	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	Triumph K	Albaugh, Inc.	42750-81
		Triumph 22K	Albaugh, Inc.	42750-79
		Grazon PC	Dow AgroSciences	62719-181
		Tordon K	Dow AgroSciences	62719-17
		Tordon 22K	Dow AgroSciences	62719-6
Picloram + 2,4-D	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	Tordon 101M	Dow AgroSciences	62719-5
		Tordon 101 R Forestry	Dow AgroSciences	62719-31
		Tordon RTU	Dow AgroSciences	62719-31
		Grazon P+D	Dow AgroSciences	62719-182
		Pathway	Dow AgroSciences	62719-31
		GunSlinger	Albaugh, Inc.	42750-80
Simazine	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Princep 4L	Syngenta	100-526
		Princep Cali 90	Syngenta	100-603
		Simazine 4L	Loveland Products Inc.	34704-687
		Simazine 90 WDG	Loveland Products Inc.	34704-686
Sulfometuron methyl	AZ, CO, ID, MT, ND, NM, NV. OK, SD, UT, WA, WY	Oust	DuPont	352-401
		Oust XP	DuPont	352-601
		SFM 75	Vegetation Man., L.L.C.	72167-11-74477
		Spyder	Nufarm Americas Inc.	228-408
Tebuthiuron	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Spike 20P	Dow AgroSciences	62719-121
		Spike 80W	Dow AgroSciences	62719-107
		Spike 1G	Dow AgroSciences	1471-104
		Spike 40P	Dow Agro Sciences	62719-122
		Spike 80DF	Dow AgroSciences	62719-107
		SpraKil S-5 Granules	SSI Maxim Co., Inc.	34913-10
Tebuthiuron + Diuron	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA WY	SpraKil SK-13 Granular	SSI Maxim Co., Inc.	34913-15
		SpraKil SK-26 Granular	SSI Maxim Co., Inc.	34913-16

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Triclopyr	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Garlon 3A	Dow AgroSciences	62719-37
		Garlon 4	Dow AgroSciences	62719-40
		Remedy	Dow AgroSciences	62719-70
		Pathfinder II	Dow AgroSciences	62719-176
		Tahoe 3A	Nufarm Americas Inc.	228-384
		Tahoe 4E	Nufarm Americas Inc.	228-385
		Ecotriclopyr 3 SL	Vegetation Man., LLC	72167-49-74477
		Triclopyr 3 SL	Vegetation Man., LLC	72167-49-74477
Triclopyr + 2,4-D	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Crossbow	Dow AgroSciences	62719-260
Triclopyr + Clopyralid	AZ, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Redeem	Dow AgroSciences	62719-337

* Refer to the complete label prior to considering the use of any herbicide formulation. Label changes can impact the intended use through, such things as, creation or elimination of Special Local Need (SLN) or 24 (c) registrations, changes in application sites, rates and timing of application, etc.

** Just because a herbicide has a Federal registration, it may or may not be registered for use in California. This column identifies those formulations for which there is a California registration. For BLM purposes, it is taken one step further, a particular formulated herbicide may have a California and Federal registration and still not be available for use on BLM administered lands because the active ingredient is not approved according to the California Vegetation Management Environmental Impact Statement Record of Decision and may require tiering to the appropriate EIS.

Appendix D - Sample Worksheet Assessing Risk on Aquatic Species from Herbicide Applications

Methodology for Determining Level of Concern	Example using 2,4-D (amine)
Maximum application rate (known constant based on label rates)	3 lb ai/ac (pounds active ingredient per acre)
EEC - Estimated Environmental Concentration (from Urban and Cook (1986) table based on direct application to a pond 1 acre-foot in volume) measured in ppb (parts per billion), and converted to ppm (parts per million)	at 3 lb ai/ac, in 1 acre-foot water, the EEC = 1103 ppb or 1.103 ppm
Toxicity - the 96 hour LC50 (a standard toxicity test) for a specific aquatic species. The LC50 is the concentration of a toxicant that causes mortality in 50% of the test organisms under a specific set of conditions.	LC50 = 250 mg/L (milligrams per liter), or = 250 ppm (testing conducted with rainbow trout)
Safety Factor - A divisor applied to the toxicity value to establish a concentration below which risk is acceptable (as determined by EPA). For endangered aquatic species, EPA uses 1/20 of the LC50 value.	1/20 of the LC50 = 12.5 ppm (250 ppm x 1/20 = 12.5 ppm)
The EPA has determined that there is a presumption of unacceptable risk to endangered aquatic species if the EEC > 1/20 LC50. Conversely, if the EEC < 1/20 LC50, the application rate used to calculate the EEC should not result in an unacceptable risk to endangered aquatic species.	For the 2,4-D amine, where: EEC = 1.103 ppm at 3 lb ai/ac maximum application rate 1/20 the LC50 = 12.5 ppm EEC is < 1/20 of the LC50
Because of some of the concerns associated with this risk assessment (See Table 4 in the text) and because the EPA does not define a magnitude of risk for endangered species, especially when the EEC < 1/20 LC50, a gradual "level of concern" scale was developed based on how close the EEC value is to the 1/20 LC50. The 1/20 LC50 value is divided by the EEC value and the quotient represents the level of concern for a given herbicide. The level of concern scale is as follows: If the 1/20 LC50 â EEC is a quotient of >10, the level of concern is low. If the 1/20 LC50 â EEC is a quotient of >1 but æ10, the level of concern is moderate. If the 1/20 LC50 â EEC is a quotient of æ1, the level of concern is high.	For 2,4-D amine: 1/20 the LC50 = 12.5 ppm EEC = 1.103 ppm 12.5 ppm â1.103 ppm = 11 Since the quotient is >10, the level of concern is low.

The risk assessment is based on direct application of the active ingredient of a chemical product to 1 acre-foot of water. This illustrates an extreme case, only remotely likely to occur during implementation of the proposed action. The risk of a direct application is mitigated in the proposed action by selecting appropriate application techniques (hand sprayer vs cut-stump) and applying buffers adjacent to water, taking into account such factors as chemical volatility, wind speed and direction, temperature, precipitation, and ground slope. While chemical application may occur in association with ponds and lakes (i.e., lentic systems), further mitigation of the assessed risk may be realized when treating noxious weeds in association with the numerous rivers and streams (i.e., lotic systems) within the proposed action area.

Appendix E - Vegetation Cover Types

Low Elevation Shrub Steppe

The Low-Elevation Shrub Steppe is dominated by Wyoming big sagebrush (Artemisia tridentata ssp. wyomingensis) and basin big sagebrush (Artemisia tridentata ssp. tridentata). This vegetation type is found in areas with approximately 8-12 inches average annual precipitation. Much of the Low-Elevation Shrub Steppe is comprised of degraded rangelands that have been invaded by annual exotic vegetation. Basin big sagebrush occurs on deep and well-drained sandy soils. Wyoming big sagebrush occurs on finer-textured, shallow soils with limited water infiltration. Gray rabbitbrush (Chrysothamnus nauseosus) and green rabbitbrush (Chrysothamnus viscidiflorus) may be co-dominant in sagebrush communities that have been influenced by fire.

Understory vegetation associated with Low-Elevation Shrub Steppe is dominated by perennial grasses and a variety of annual and perennial forbs. Dominant grasses include bluebunch wheatgrass (Pseudoroegneria spicata), western wheatgrass (Pascopyrum smithii), thickspike wheatgrass (Elymus macrourus), Thurber's needlegrass (Achnatherum thurberianum), Sandberg bluegrass (Poa secunda), bottlebrush squirreltail (Elymus elymoides), needle-and-thread grass (Hesperostipa comata), Indian ricegrass (Achnatherum hymenoides). Common forbs include long-leaf phlox (Phlox longifolia), Hood's phlox (Phlox hoodii), Hooker's balsamroot (Balsamorhiza hookeri), taper-tip hawksbeard (Crepis acuminata), fern-leaved desert-parsley (Lomatium dissectum) and woolly-pod milkvetch (Astragalus purshii). Low-Elevation Shrub Steppe communities in good condition may support biological soil crusts in the interspaces. The composition of biological crusts is dependent on soil texture and chemistry, but is usually dominated by lichens, mosses, and cyanobacteria.

Salt Desert Shrub

Halophytes and succulent shrubs, which are saline-tolerant, characterize the salt desert shrubcommunity and include four-wing saltbush (Atriplex canescens), shadscale (A. confertifolia), winterfat (Krascheninnikovia lanata), bud sage (Artemisia spinescens), and greasewood (Sarcobatus vermiculatus). Common grasses include inland saltgrass (Distichlis stricta), alkali sacaton (Sporobolus airoides), Indian rice-grass, and bottlebrush squirreltail. Productivity in this vegetation type is relatively low and understory vegetation is naturally sparse. Greasewood favors deeper soils with an accessible water table, as well as high pH and alkaline content. Biological soil crusts are common in good condition Salt Desert Shrub communities due to sparse vegetative cover, large interspaces, and fine-textured soils with high calcium carbonate or saline content at the surface. These crusts are primarily dominated by lichens and cyanobacteria.

Perennial Grass

Perennial grasslands are comprised of native sites with Idaho fescue (Festuca idahoensis), bluebunch wheatgrass, western wheatgrass, thickspike wheatgrass, Thurber's needlegrass, Sandberg bluegrass, needle-and-thread grass, Great Basin wildrye (Leymus cinereus) and Indian ricegrass, as well as seedings of exotic and native perennial grass cultivars such as crested wheatgrass (Agropyron cristatum), Siberian wheatgrass (Agropyron fragile), Snake River wheatgrass (Elymus wawawaiensis), bluebunch wheatgrass, thickspike wheatgrass, and Great Basin wildrye. Historically, native perennial grasslands formed part of the seral mosaic of the sagebrush steppe, although it is unclear how widespread they were across the landscape. Perennial grassland is considered an early to intermediate seral stage. Perennial grasslands dominated by crested wheatgrass or other non-native cultivars are stable communities that do not trend

toward recovery to sagebrush-steppe habitat as quickly as native perennial grasslands. Sagebrush re-establishment in crested wheatgrass stands is apparent in portions of the project area. On more suitable sites and in higher precipitation zones, sagebrush will typically reclaim exotic seedings in 20 or 30 years.

Mid-Elevation Shrub Steppe

The mid-elevation sagebrush steppe occurs from about 5000-7500 feet elevation in precipitation zones that range from 12 to 20 inches annually. The Mid-Elevation Shrub Steppe vegetation type occurs on cooler soils, and often has more intact native communities than the Low-Elevation Shrub type. Dominant shrubs are mountain big sagebrush (Artemisia tridentata ssp. vaseyana), gray rabbitbrush, green rabbitbrush, low sagebrush (Artemisia arbuscula), black sagebrush (Artemisia nova), and bitterbrush (Purshia tridentata). Longleaf sagebrush (Artemisia longiloba) and silver sagebrush (Artemisia cana) dominate minor communities. Mid-Elevation Shrub Steppe is less vulnerable to conversion to annual grasslands than Low-Elevation Shrub Steppe; however, exotic annual grasses can invade and dominate these communities, particularly drier/warmer and/or degraded sites. Juniper has invaded some Mid-Elevation Shrub communities as a result of fire suppression.

Perennial grasses such as Idaho fescue, bluebunch wheatgrass, prairie junegrass (Koelaria cristata), and Sandberg bluegrass dominate the understory of Mid-Elevation Shrub Steppe communities. Perennial forbs are also important understory components of this type and may include arrowleaf balsamroot (Balsamorhiza sagittata), Indian paintbrush (Castilleja spp.), owl-clover (Orthocarpus spp.), beardtongue (Penstemon spp.), and buckwheat (Eriogonum spp.).

Biological soil crusts may be present in Mid-Elevation Shrub communities on drier sites with a lower density of understory vegetation. Low sagebrush, black sagebrush, and longleaf sagebrush communities often have well-developed biological crusts occupying soil between the rocks that tend to be abundant on sites supporting these shrubs. These crusts tend to be dominated by a diversity of lichens and mosses. Areas with juniper encroachment often have a mat of twisted moss (Tortula ruralis) where there is no competition from herbaceous understory vegetation. Unlike many biological crust components, this moss is tolerant of shading and moisture from the juniper overstory.

Juniper Woodlands

The Juniper vegetation type includes stands of natural juniper as well as areas where juniper has encroached into riparian, Mid-Elevation Shrub Steppe, and Mountain Shrub vegetation types. Junipers primarily occur between 4,500 and 6,000 feet on a wide variety of soils and in 10-15 inch precipitation zones.

Biological soil crusts may be present in natural juniper and piñon-juniper depending on soil characteristic, precipitation, and density of the herbaceous understory. These crusts are dominated by lichens, mosses, and cyanobacteria. Areas with juniper encroachment often have a mat of twisted moss (Tortula ruralis) where there is no competition from herbaceous understory vegetation. Unlike many biological crust components, this moss is tolerant of shading and moisture from the juniper overstory.

Mountain Shrub

The Mountain Shrub vegetation type occurs as a transition community between sagebrush steppe and conifer types. Mountain Shrub is found at moderately high elevations, often in a mosaic with Douglas fir and aspen communities, on sites that are more mesic than sagebrush steppe (14-16 inch precipitation

zones) but drier than aspen (18-24 inch precipitation zones). Mountain Shrub is usually found on north and east slopes that tend to be cooler and moister than south and west aspects. Mountain Shrub is a highly diverse type containing chokecherry (Prunus virginiana), serviceberry (Amelanchier alnifolia), currant (Ribes spp.), mountain snowberry (Symphoricarpos oreophilus), and elderberry (Sambucus racemosa), often intermingled with mountain big sagebrush. Mountain mahogany (Cercocarpus ledifolius) occurs on rocky, often fire-resistant inclusions. The Mountain Shrub type, with its high productivity and diverse herbaceous understory, provides important biodiversity, wildlife habitat and protective ground cover to the ecosystem.

Riparian

Riparian and wetland communities are defined as areas of land directly influenced by permanent water, which have visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and stream banks are typical riparian areas. Such sites as ephemeral streams, washes, or playas that do not support vegetation dependent upon free water in the soil are excluded from the riparian type. Healthy riparian areas generally can be identified by typical riparian vegetation such as cottonwoods (Populus spp.), willows (Salix spp.), sedges (Carex spp.), and rushes (Juncus spp.).

Appendix F - Special Status Species Vegetation

Slickspot peppergrass (Lepidium papilliferum) Proposed
Slickspot peppergrass is an annual or sometimes biennial forb. Slickspot peppergrass is currently proposed for designation as threatened or endangered status. This Idaho endemic occurs only in semi-arid sagebrush-steppe habitats between 2,200 and 5,400 feet elevation in southwestern Idaho, including the Snake River Plain, Owyhee Plateau and adjacent foothills in southwestern Idaho (Ada, Canyon, Elmore, Gem, Owyhee and Payette counties) (USFWS 2003c; GOSC et al. 2003). Native species that co-occur with slickspot peppergrass include Wyoming big sagebrush, basin big sagebrush, bluebunch wheatgrass, Thurber's needlegrass, Sandberg's bluegrass, and bottlebrush squirreltail. Non-native species that are frequently associated with slickspot peppergrass include cheatgrass, tumble mustard, bur buttercup, clasping pepperweed, and introduced perennial grasses. Threats to this species include degradation of slickspot and surrounding area habitat, trampling from livestock, and weed invasion. Flowering occurs from May through June.

Sixty-five percent of the known extant of occurrences of slickspot peppergrass are on land managed by the BLM or the U.S. Air Force (USFWS 2003c). The plant typically grows in small, sparsely vegetated "slickspots" (i.e. mini-playas or nitric sites) within larger sagebrush habitat. The slickspots may be as small as a square foot, or as large as half a basketball court, and usually are surrounded by big sagebrush, native bunchgrasses, wildflowers, mosses, and lichens. These microsites are often lower than surrounding areas, have impermeable soil layers, and retain water longer than the surrounding soil. Population modeling indicates the importance of years with above average precipitation in restocking the slickspot peppergrass seed bank.

Other Sensitive Plants
Sensitive plants occur in a wide diversity of habitats and soils. The majority of BLM sensitive plant species in the project area occur in big sagebrush habitat. The Type 2 species, which are rangewide/globally imperiled and commonly occur in the project area, are discussed below.

Aase's onion (Allium asseae)
Aase's onion is a perennial forb that occurs on coarse, sandy soil, most commonly on steep southerly and westerly exposures. It is typically found on or near ridgetops in sagebrush-grass communities, often with pineland threeawn (Aristida stricta) and bitterbrush species, from approximately 2,600 to 4,900-foot elevations. Aase's onion is endemic to Idaho in the lower foothills from the Boise to Weiser areas in Ada, Boise, Gem, Payette, and Washington counties. Threats include urbanization, sand mining, off-road vehicles, invasion of annual weedy grasses, and other exotics. Flowering occurs in late February through April.

Packard's milkvetch (Astragalus cusickii var. packardiae)
Packard's milkvetch is a perennial forb that occurs on sparsely vegetated, light colored soils, usually with Wyoming big sagebrush, at approximately 2,800-foot elevations. It is endemic to tributaries of Big and Little Willow creeks in Payette County, Idaho. Flowering occurs from May through July.

Mulford's milkvetch (Astragalus mulfordiae)
Mulford's milkvetch is a perennial forb that occurs on typically south-facing, sandy slopes and ridges from approximately 2,100 to 2,800-foot elevations with needle-and-thread grass, Indian ricegrass, and

bitterbrush species. It is found in the western part of the Snake River Plain in Ada, Owyhee, Payette, and Washington counties in Idaho. Threats include urbanization and grazing. This plant is now found only in pristine sites. Flowering occurs in May through June.

Palmer's evening-primrose (Camissonia palmeri)
Palmer's evening-primrose is a low growing tap-rooted annual or winter-annual. It occurs on dry, open, sandy places in the desert from the Larrea zone up into the sagebrush-juniper zone. Flowering occurs in March through June.

Parry's sedge (Carex parryana var. brevisquama)
Parry's sedge occurs on dry gumbo or gravelly soils in riparian/wetland areas. Also called "Indian Valley" sedge, Parry's sedge is endemic to the Indian Valley area of Adams County, Idaho. Flowering occurs from June through July.

Indian Valley sedge (Carex aboriginum)
Indian Valley sedge is a perennial grass-like plant which occurs on dry gumbo or gravelly soils in riparian/wetland areas. It is endemic to the Indian Valley area of Adams County, Idaho. Flowering occurs from June through July.

Cusick's false yarrow (Chaenactis cusickii)
Cusick's false yarrow is an annual forb which occurs in open places on volcanic ash soils, especially the Succor Creek Foundation, in the saltbush and Wyoming sagebrush zone at elevations of 2,400 to 4,300 feet. It is endemic to Canyon and Owyhee counties, Idaho. Threats include off-road vehicles and mining of the substrate to line irrigation ditches. Flowering occurs in April through June.

Packard's buckwheat (Eriogonum shockleyi var. packardiae)
Packard's buckwheat is a perennial forb that occurs on oolitic limestone outcrops, sandy loess over basalt, and cobbled desert pavement over deep sandy-loam. Associated vegetation is sparse, but may include common horsebrush (Tetradymia canescens), winterfat, shadscale, Indian ricegrass, needle-and-thread, and langloisia (Langloisia spp.). This species is endemic to southwest Idaho along the Snake River and a few tributaries in Ada and Owyhee counties. Flowering occurs from May through June.

Packard's desert parsley (Lomatium packardiae)
Packard's desert parsley is a perennial forb which occurs on volcanic ash, rhyolite, and rocky, clay soils in the sagebrush zone from approximately 3,000 to 4,300-foot elevations. It is found in Canyon and Owyhee counties, Idaho; Malheur and Lake Counties, Oregon; and Washoe and Humboldt counties, Nevada. Flowering occurs from April through June.

Smooth stickleaf (Mentzelia mollis)
Smooth stickleaf is an annual forb that occurs on brown, green, or gray volcanic ash derived from the Succor Creek Formation. It is associated with Wyoming big sagebrush, yellow phacelia (Phacelia lutea), and MacBride cleomella (Cleomella macbrideana) at approximately 3,600 to 4,600-foot elevations. Smooth stickleaf is found in Owyhee County, Idaho and Malheur County, Oregon. Flowering occurs from May through June.

Stalk-leaved monkey-flower (Mimulus patulus)

Stalk-leaved monkey-flower is an annual forb generally growing on damp rock walls. It is known from the Four Rivers Field Office of the Boise District. Flowering occurs from late June to early July.

Least phacelia (Phacelia minutissima)
Least phacelia is a small annual forb that occurs on vernally saturated, summer-drying, sparsely vegetated, partially shaded to fully exposed areas of bare soil. It is found in mud banks in meadows, at perimeters of California false hellebore (Veratrum californicum), mule ears (Wyethia amplexicaulis), and/or aspen stands, in sagebrush swales, along streambed highwater lines, or around springs, in flat to gently sloping areas. Least phacelia is found at elevations of approximately 5,900 to 6,900-feet. Threats include mineral exploration and development, livestock trampling, water developments and diversions, and competition with invasive weeds. Flowering occurs in April through July.

Malheur princesplume (Stanleya confertiflora)
Malheur princesplume is an annual or biennial forb that occurs on dry plains on somewhat sparsely vegetated, clay soils at elevations of approximately 2,400 to 5,000-feet. Found in Gooding, Owyhee, and Washington counties, Idaho; Harney and Malheur counties, Oregon. Flowering occurs from April through June.

Woven-spore lichen (Texosporium sancti-jacobi)
Woven-spore lichen occurs on well decomposed humus, flat or north-facing slopes on especially old clumps of Sandberg bluegrass in Wyoming big sagebrush/Thurber's needlegrass-bluebunch wheatgrass communities at elevations of approximately 2,900 to 3,300-feet. It is found in Ada and Elmore counties, Idaho; Los Angeles, Santa Barbara, San Diego, and San Benito counties, California; Benton and Klickitat counties, Washington; Jefferson and Wasco counties, Oregon. This plant is fertile year-round.

Owyhee clover (Trifolium owyheense)
Owyhee clover is a dwarf, xerophytic perennial forb which occurs on barren slopes, diatomaceous or yellow-green ash and tuff soils in Wyoming big sagebrush-grasslands at approximate elevations of 4,300 to 5,200-feet. In Idaho, Owyhee clover is known only from the Succor Creek area. Flowering occurs from May through June. Threats include removal of required substrate for road construction material and off-road vehicles.

Plumed Clover (Trifolium plumosum var. amplifolium)
Plumed clover is a Type 3 which is considered rare or uncommon but not imperiled

Appendix G - General Terrestrial Wildlife

Pronghorn antelope (Antilocapra americana)

The Bruneau Field Office has the largest area of pronghorn antelope habitat in southwestern Idaho. There are also resident and overwintering populations of pronghorn antelope in the Owyhee, Four Rivers, and Jarbidge Field Offices.

Pronghorn antelope preferentially select forbs in the spring, summer, and fall. Pronghorn select the most succulent, high-protein browse or grasses available when forbs are scarce. In summer, pronghorn supplement their forb diet with browse and utilize grasses during periods of green-up. The high protein content of early spring grasses may be particularly beneficial at a time when other forage is of low quality.

Salt desert shrubs, sagebrush and other shrubs provide valuable overwintering habitat for pronghorn antelope (USDA 2003b). In winter, shrubs are high in protein relative to other forage and make up the majority of the pronghorn diet. Important winter browse for pronghorn in the Great Basin includes winterfat (Krascheninnikovia lanata), Brickellia spp., sagebrush (Artemisia spp.), rabbitbrush (Chrysothamnus spp.), and bitterbrush (Purshia tridentata) (USDA 2003b). When vegetation is mostly covered with snow, pronghorn seek windswept areas and graze lichens.

Mule deer (Odocoileus hemionus) and elk (Cervus elaphus)

Mule deer and elk occur in a wide variety of habitats throughout the project area, including all the major upland cover types. Spring, summer and fall habitat occurs at mid-to-higher elevations where deer forage on a variety of grasses, forbs, and some shrubs throughout the spring and early summer and gradually shift to a diet progressively higher in shrubs beginning in mid-to-late summer as herbaceous vegetation cures and becomes less palatable. Elk tend to consume a diet higher in grasses yearlong but consume more woody vegetation in the late summer and fall.

There is crucial mule deer and elk overwintering habitat in all four Field Offices. This overwintering habitat generally occurs along the lower foothills and river breaks. Various shrubs including bitterbrush, mountain mahogany (Cercocarpus ledifolius), service berry (Amelanchier spp.), sagebrush and others provide important forage and cover. Annual grasses and other early maturing grasses also provide important late winter forage.

Migratory Birds

Migratory birds are a diverse group of neotropical bird species that occupy all habitat types on a seasonal basis. Many of these species are on the District's Type 5 Watch list while several others are on the BLM Sensitive Species list. The Watch list includes species that are not considered Idaho BLM sensitive species but current populations or habitat information suggests that these species may warrant sensitive species status in the future.

There is some short-grass habitat occupied by long-billed curlew (Numenius americanus) on the Four Rivers Field Office that is designated as an Area of Critical Environmental Concern (ACEC) for this species. Curlew nesting habitat also occurs in parts of the Owyhee, Bruneau and Jarbidge Field Offices. At lower elevations, these habitats generally consist of Wyoming sagebrush and salt desert shrub habitats that have burned and are now dominated by annual grasses or seeded to crested wheatgrass. Curlew can be observed nesting at mid elevations in recent burns, low sagebrush and meadow complexes. Habitat for this

species has actually increased over the last several decades along with the increased size and frequency of fires that has resulted in conversion of large areas of shrub steppe to grasslands.

Sagebrush Obligate Birds

In addition to Columbian sharp-tailed grouse and greater sage other sagebrush obligate species include sage sparrows (Amphispiza belli) and Brewer's sparrows (Spizella breweri) (Type 3: Regional/State Imperiled species), a diversity of neotropical migrants, and other species (including ground nesters). The Wyoming big and basin big sagebrush cover type provides important habitat for these species.

Other Terrestrial Wildlife

A large number of other species including: 1) a variety of mammalian predators, 2) small mammals including bats, shrews, rodents, rabbits and hares, 3) waterfowl, 4) non-native game birds including California quail (Callipepla californica), chukar (Alectoris chukar), gray partridge (Perdix perdix), and ringneck pheasant (Phasianus colchicus), and 5) a diversity of reptiles and amphibians also occur throughout the project area. Every vegetation community type within the District provides important year-long or seasonal habitat for some combination of these animals.

Appendix H - Special Status Species Wildlife

Type 1 - Federally Threatened, Endangered, and Candidate Species

Gray wolf (Canis lupus)
The gray wolf is known to occur only in the Four Rivers Field Office and is a re-introduced non-essential, experimental population (ESA Section 10j) currently managed by the USFWS. Historically, wolves utilized a broad spectrum of habitats including grasslands, sagebrush steppes, coniferous and mixed forests and alpine areas. Habitats used by wolves typically have an abundance of natural prey.

Northern Idaho ground squirrel (Spermophilus brunneus brunneus)
The northern Idaho ground squirrel is an ESA threatened species and is known to exist only in Adams and Valley Counties of western Idaho, included in the Four Rivers Field Office (USFWS 2003d). No occupied sites are known to occur on BLM lands, the historic range of the species is contains lands administered by BLM. The entire range of the subspecies is about 20 by 61 miles, and as of 2002, 34 of 40 known population sites were occupied. The population was estimated to be 450 to 500 animals. The northern Idaho ground squirrel emerges in late March or early April and remains active above ground until July or early August (USFWS 2003d).

The northern Idaho ground squirrel occurs in shallow, dry rocky meadows usually associated with deeper, well-drained soils and surrounded by ponderosa pine and Douglas-fir forests at elevations of about 3,000 to 5,400 feet. Ponderosa pine/shrub-steppe habitat association with south-facing slopes less than 30 percent at elevations below 6,000 feet is considered potentially suitable habitat. Diet consists of forbs, grasses, and seeds. The northern Idaho ground squirrel is primarily threatened by habitat loss due to forest encroachment into former suitable meadow habitats that results in habitat fragmentation, eliminates dispersal corridors, and confines populations into small isolated habitat islands.

Southern Idaho ground squirrel (Spermophilus brunneus endemicus)
The southern Idaho ground squirrel is an ESA candidate species. The southern Idaho subspecies occurs in an area about 48 by 113 miles that extends from Emmett, Idaho northwest to Weiser, Idaho and the surrounding areas of Squaw Butte, Midvale Hill, and Henley Basin in Gem, Payette, and Washington Counties including the Four Rivers Field Office. Its range is bounded on the south by the Payette River, on the west by the Snake River and on the northeast by lava flows with little soil development. Their habitat is typified by rolling hills, basins and flats composed of lake and fluvial sediments between 2,200-3,200 feet elevation. The range of the southern Idaho subspecies formally extended as far north as Goodrich, Idaho in Adams County however, recent studies have shown a severe decline in the number of occupied population sites in the northern part of their range.

The southern Idaho ground squirrel spends much of its time underground and a high quality diet of green vegetation and seeds is required to store enough fat to survive long months of torpor. Adults emerge from seasonal torpor in late January or early February, depending on elevation and micro-habitat conditions.

Canada lynx (Lynx Canadensis)
The Canada lynx, an ESA threatened species, has the potential to occur only in the northern Four Rivers Field Office. All weed control activities would follow the interim guidance of the Lynx Conservation and Assessment Strategy 2000, until such time that Resource Management Plans are amended to include new

conservation measures to guide activities that may potentially affect Canada Lynx. Approximately 420 acres of suitable lynx habitat have been identified on lands administered by the Four Rivers Field Office, all of which are located within a WSA. There are an additional estimated 580 acres of suitable lynx habitat within the boundaries of the Four Rivers Field Office that is administered by the Cottonwood Field Office of the BLM Upper Columbia-Salmon Clearwater District.

Bald Eagle (Haliaeetus leucocephalus)
The bald eagle is an ESA threatened species that winters primarily along the Snake River, the South Fork of the Boise River and has occasionally been observed wintering along the Owyhee River, Jordan Creek and other drainages within the Boise District. Some nesting occurs along the Payette River and Boise River drainages. Nests are generally constructed in conifers or cottonwood trees within close proximity to rivers or other water bodies that support adequate food supplies including fish, waterfowl and variety of other birds, small mammals and big game carrion.

Yellow-billed cuckoo (Coccyzus americanus)
The yellow-billed cuckoo is a candidate for ESA listing. The yellow-billed cuckoo is a migratory bird which is a summer resident of California, Oregon, Washington, Arizona, Colorado, Montana, Idaho, Nevada, Wyoming, New Mexico, Texas, Utah, British Columbia and Mexico, and winters in northern South America south to northern Argentina.

The species is considered a rare summer resident in Idaho, with 64 recorded observations for the State. Historical records and recent surveys indicate the species is most abundant in southeastern Idaho, particularly along the Snake River corridor. A total of eight historic observations of the species are known for the portion of Idaho that includes the project area. Most historic sites in southwestern Idaho do not currently contain suitable habitat for nesting yellow-billed cuckoo. Surveys conducted in 2003 in southwestern Idaho within habitat that appeared suitable did not yield any yellow-billed cuckoo observations (TREC, Inc. 2003).

Dense understory foliage appears to be an important factor in nest site selection and cottonwood trees are important foraging habitat. The principal threat in the summer range of the species is the loss of riparian habitat, which has always been naturally limited in the western United States (USFWS 2003a). Available breeding habitats for yellow-billed cuckoos have also been substantially reduced in area and quality by groundwater pumping and the replacement of native riparian habitats by invasive non-native plants, particularly tamarisk (Tamarix ramosissima) in the southwestern United States and to a lesser degree in southern Idaho.

Rangewide/Globally Imperiled Species

Greater Sage-grouse (Centrocercus urophasianus)
Greater sage-grouse is a Type 2 BLM sensitive species that is rangewide/globally imperiled and currently undergoing a full status review by the USFWS. . This status review will determine whether the greater sage-grouse warrants listing as a threatened or endangered species under the Endangered Species Act. Extant greater sage-grouse populations are distributed from north-central Oregon, southern Idaho, and southern Alberta and Saskatchewan south to eastern California and extreme western North and South Dakota. Isolated populations also occur in eastern Washington.

Sage-grouse are obligate residents of the sagebrush ecosystem, and usually inhabit sagebrush-grassland or juniper-sagebrush-grassland communities (WSSGC 1982; 1974). Sage-grouse occur throughout the range of big sagebrush, except on the periphery of big sagebrush distribution or in areas where it has been eliminated. Successful nesting and brood-rearing are dependent upon the presence of diverse perennial grasses and key forbs which provide cover and forage.

The breeding and nesting period of greater sage-grouse is from the last week in February through the first week in June. The breeding leks are usually small open areas of 0.1 to 10.0 acres, but may be as large as 100 acres (WSSGC 1982; 1974).

Pygmy rabbit (Brachylagus idahoensis)
The pygmy rabbit is a Type 2 BLM sensitive species that occurs throughout the Great Basin. The population status is poorly understood. The pygmy rabbit is a sagebrush obligate and preferred habitat is relatively taller and thicker big sagebrush stands with deep soils. Observations of pygmy rabbits in Owyhee County, and ongoing surveys being conducted by BLM biologists and others have revealed that this species is widely but sparsely distributed in Owyhee County. The only recently recorded occurrence of a pygmy rabbit on BLM land within the Jarbidge Field Office was at Grassy Hills, and the pygmy rabbit is very likely extirpated from the NCA and all portions of the Snake River Plain except the northeastern fringe. There are no CDC pygmy rabbit occurrence records in Boise County. One recent record exists from Payette County however it is very likely that they also occur in portions of Elmore, Ada, Boise, Washington and Gem counties.

Type 3 - Regional/State Imperiled Species

Columbian sharp-tailed grouse (Tympanuchus phasianellus columbianus)
The Columbian sharp-tailed grouse is a Type 3 BLM sensitive species that is regionally/state imperiled. The Columbian sharp-tailed grouse is one of seven recognized subspecies of sharp-tailed grouse that have been described in North America. Historically, Columbian sharp-tailed grouse range extended westward from the continental divide in Montana, Idaho, Wyoming, and Colorado to northeastern California and eastern Oregon and Washington; southward to northern Nevada and central Utah; and northward through central and extreme southeastern British Columbia. In the Boise District, the majority of Columbian sharp-tailed grouse and their habitat occur in Indian Valley and on the Hixon Columbian Sharp-tailed Grouse Wildlife Habitat Area, both in the Four Rivers Field Office.

Columbian sharp-tailed grouse rely on a variety of good quality native habitats within the sagebrush-bunchgrass, meadow-steppe, mountain shrub, and riparian zones of the northwestern United States. Various upland habitats, with a component of dense riparian or mountain shrub habitat that provides escape cover, are important to the subspecies from spring to fall. Suitable wintering habitat consists largely of deciduous trees and shrubs, and is thought to be a key element to healthy Columbian sharp-tailed grouse populations.

The Columbian sharp-tailed grouse spring-to-fall home range is generally less than 1.2 square miles. Females typically nest and rear their broods within 1 mile of an active lek, although nesting more than 1.9 miles from a lek has been recorded. Seasonal movements to wintering areas from breeding grounds of up to 12.4 miles have been recorded.

California bighorn sheep (Ovis canadensis californiana)

The California bighorn sheep is a Type 3 BLM sensitive species that was reintroduced to the Owyhee and Bruneau Field Offices during the 1960s. California bighorn sheep inhabit the Owyhee, Bruneau and Jarbidge River and Jack's Creek Canyon complexes as well as several other smaller canyon habitats in the northern Owyhee Field Office. In 1983, the Owyhee River Bighorn Sheep Habitat Area/ACEC was designated to protect and enhance habitat for bighorn sheep; maintain or improve the habitat to at least a good range condition class; and to protect and maintain the scenic and natural values in the area. Most of the Owyhee River Bighorn Sheep Habitat Area/ACEC (141,796 acres) is located within the Owyhee Field Office.

Raptors

A variety of SSS birds of prey (raptors) can be found throughout the project area including the Type 3 regionally/state imperiled northern goshawk (Accipiter gentilis), peregrine falcon (Falco peregrinus anatum), prairie falcon (Falco mexicanus), flammulated owl (Otus flammeolus), and ferruginous hawk (Buteo regalis). Both prairie falcon and ferruginous hawks occur within the NCA which has the densest concentration of nesting raptors in North America. The towering cliffs, countless ledges, cracks, and crevices in the NCA provide ideal habitat for these and other nesting raptors. The greatest threat to raptors within the NCA and lower elevation sagebrush-steppe habitats throughout the District is the loss of native shrubs from wildfires and the subsequent invasion of noxious and invasive weeds that have adversely impacted prey populations. Primary raptor prey species, Piute ground squirrels (Spermophilus townsendii), black-tailed jackrabbits (Lepus californicus), kangaroo rats (Microdipodops spp.), and deer mice (Peromyscus maniculatus) are closely tied to shrub-dominated vegetation. The preferred diet of ground squirrels is Sandberg bluegrass, winterfat, and sagebrush. A variety of snakes prey on these rodents, and the snakes are also an important raptor prey species. Plant communities altered by wildfire, soil erosion, and infestations of noxious and invasive weeds are not able to support the density of certain prey species needed to sustain raptor populations.

Appendix I - Special Status Species Aquatic

Type 1 Federally Threatened, Endangered, or Candidate Species

Bull Trout (Salvelinus confluentus)

The bull trout is the only listed fish under ESA in the project area. It was listed as threatened in 1999 (64 FR 58910). There are populations of bull trout in streams managed by the Four Rivers and Jarbidge Field Offices. The USFWS is currently drafting recovery plans for the Salmon River and Southwest Idaho Bull Trout Recovery Units, which includes the Four Rivers Field Office. The USFWS's designation of critical habitat for Columbia River populations of bull trout did not include any streams in southwest Idaho (69 FR 59996-60076).

Current bull trout distribution of the Jarbidge Field Office includes resident populations in the East Fork and West Fork Jarbidge Rivers and their major tributary streams including Jack, Deer, Pine, Dave, Slide, Fall, and Cougar creeks. Bull trout seasonally inhabit the Jarbidge River downstream of the confluence of the East and West Forks to the Bruneau River from October through late June.

The draft recovery plan for the Jarbidge River Bull Trout Recovery Unit was released for public review on July 1, 2004. In June 2004, the USFWS proposed to designate critical habitat for the Jarbidge River population of the bull trout [Federal Register, June 25, 2004 (69 FR 35768)]. USFWS is currently preparing a bull trout Biological Opinion for on-going BLM activities in the Jarbidge Recovery Unit that would be applicable to weed control activities.

Columbian Spotted Frog (Rana luteiventris)

The Great Basin population of the Columbia spotted frog is a candidate for ESA listing. Extensive surveys throughout southern Idaho since 1993 have led to increases in the number of known spotted frog sites, and Columbia spotted frogs appear to be widely but sparsely distributed throughout southwestern Idaho, mainly in Owyhee County (USFWS 2003d). They generally occur at mid to higher elevations in low gradient streams that contain numerous oxbows and pools, and in lakes and ponds in close proximity to suitable stream habitats. Springs also provide important overwinter hibernacula.

Aquatic Snails

There are six ESA listed snails (57 FR 59244) in the project area: 1) the Utah valvata snail (E), 2) the Bliss Rapids snail (T), 3) the Idaho Springsnail (E), 4) the Snake River physa snail (E), 5) Banbury Springs limpet (E), and 6) the Bruneau hot springsnail (E) (USFWS 1995). Four of the six listed species occur in the Snake River.

Utah Valvata Snail (Valvata utahensis)

The Utah valvata snail was listed as endangered in 1992. The snail lives in deep pools adjacent to rapids or in perennial flowing waters associated with large spring complexes and generally avoids areas with heavy currents or rapids. The species is found in muddy habitats and feeds on submerged vegetation, plant debris, and microscopic prey such as diatoms. It is typically absent from gravel bottomed rivers and springs. At present the snail occurs in the middle Snake River from C.J. Strike reservoir, upstream to American Falls.

Bliss Rapids Snail (Taylorconcha serpenticola)
The Bliss Rapids snail was listed as threatened in 1992. Known river populations only occur in spring-influenced habitat near the edge of mainstream rapids. The Bliss Rapids snail occurs on cobble-boulder substratum in the mainstream Snake River, and in some spring habitats in the Hagerman Valley. Populations of Bliss Rapids snails are found in a few isolated colonies in the mainstream of the Snake River from King Hill (river mile 545) to Banbury springs (river mile 589) in Idaho. It commonly grazes on a diet of diatoms and plant debris at night along mud and rocky surfaces.

Snake River Physa Snail (Physa natricina)
The Snake River physa snail was listed as endangered in 1992. The Snake River physa snail occurs only in the free-flowing sections of the Snake River from Grandview to the Snake's confluence with the Malad River.

Idaho Springsnail (Pyrgulopsis idahoensis)
The Idaho springsnail was listed as endangered in 1992. At present, this snail has discontinuous populations in permanent, flowing sections of the mainstem Snake River from the Weiser area upstream to the King Hill area.

Bruneau Hot Springsnail (Pyrgulopsis bruneauensis),
The Bruneau hot springsnail was ESA listed as endangered in 1998. The Bruneau hot springsnail has been found in flowing geothermal springs and seeps in a narrow elevation range of approximately 2,600 to 2,700 feet (USFWS 2002). The species currently survives in approximately 89 of 155 small, flowing, geothermal springs and seeps along an approximately 5 mile reach of the Bruneau River and its tributary, Hot Creek, in southwestern Idaho. The Bruneau Hot Springsnail Recovery Plan (USFWS 2002) identifies reduction and/or elimination of their geothermal spring habitat as a result of agricultural-related groundwater withdrawal and pumping as the principal threat to survival.

Banbury Springs Limpet (Lanx spp.)
The Banbury Springs limpet was listed as endangered in 1992. The limpet has only been found in spring-run habitats with well-oxygenated, clear, cold water on boulder or cobble substratum, with relatively swift currents. At present, the limpet is known to occur in large, relatively undisturbed spring habitats on the north side of the Snake River, approximately five river miles upstream and five river miles downstream of the confluence of the Snake River and Salmon Falls Creek at Banbury Springs, Box Canyon Springs, and Thousand Springs.

Type 2 Rangewide/Globally Imperiled Species

Northern Leopard Frog (Rana pipiens)
The Northern Leopard Frog is a Type 2 BLM rangewide/globally imperiled sensitive species. The leopard frog lives in marshes, wet meadows, riparian areas, and wet, open woodlands. They breed in ponds or lake edges with fairly dense aquatic and emergent vegetation and attach their eggs to submerged vegetation. Juveniles and adults live in aquatic vegetation in ponds and in adjacent grass, sedges, and woody riparian vegetation. Within the project area northern leopard frogs are known to occur along the Snake and Lower Bruneau River corridors.

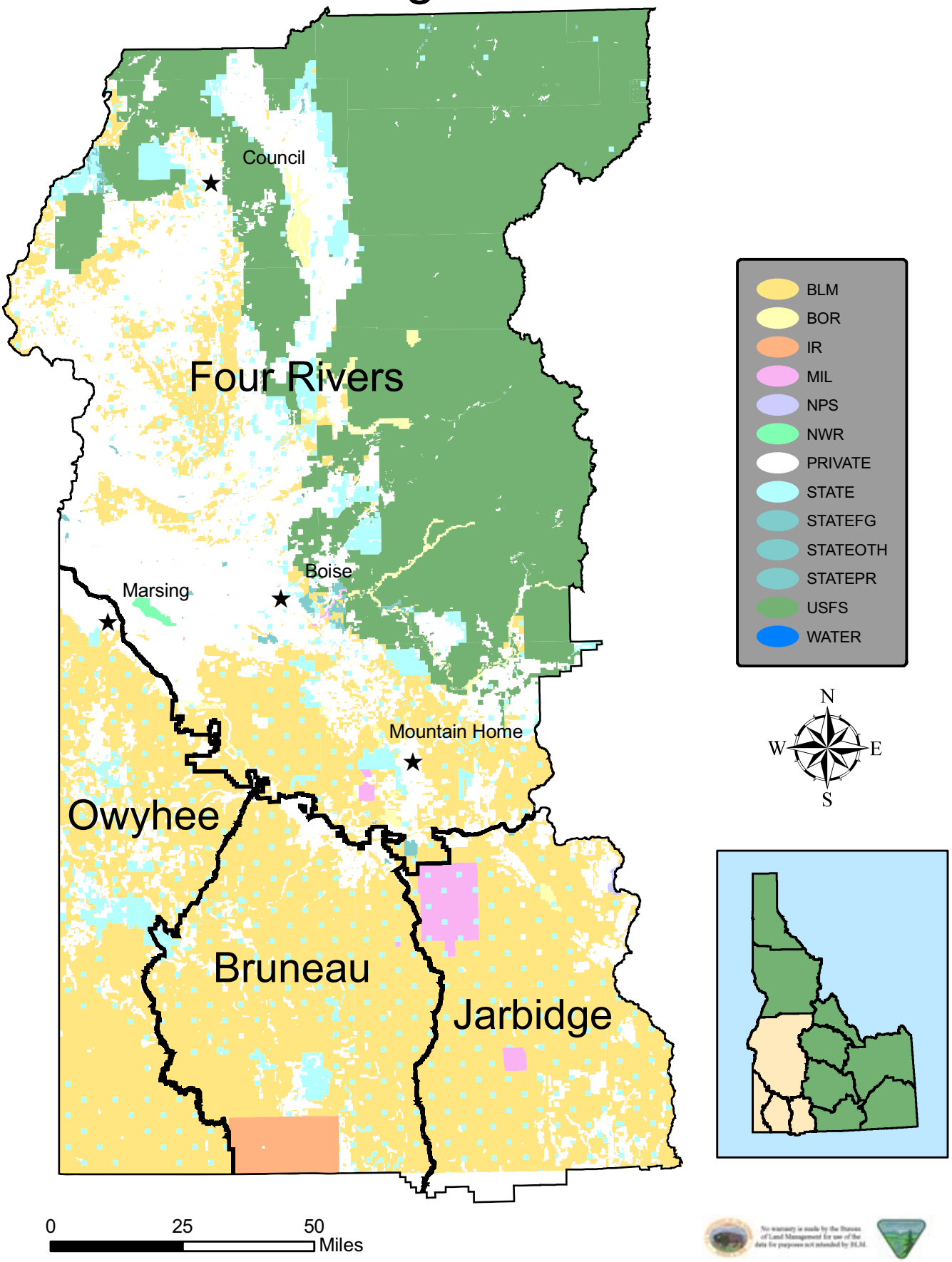
Redband Trout (Oncorhynchus mykiss gairdneri)

Native, inland Columbian Basin redband trout are a Type 2 BLM sensitive species that are experiencing significant declines throughout their range. Inland redband trout are adapted to extremely harsh environments with extremes of temperature and flow, and hatchery rainbow trout may not be effective competitors and predators in these environments. (Behnke, 1992).

Redband trout inhabit most perennial streams in the Boise, Payette, Jarbidge, Bruneau, and Owyhee River subbasins, in addition to perennial tributary streams to the Snake River (BLM and IDFG unpub. data). The IDFG and BLM have inventoried most redband trout populations on the district and they show little evidence of hybridization with stocked, hatchery rainbow trout.

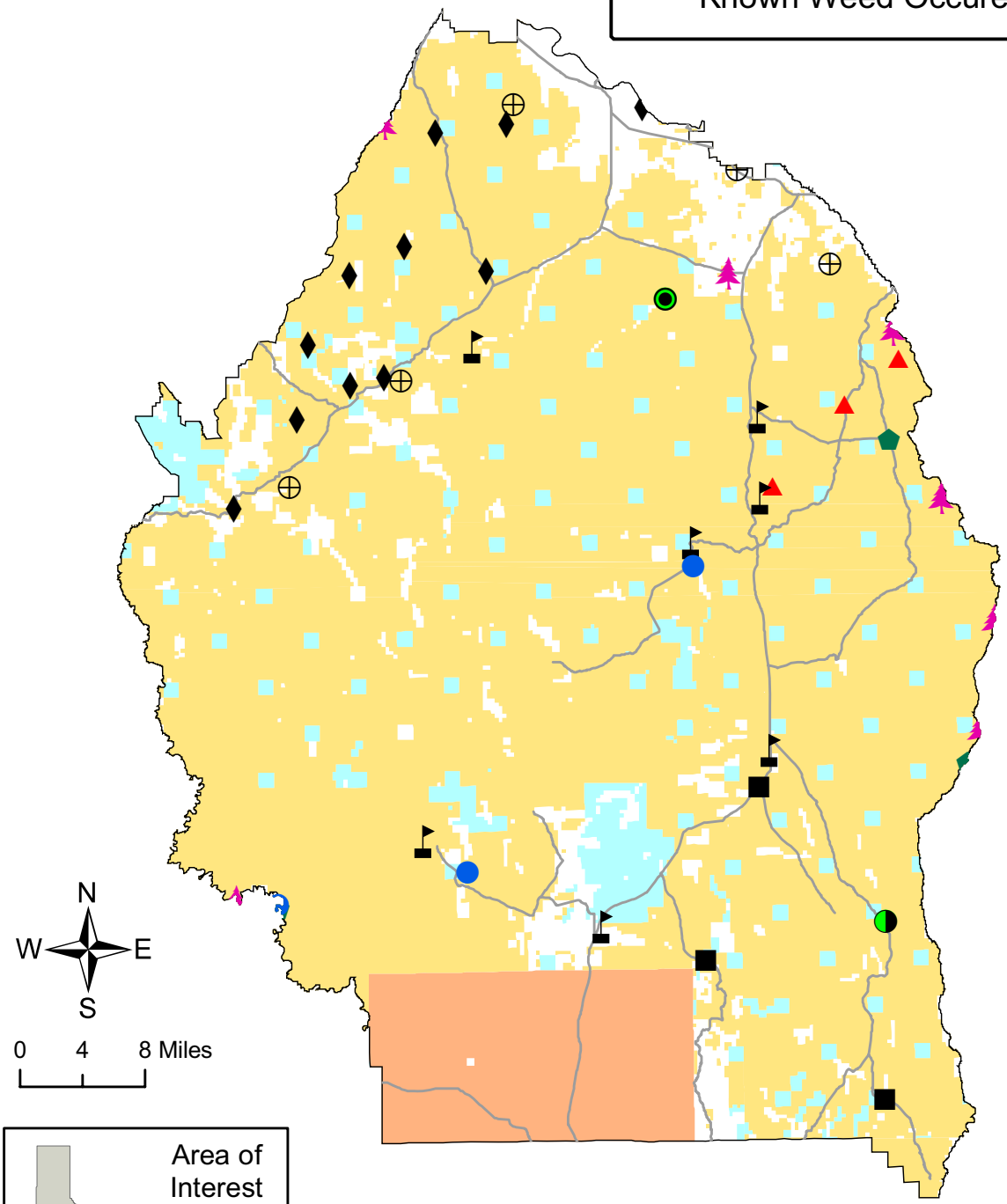
8.0 Maps

Boise District Field Offices and Jarbidge Field Office



Bruneau Field Office

Known Weed Occurences

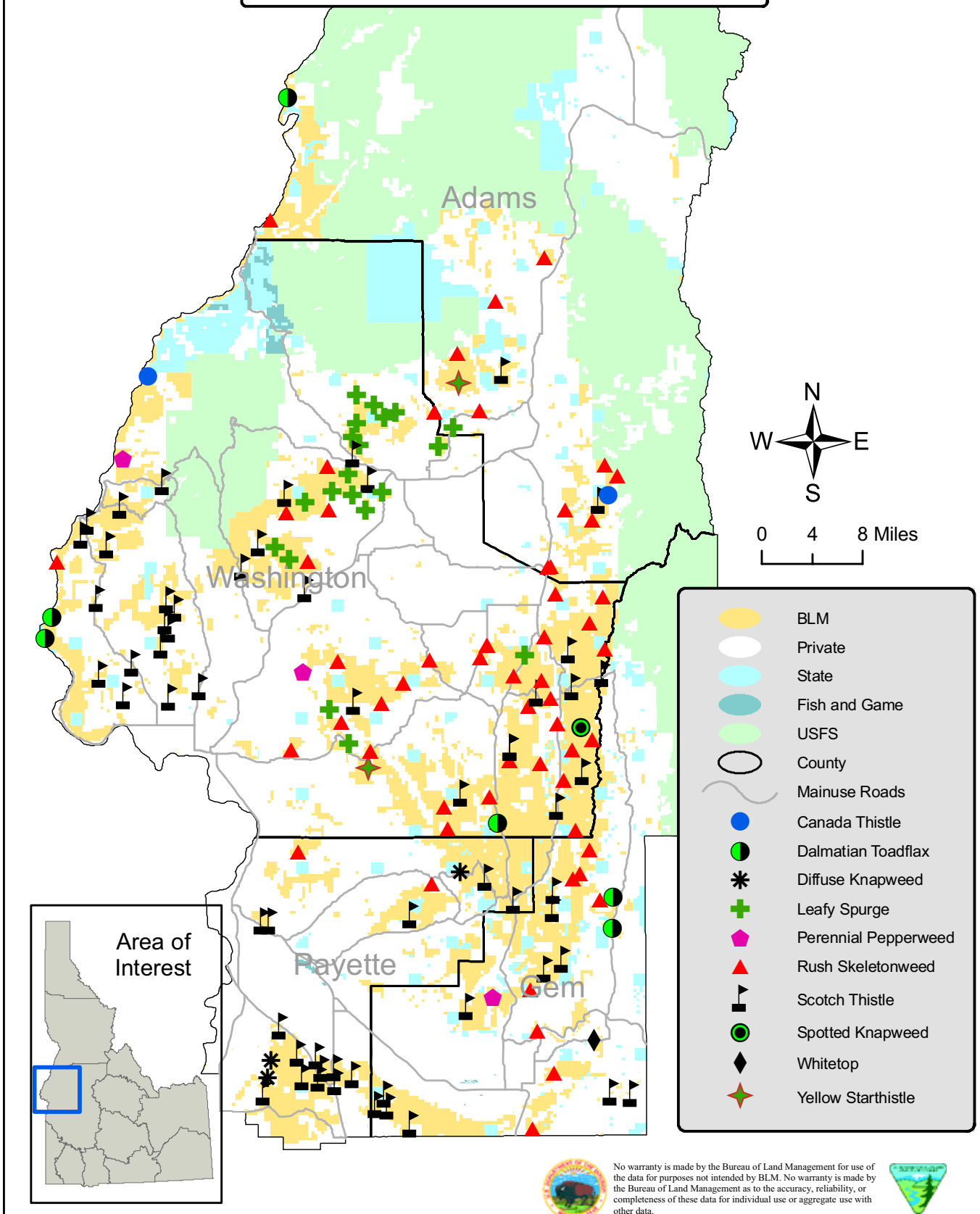


- BLM
- Duck Valley IR
- Private
- State
- Mainuse Roads
- Black Henbane
- Canada Thistle
- Dalmatian Toadflax
- Perennial Pepperweed
- Rush Skeletonweed
- Russian Knapweed
- Scotch Thistle
- Spotted Knapweed
- Tamarisk
- Whitetop

8/22/2006, L. Huter

Four Rivers Field Office (North)

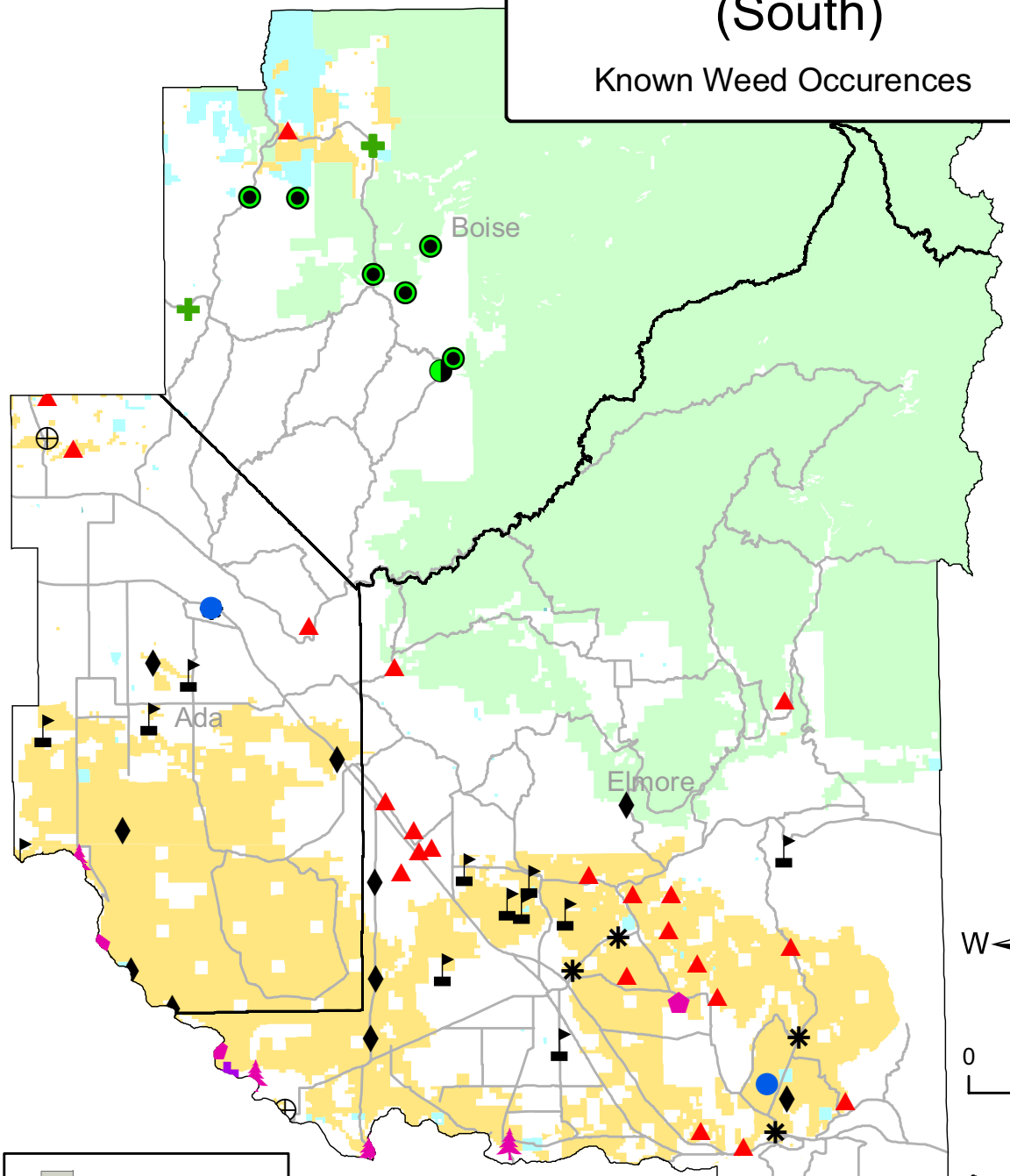
Known Weed Occurences

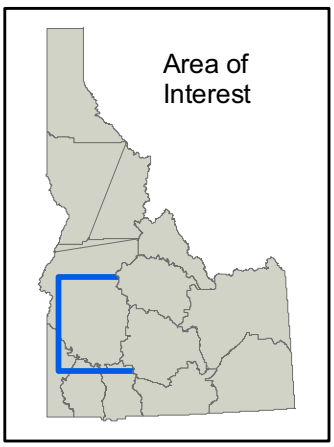


8/22/2006, L. Huter

Four Rivers Field Office (South)

Known Weed Occurences





BLM
Military
Private
State
Fish and Game
USFS
Mainuse Roads
County

Canada Thistle
Dalmatian Toadflax
Diffuse Knapweed
Leafy Spurge
Perennial Pepperweed
Poison Hemlock
Purple Loosestrife

Rush Skeletonweed
Russian Knapweed
Scotch Thistle
Spotted Knapweed
Tamarisk
Whitetop

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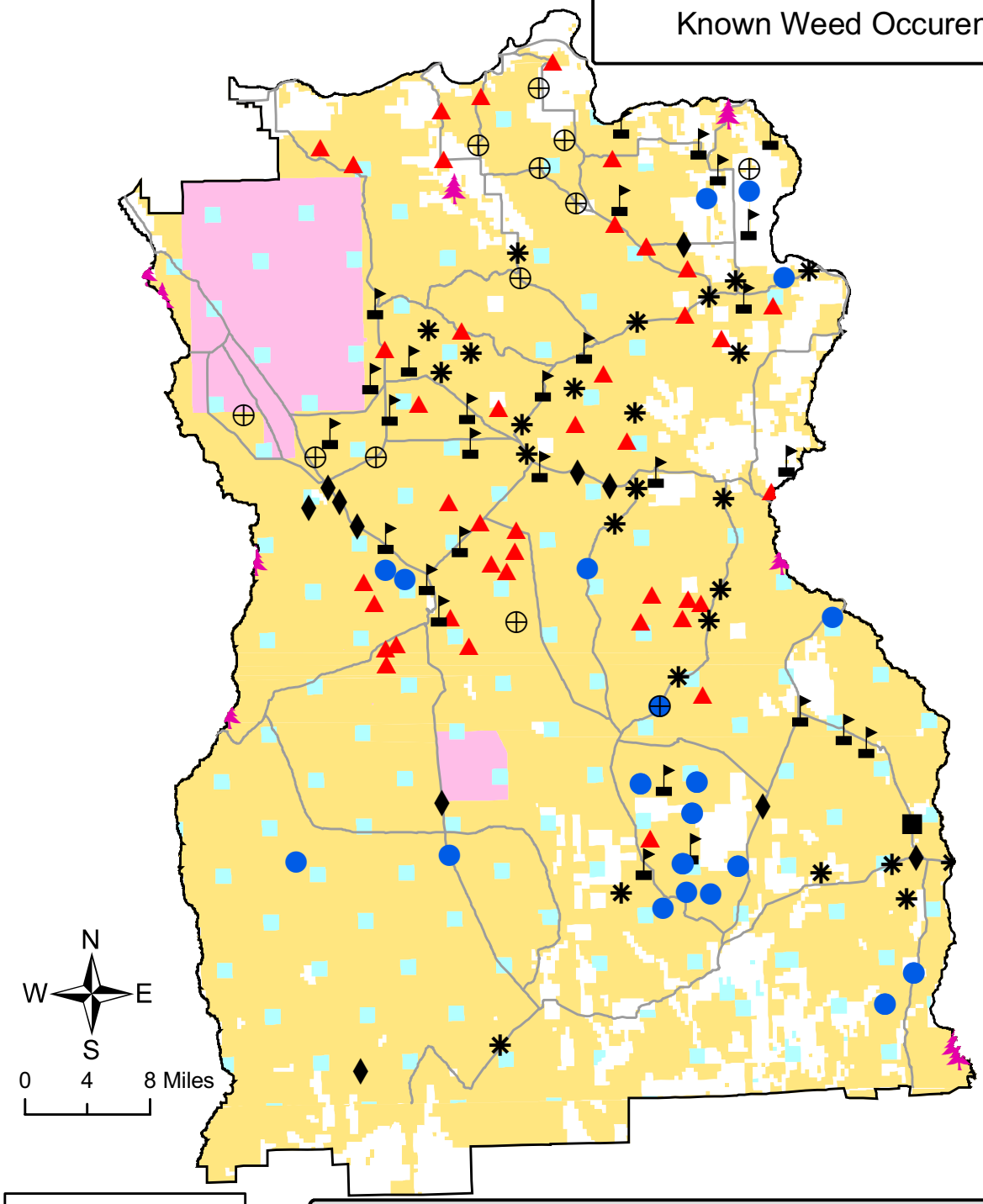
Jarbidge Field Office

Known Weed Occurences



BLM
Military
Private
State
Mainuse Roads

Black Henbane
Canada Thistle
Diffuse Knapweed
Rush Skeletonweed

Russian Knapweed
Scotch Thistle
Tamarisk
Whitetop

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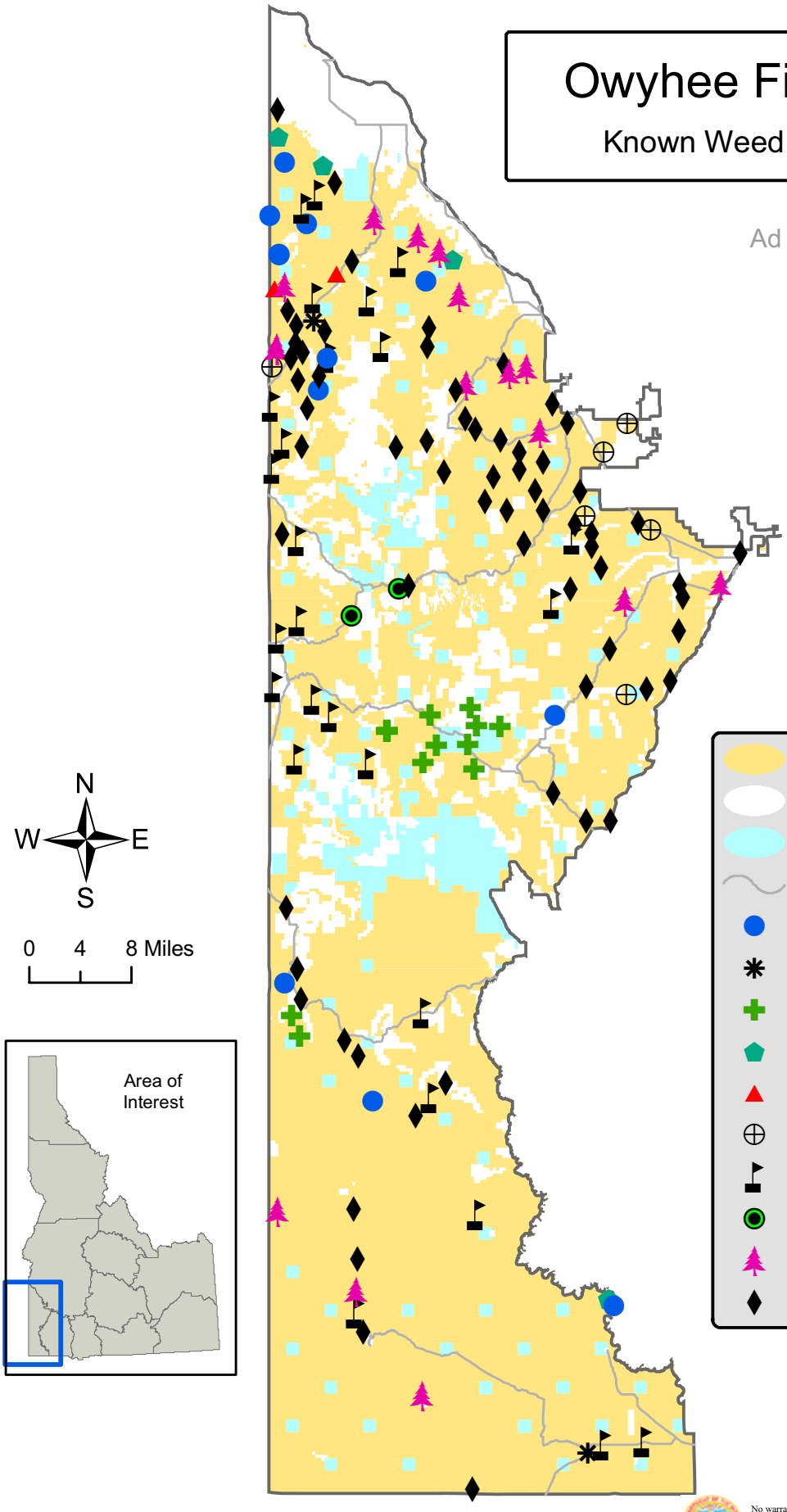
Owyhee Field Office

Known Weed Occurences



8/22/2006, L. Huter