

**United States Department of the Interior
Bureau of Land Management**

Scoping Information Package

**Twin Falls District Noxious Weed and
Invasive Plant Treatment**

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PURPOSE AND NEED FOR ACTION

Background

The Bureau of Land Management (BLM) Twin Falls District (TFD) is preparing an Environmental Assessment (EA) for noxious weed and invasive plant management within the TFD boundaries. The EA will disclose the direct, indirect, and cumulative environmental effects that would result from management and treatment of noxious weeds and invasive plants on BLM lands as required by the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and the BLM NEPA Handbook (H-1790-1).

The EA will tier to the Record of Decision (ROD) for the *Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS)* (U.S. Department of the Interior [USDI] BLM 2007a) that was released to the public on June 29, 2007, and the *Final Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report (PER)* (USDI BLM 2007b). The ROD was signed September 29, 2007. The PEIS was developed to guide the BLM's actions through its proposed treatment of vegetation, specifically noxious weeds and invasive plants, in 17 western states in the United States using 18 approved herbicide active ingredients. In addition, the vegetation treatments PER was developed that included analysis of prescribed fire, manual, mechanical, and biological treatment methods to control vegetation (USDI BLM 2007b).

In response to the threats of noxious weeds and invasive plants, BLM and other federal agencies signed a Memorandum of Understanding in 1994 to coordinate and collaborate on weed treatment and prevention through the Federal Interagency Committee for the Management of Noxious and Exotic Weeds. In addition, federal legislation including the Carson-Foley Act of 1968, the Federal Noxious Weed Act of 1974 (as amended), and the Plant Protection Act of 2000 authorize and direct the BLM to manage noxious weeds. The Idaho Noxious Weed Law of 1977 also establishes a legal requirement to control weeds designated by the state as noxious.

Noxious weeds are non-native plants with the potential to displace native vegetation at the watershed and local scale. A noxious weed is any plant designated by a federal, state, or county government to be injurious to public health, agriculture, recreation, wildlife, or any public or private property (Sheley and Petroff 1999). Idaho currently has 64 different species of weeds that are designated noxious by state law (Appendix A).

In addition to noxious weeds, non-native invasive plants, such as cheatgrass or downy brome (*Bromus tectorum*) and medusahead wildrye (*Taeniatherum caput-medusae*), have become dominant in portions of the TFD. This dominance has altered fire regimes and, in some cases, resulted in landscape-scale changes in vegetation composition and structure. For example, cheatgrass rapidly invades disturbed areas and acts as a hazardous fuel, increasing the fire frequency and intensity in sagebrush steppe ecosystems and other landscapes characteristic of south-central Idaho. Approximately 3.1 million acres, or about 80% of the TFD, have high

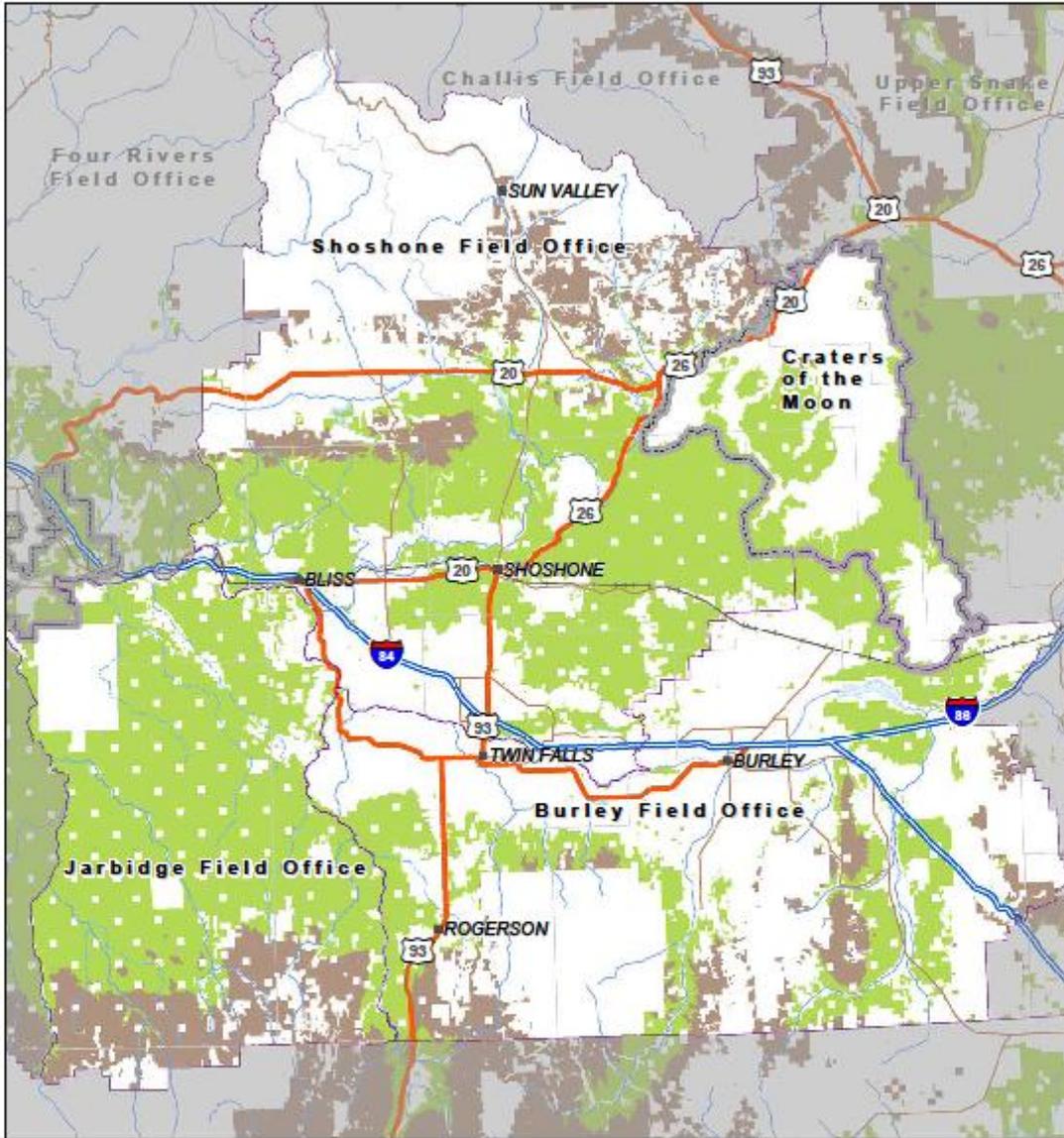
potential to be dominated by noxious weeds and invasive plants (See TFD Potential Invasive Plant Community Map). These areas typically occur below an elevation of 5,500 feet. Historical data show that the highest fire frequencies in the TFD also occur in these areas (See TFD Fire Frequency Map). Appendix A contain a list of non-native invasive plants found in the TFD.

Noxious weeds and their continued expansion have been recognized as the single greatest threat to the integrity of native plant communities (Asher 1998). The rapid expansion of invasive plants across public lands continues to be a primary cause of ecosystem degradation, and control of these species is one of the greatest challenges in land management (USDI BLM 2007b). Noxious weeds and invasive plants are aggressive and can out-compete native vegetation, especially following a disturbance. Left unchecked, noxious weeds and invasive plants can create monocultures that degrade or reduce soil productivity, water quality and quantity, species diversity and structure of native plant communities, wildlife habitat, wilderness values, recreational opportunities, and livestock forage, and are detrimental to agriculture and commerce of Idaho (USDI BLM 2007a).

Integrated weed management on public lands is a high priority for BLM. The TFD noxious weed and invasive plant control program coordinates with partners from other federal and state agencies, county and tribal governments, industry, conservation organizations, and private citizens. The TFD currently has cooperative agreements in place with most of the counties that occur within the district boundary for noxious weed management. The goals of the weed control program are:

1. Prevention of weed establishment.
2. Early detection and rapid eradication of new weed infestations.
3. Stabilization and rehabilitation of disturbed areas.
4. Integration of weed management measures into land management actions/authorizations.
5. Implementation and monitoring of weed control measures.
6. Adaptive management for controlling new weed species and use of new and approved treatments.

Twin Falls District Potential Invasive Plant Community Map



TWIN FALLS DISTRICT

- | | | | |
|---|-------------------|---------------------|---------------------|
| Potential Invasive Plant Community | BLM Offices | Towns/Communities | Stream |
| < 5500 ft | National Monument | Major Railroad Line | Intermittent Stream |
| > 5500 ft | Outside TFD | Interstate | Lake |
| | | Highway | |
| | | Local Road | |



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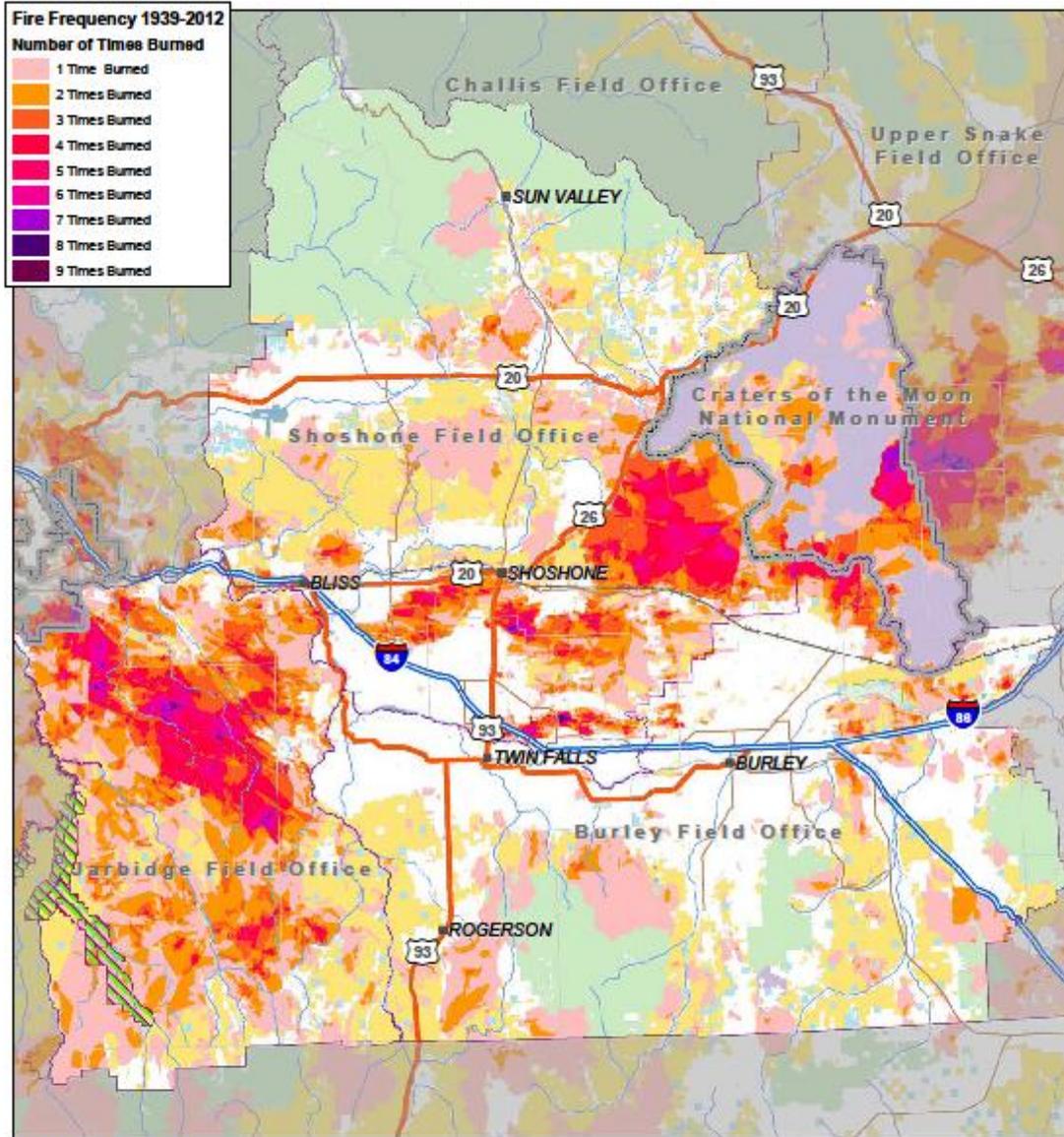


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Author: dolores

Twin Falls District Fire Frequency, 1939-2012



TWIN FALLS DISTRICT

- | | | | | | |
|---------------------|-----------------------|-----------------------|-----------------------------------|-------------------------------|-----------------------|
| ■ Towns/Communities | — Major Railroad Line | — Stream | ■ Bureau of Land Management | ■ National Grasslands | □ Private; other |
| □ BLM Offices | — Interstate | — Intermittent Stream | ■ Bureau of Reclamation | ■ Forest Service | □ State |
| ■ National Monument | — Highway | □ Lake | ■ Military, Department of Defense | ■ Fish and Wildlife Service | ■ State Fish and Game |
| ■ Wilderness | — Local Road | | ■ Bankhead-Jones Land Use | ■ National Park Service | |
| ■ Outside TFD | | | ■ Department of Energy | ■ Native American Reservation | |


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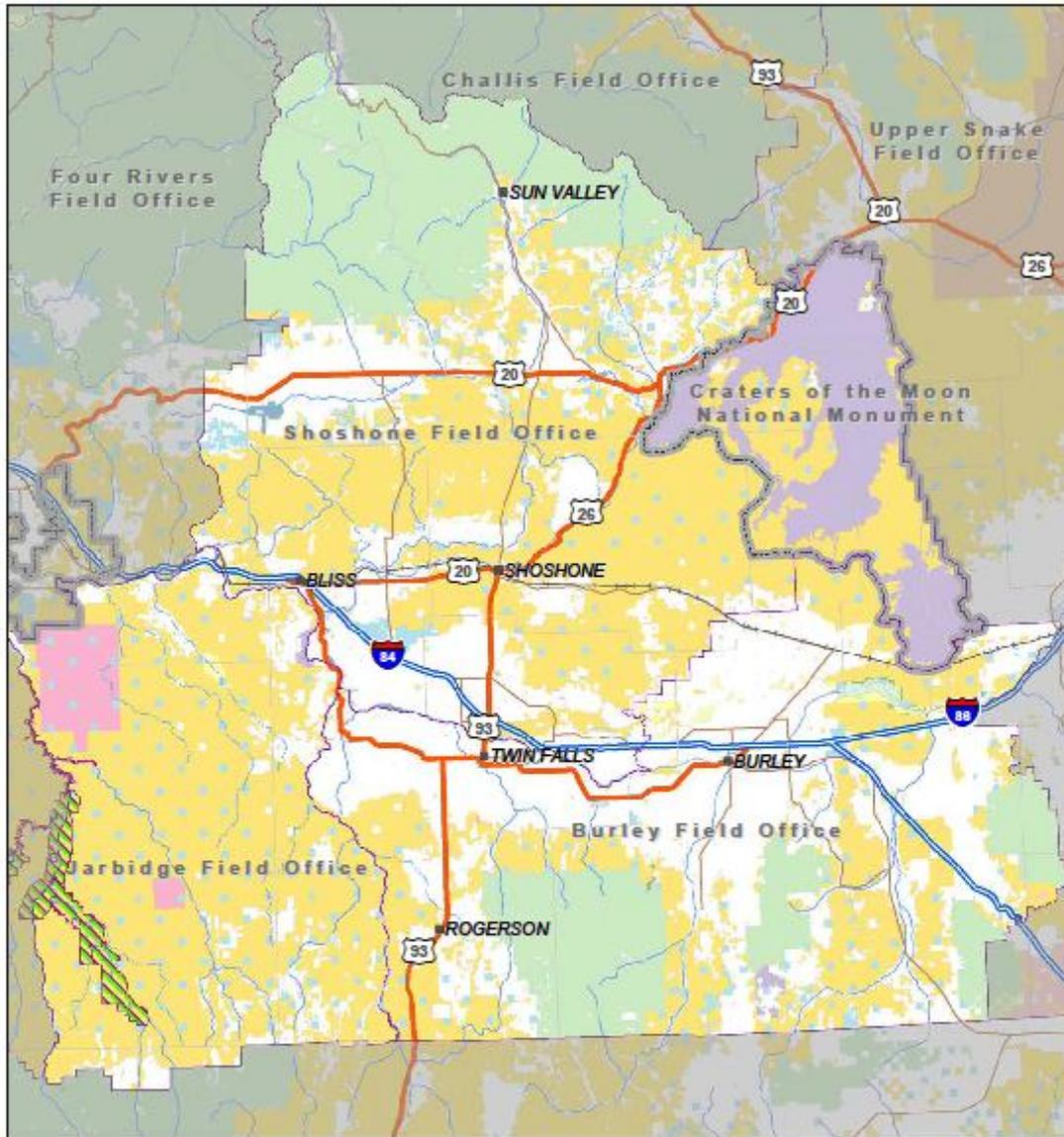


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Location of Proposed Action

The proposed actions would take place on the approximately 3.9 million acres of public land managed by the TFD BLM which consist of three field offices; Burley Field Office (BFO), Jarbidge Field Office (JFO), and Shoshone Field Office (SFO) in south-central Idaho. These lands include approximately 45,000 acres of public land in Elko County, Nevada (see Twin Falls District Map). The counties (or portions of counties) occurring within the bounds of the TFD are: Blaine, Butte, Camas, Cassia, Custer, Elmore, Gooding, Jerome, Lincoln, Minidoka, Oneida, Owyhee, Power, and Twin Falls counties, Idaho, and Elko County, Nevada.

Twin Falls District Map

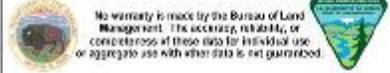


TWIN FALLS DISTRICT

■ Towns/Communities	→ Major Railroad Line	— Stream	■ Bureau of Land Management	■ National Grasslands	■ Private; other
■ BLM Offices	— Interstate	— Intermittent Stream	■ Bureau of Reclamation	■ Forest Service	■ State
■ National Monument	— Highway	■ Lake	■ Military, Department of Defense	■ Fish and Wildlife Service	■ State Fish and Game
■ Wilderness	— Local Road		■ Bankhead-Jones Land Use	■ National Park Service	
■ Outside TFD			■ Department of Energy	■ Native American Reservation	


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Purpose and Need for Action

The purpose of the proposed action is to treat current and foreseeable future infestations of noxious weeds and invasive plants to promote land health. This would be accomplished through an integrated noxious weed and invasive plant management program on public lands within the TFD, consistent with treatment methods approved in the 2007 ROD for the PEIS.

The TFD currently implements noxious weed and invasive plant treatments under three separate decisions, one for each field office:

- Burley District Noxious Weed Control EA ID-020-88-16 (1988)
- Shoshone District Noxious Weed Control EA ID050-EA-92031 (1992)
- Boise District and Jarbidge Field Office Noxious Weed Treatment EA ID100-2005-EA-265 (2007)

This proposed action is needed because existing decision documents for noxious weed and invasive plant management are not consistent with each other or the 2007 ROD for the PEIS. In addition, these decision documents do not adequately address current issues in the TFD in regard to large-scale control of invasive species. The decision for this EA would supersede the three existing decision documents.

Conformance with Applicable Land Use Plans

Noxious weeds and invasive plant treatment actions identified in the proposed action are consistent with the following applicable land use plans, as amended:

- Magic Management Framework Plan, 1975
- Bennett Hills/Timmerman Hills Management Framework Plan, 1980
- Sun Valley Management Framework Plan, 1981
- Twin Falls Management Framework Plan, 1982
- Cassia Resource Management Plan, 1985
- Monument Resource Management Plan, 1985
- Jarbidge Resource Management Plan (Jarbidge RMP), 1987
- Craters of the Moon National Monument and Preserve Management Plan (Craters of the Moon Monument MP), 2006
- Fire, Fuels, and Related Vegetation Management Direction Plan Amendment (FMDA), 2008

The FMDA amended all of the land use plans in the Twin Falls District except for the Jarbidge RMP and Craters of the Moon Monument MP. The FMDA provides a framework for decisions regarding hazardous fuels reduction and related vegetation management. Conformance of the proposed action and alternatives with management direction contained in the FMDA, Jarbidge RMP, and Craters of the Moon Monument MP is presented below.

FMDA

The proposed action is in conformance with the following FMDA goals and objectives:

- Protect and enhance sage-grouse source habitats.
- Protect and enhance key ecological components in plant and animal communities.
- Consider mechanical and/or chemical treatments first where fire is not an appropriate tool due to risk to life, property, or resource impacts.
- Move all vegetation types toward Desired Future Condition (DFC).

Jarbidge RMP

The proposed action is in conformance with the following Jarbidge RMP objectives and Resource Management Guidelines. Additional objectives are applicable to specific Multiple Use Areas (MUAs) within the JFO and would be addressed during project-level planning.

- Improve lands in poor ecological condition.
- Maintain vegetative improvements.
- Manage all ecological sites on mule deer, pronghorn, elk, bighorn sheep, and sage-grouse habitat currently in fair or poor ecological condition, for good ecological condition.
- Manage all wildlife habitat within the resource area to provide a diversity of vegetation and habitats.
- BLM districts will work with their respective County governments to monitor the location and spread of noxious weeds and to maintain up-to-date inventory records. BLM will control the spread of noxious weeds on public lands where possible, where economically feasible, and to the extent that funds are prioritized for that purpose.
- Where weed control is warranted, the Bureau will consider alternatives including herbicide applications, plow and seed, burn and seed, livestock grazing strategy, and biological controls. Coordination with adjoining landowners will be pursued if appropriate.

Craters of the Moon Monument MP

The proposed action is in conformance with the following Craters of the Moon Monument MP goals and objectives:

- Existing sagebrush steppe communities will be protected to prevent loss of shrub cover and managed to promote a diverse, desirable grass and forb understory.
- Current science and best available technologies and plant materials will be considered in analysis and implementation of all restoration projects. Restoration treatments may be active or passive and may include but are not limited to the following: prescribed fire, thinning, mowing, herbicide treatment, and seeding.
- Approximately 80,000 acres of BLM-administered land (11% of the entire Monument) will be restored. About 31,000 acres of annual grassland and 49,000 acres of highly degraded low elevation sagebrush steppe (poor to fair biotic integrity) will be treated to control cheatgrass and restore big sagebrush cover with a perennial understory.

- Weed infestations in wilderness areas will be controlled by methods consistent with minimum tools requirements and integrated weed management principles, including prevention of disturbance activities, use of cultural and mechanical methods to control or physically remove noxious weeds, and selective application of herbicides and possibly biological controls.
- Integrated weed management principles will be applied proactively throughout all zones. This program will emphasize protection of weed-free areas and aggressive detection and control of noxious or highly invasive exotic weeds and will include an analysis of the trade-offs involved in herbicide use versus non-chemical methods of weed control.

Should any of the current land use plans be amended or revised, components of the proposed action would be reviewed for conformance with the updated plan. Any component of the proposed action not in conformance with an updated plan would not be implemented.

Relationship to Statutes, Regulations or Other Plans

Broad objectives for management of vegetation on public lands are identified in BLM's *Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan* (Western Governors' Association 2006); *Partners Against Weeds: An Action Plan for the Bureau of Land Management* (USDI BLM 1996); and *Pulling Together: National Strategy for Invasive Plant Management* (Federal Interagency Committee for the Management of Noxious and Exotic Weeds 1997), while treatment activities at the local level are guided by the goals, standards, and objectives of land use and other plans developed at the field office level. The following laws, acts, plans, manuals, and policies provide a foundation for noxious weed and invasive plant management by the BLM.

- The *Carson-Foley Act of 1968* (Public Law 90-583; 43 U.S.C. 1241 et seq.), and the *Plant Protection Act of 2000* (Public Law 106-224) authorize and direct the BLM to manage noxious weeds (including management of undesirable plants on federal lands) and to coordinate with other federal and state agencies in activities to eradicate, suppress, control, prevent, or retard the spread of any noxious weeds on federal lands.
- The *Endangered Species Act of 1973* (16 U.S.C. 1531-1544, 87 Stat. 884), *as amended*, requires consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service for any federal action that may affect a species listed as threatened, endangered, or proposed for listing under the Act.
- The *Federal Noxious Weed Act of 1974* (Public Law 93-629), *as amended by Section 15, Management of Undesirable Plants on Federal Lands, 1990*, (7 U.S.C. 2801 et seq.) 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." This Act established and funded an undesirable plant management program, implemented cooperative agreements with state agencies, and established integrated management systems to control undesirable plant species.

- The *Federal Land Policy and Management Act of 1976, as amended*, (Public Law 94-579; 43 U.S.C. 1701 et seq.) directs BLM to "...take any action necessary to prevent unnecessary and or undue degradation of the public lands."
- The *Idaho Noxious Weed Law* (Title 22 Agriculture and Horticulture, Chapter 24 Noxious Weeds, 1977) specifies the list of noxious weeds in the state and requires control of these designated weeds and other pests on public and private lands.
- The *Public Rangelands Improvement Act of 1978* (Public Law 95-514; 43 U.S.C. 1901 et seq.) requires that BLM manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible.
- *The Clean Water Act (1987)*, as amended (33 U.S.C. 1251), establishes objectives to restore and maintain the chemical, physical, and biological integrity of the nation's water. The Act also requires permits for point source discharges to navigable waters of the United States and the protection of wetlands and includes monitoring and research provisions for protection of ambient water quality.
- *Idaho Water Quality Regulations* implement permitting and monitoring requirements for the *National Pollutant Discharge Elimination System*, operation of injection wells, groundwater protection requirements and prevention and response requirements for spills.
- *Floodplain Management (Executive Order 11988)* provides for the restoration and preservation of national and beneficial floodplain values, and enhancement of the natural and beneficial values of wetlands in carrying out programs affecting land use.
- *Protection of Wetlands (Executive Order 11990)* requires federal agencies to take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.
- *BLM Manual 9011 and Manual Handbook H-9011-1: Chemical Pest Control* – Outlines policy and provides guidance for conducting pest control programs on public land.
- *BLM Manual 9014 – Use of Biological Control Agents of Pests on Public Lands* – Outlines policy, defines responsibilities, and provides guidance for the release, maintenance, and collections of biological control agents for integrated pest management (IPM) programs on the lands administered by the BLM.
- *BLM Manual 9015: Integrated Weed Management, 1992*, provides policy relating to the management and coordination of noxious weed activities among BLM, organizations, and individuals.
- *BLM Manual 9220: Integrated Pest Management* – Outlines policy, defines responsibilities, and provides guidance for implementing integrated pest management programs on the lands administered by BLM.

- *Department of the Interior, Departmental Manual 609: Weed Control Program, 1995*, 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.
- *Executive Order 13112, Invasive Species, 1999*, directs federal agencies to prevent the introduction of invasive species and provide for their control, and to minimize the economic, ecological, and human health impacts that invasive species cause.
- The *Noxious Weed Control and Eradication Act of 2004* (Public Law 108–412) established a program to provide assistance through the states to eligible weed management entities to control or eradicate harmful, non-native weeds on public and private lands.
- The *Final Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (2007a) and the *Final Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report* (2007b) analyzed the direct, indirect, and cumulative impacts to various resources from proposed vegetation treatments and alternatives. The ROD for the final PEIS was signed September 29, 2007.

Tiering and Incorporation by Reference

The programmatic EA would implement the tiering process outlined in 40 CFR 1502.20, which encourages agencies to tier environmental documents, eliminating repetitive discussions of the same issue. Agencies are encouraged to analyze actions at a programmatic level for those programs that are similar in nature or broad in scope [40 CFR 1502.4(c), 1502.20, and 1508.23]. After a broad programmatic analysis has been prepared, any subsequent EA on an action included within the entire program or policy (particularly a site-specific action) need only summarize issues discussed in the broader statement and concentrate on the issues specific to the subsequent action.

The 2007 PEIS, which this EA will tier to, provides NEPA compliance by assessing the use of certain herbicides to treat undesirable vegetation on public lands administered by the BLM and provides a broad, comprehensive background source of information to which subsequent environmental analyses can be tiered. The programmatic analysis in the PEIS contains broad regional descriptions of resources, provides a broad environmental impact analysis, including cumulative impacts, focuses on general policies, and provides Bureau-wide decisions on herbicide use for vegetation management.

Additionally, Section 7 consultation under the Endangered Species Act (ESA) was completed for the broad range of activities described in the PEIS. Tiering of the analysis in the EA to the PEIS would allow the TFD to prepare more specific environmental documents without duplicating relevant portions of the PEIS. The PEIS is used to facilitate the analysis process by providing BLM treatment design features and impact assessment data for herbicides. The effects on the environment from using non-herbicide treatment methods, including prescribed fire and

mechanical, manual, and biological controls to treat hazardous fuels, invasive species, and other unwanted or competing vegetation are disclosed in the PEIS and PER.

PROPOSED ACTION

Targeted Plant Communities

Noxious Weeds

The current Idaho noxious weed list and the specific weeds that are most likely to be found and treated in the TFD is included in Appendix A. Idaho law defines a noxious weed as any plant having potential to cause injury to public health, crops, livestock, land or other property. The BLM defines a noxious weed as a plant species designated by federal or state law as generally possessing one or more of the following characteristics:

- aggressive and difficult to manage;
- parasitic;
- a carrier or host of serious insects or disease;
- non-native, new, or not common to the United States.

The State of Idaho administrative rules put noxious weeds into three categories that can affect how they are managed.

- **Statewide Early Detection and Rapid Response.** Plants in this category must be reported to the Idaho State Department of Agriculture (ISDA) within 10 days after being identified at the University of Idaho or by another qualified authority approved by the ISDA director. Eradication of these weeds must begin in the same season they are found.
- **Statewide control.** Plants in this list may already exist in some parts of the state. In some areas of the state control or eradication is possible, and a plan must be written that will reduce infestations within 5 years.
- **Statewide containment.** Plants in this category exist in the state. New or small infestations can be reduced or eliminated, while established populations may be managed as determined by the weed control authority, which usually is the county weed program.

Invasive Plants

In addition to treating the noxious weed species identified on the Idaho noxious weed list, plant communities dominated by invasive species such as cheatgrass and medusahead wildrye, would be treated utilizing proposed methods to reduce the incidence and dominance of these communities. Appendix A includes a list of invasive plants occurring in the Twin Falls District. Specific treatment methods could occur singly or in combination.

According to Executive Order 113112, invasive plants are defined as non-native plants whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Invasive plants:

- are not part of (if exotic), or are a minor component of (if native), the original plant community or communities;
- have the potential to become a dominant or co-dominant species on the site if their future establishment and growth is not actively controlled by management interventions;
- or are classified as exotic or noxious plants under state or federal law.

Native species that become dominant for only one to several years (e.g. short-term response to drought or wildfire) are not invasive plants.

Invasive plants compromise the BLM's ability to manage lands for a healthy native ecosystem. They create a host of environmental and other effects, most of which are harmful to native ecosystem processes, including:

- displacement of native plants,
- reduction in functionality of habitat and forage for wildlife and livestock,
- increased potential for soil erosion and reduced water quality,
- alteration of physical and biological properties of soil,
- loss of long-term riparian area function,
- loss of habitat for culturally significant plants,
- high economic cost of controlling invasive plants, and
- increased cost of keeping systems and recreational sites free of invasive species.

The majority of invasive plants found in the TFD are listed in Appendix A. Future invasive species could be treated if found to be occurring and invasive in the TFD.

Invasive plant communities across the Snake River Plain and TFD occur primarily below 5,500 feet elevation. It is anticipated that the majority of invasive plant treatment proposals would be implemented within this zone (See TFD Potential Invasive Plant Community Map). These invasive plant communities can be the dominant vegetation cover or be a significant component ($\geq 10\%$ cover¹) of a native vegetation stand. Treatment of these native plant communities to reduce the incidence of invasive species can be critical to maintaining or improving key wildlife habitats (e.g. sage grouse habitat, big game winter ranges).

Treatment Planning

The proposed action consists of two planning levels.

- 1) Manual treatments, biological control, and chemical spot treatments of new and existing infestations of noxious weeds where immediate and on-going actions are required would be implemented under this programmatic analysis. Anticipated annual acreages are identified for each treatment type.
- 2) Planning of larger-scale invasive plant community and noxious weed treatment projects that are not part of the ongoing actions listed above would incorporate by reference this

¹ FMDA management goal for low-elevation shrub, perennial grass and invasive annual grass habitats is to reduce the number of acres with more than 10% cover of cheatgrass and/or weeds.

programmatic analysis and each would require a Determination of National Environmental Policy Act Adequacy (DNA) and land use plan conformance review.

Ongoing Actions

Noxious weeds that would be treated as an on-going action occur primarily in burned areas or locations with frequent disturbance such as roadways, gravel pits, private/public land interfaces, or high-use recreation sites, including off-road vehicle (OHV) areas, camp sites, and trails. Areas burned by wildland or prescribed fire would be inventoried for noxious weeds post-fire. Noxious weeds detected during the inventory process would be spot-treated with chemicals using hand-held or vehicle-mounted spray equipment. In addition, some areas contain known infestations that cannot be completely eradicated require regular (e.g. annual) treatment for containment and to prevent spread to adjacent areas. These areas would be treated at intervals necessary for containment using manual, biological control, or spot herbicide spray methods. Anticipated annual acreages for each of the methods are discussed in the individual treatment methods below.

Larger-scale Vegetation Treatments

Larger-scale, site-specific vegetation treatment projects utilizing one or more methods for control of noxious weeds and invasive plants would be addressed using the DNA review process. This internal review process allows the BLM to base site-specific proposed actions on a previous NEPA document. A decision record would then be prepared based on the existing programmatic NEPA document if the DNA review determines that the proposed action has been adequately analyzed in that document and there are no changed circumstances. If the site-specific proposed action meets these criteria, the BLM would rely on the programmatic document for NEPA compliance. A discovery of a new circumstance would cause the BLM to develop a new EA to analyze the impacts of the circumstance that caused the change. The use of new or updated chemicals approved for use would also entail additional NEPA analysis.

Integrating Vegetation Treatments

Per BLM policy and manual direction, including Department of Interior Integrated Pest Management Manual 517, the BLM utilizes an integrated pest management approach to managing and treating vegetation. This approach is inclusive of concepts such as integrated weed management (BLM Manual Section 9015) and more broadly, integrated vegetation management (BLM Handbook 1740-2).

The integrated weed program on BLM-administered lands is based on weed management objectives and priorities that are influenced by weed infestations and site susceptibility. These criteria provide focus and direction for the weed program and allow for site-specific and adaptive decision making. Integrated weed management strategies may include, but are not limited to, prevention; mechanical, manual, chemical, and biological methods; and prescribed fire. For some of the most aggressive invaders, herbicides are the most effective way to control weed spread.

The BLM would treat noxious weeds and invasive plant communities using prescribed fire, mechanical and manual methods, biological control, and herbicides. In an integrated vegetation

management program, each management option is considered, recognizing that no one management option is a stand-alone option and that each has its own strengths and weakness.

General Site Selection and Treatment

Treatment priorities are established and influenced by several factors. These factors include national, state, and local priorities pursuant to current policies, directives, and initiatives. The following local treatment priorities would promote integrated efforts across BLM resource programs that manage vegetation.

- Design Wildland Urban Interface (WUI) community protection treatments that reduce the risk of wildfire to the community and/or its infrastructure and are developed collaboratively with the community.
- Protect, maintain, or restore:
 - special status species habitat;
 - big and upland game crucial habitat, including winter range;
 - special management areas including Craters of the Moon National Monument and Preserve, the Bruneau-Jarbridge Rivers Wilderness, and Areas of Critical Environmental Concern (ACECs);
 - healthy, diverse, resilient, and productive desired plant communities.

Priorities would also be influenced by:

- Treatments that will be planned, implemented, and/or monitored using funding from multiple sources, both internal and external.
- Landscape treatments coordinated across field office boundaries to improve treatment effectiveness.
- Contracted treatments that support economic opportunities for rural communities and/or high potential to use stewardship contracting authorities.

The extent of the noxious weed situation in the TFD requires prioritization of weed treatment efforts for the most efficient use of limited time and resources. The following management situations would be used to prioritize invasive plant and noxious weed treatments in order to focus efforts towards success (USDI BLM 2007a):

Priority 1: New aggressive infestations in a previously un-infested area or small infestations in areas of special concern (e.g. special management areas, special status species habitat).

- Management objective: *Eradicate*. Eliminate all traces of a population (including reproductive propagules) to the point where individuals are no longer detectable. This eliminates the potential for further introduction and spread.

Priority 2: Areas of high traffic or sources of infestation and larger infestations in areas of special concern.

- Management objective: *Control*. Reduce the extent and density of a target weed to limit the potential for further introduction and spread.

Priority 3: Existing large infestations or roadside infestations where spread can be checked or slowed.

- Management objective: *Contain*. Prevent weeds from moving beyond the current infestation perimeter.

Applying these priorities would result in the following general strategy:

- Keep weed-free areas weed-free. Keeping weed-free areas weed-free is the most biologically and cost-effective approach. Once an area has been taken over by weeds, restoration may be expensive and may not always return an area to its full native community of plants and animals. Thus it is better to maintain the native vegetation than to have to restore it.
- Use biological controls to limit and reduce weeds in areas where they are already well established and beyond control by herbicides, areas difficult to access, or sensitive areas where biological control is the most efficient method.
- Use BLM-approved herbicides or hand-pulling where weeds are establishing in new areas.
- Use herbicides or hand-pulling to control weeds along roads, at recreation sites and trail heads, and in other places where people and vehicles are likely to pick up and spread weed seeds.
- Use hand-pulling and grubbing near special status plant populations when it is determined that herbicides cannot be used.
- Use aerial application in areas difficult to access or too large to effectively treat by ground methods.
- Revegetate areas where the potential native plant community cannot reestablish following noxious weed and invasive plant control.
- Monitor all types of treatment for effectiveness and adjust control methods accordingly.
- Continue education, prevention, and inventory.

Cooperative Weed Management Areas

A Cooperative Weed Management Area (CWMA) is composed of local, private, and federal interests. CWMA's typically center on a particular watershed or similar geographic area in order to combine resources and management strategies in the prevention and control of weed populations. Much of the BLM's on-the-ground invasive species prevention and management is done directly or indirectly through CWMA's.

The TFD currently maintains weed control agreements and projects with Twin Falls, Camas, Cassia, and Minidoka Counties. In addition, the TFD maintains an agreement and projects with the Tri-County (Lincoln, Gooding, and Jerome counties) weed control group. The TFD would continue these partnerships to control noxious weeds utilizing allowable methods as funding is made available.

Prevention

As stated in *Partners Against Weeds: An Action Plan for the BLM*, prevention and public education are the highest priority weed management activities. Priorities are as follows:

Priority 1: Take actions to prevent or minimize the need for vegetation control when and where feasible, considering the management objectives of the site.

Priority 2: Use effective non-chemical methods of vegetation control when and where feasible.

Priority 3: Use herbicides after considering the effectiveness of all potential methods or in combination with other methods or controls.

The proposed action adopts prevention measures included in the 2007 PEIS. Appendix B contains the detailed list of these prevention measures. Weed free seed, forage, and straw for permitted activities would be required on public lands (USDI BLM 2011a).

Treatment Methods

Treatment methods would be chosen based on site characteristics. Selection of the most appropriate treatments depends on numerous factors, including noxious weeds or invasive plants present on the site, risk of expansion, weed species biology, season, soil type, environmental setting, and objective. In addition, data regarding past treatment successes or failures would also be considered.

Vegetation treatment methods are selected based on several parameters, which may include the following:

- Management program/objective for the site.
- Historic and current conditions.
- Opportunities to prevent future problems.
- Opportunities to conserve native and desirable vegetation.
- Effectiveness and cost of the treatment methods.
- Success of past restoration treatments or treatments conducted under similar conditions or recommendations by local experts.
- Characteristics of the target plant species, including size, distribution, density, life cycle, and life stage in which the plant is most susceptible to treatment.
- Non-target plant species that could be impacted by the treatment.
- Land use of the target area.
- Proximity to communities.
- Slope, accessibility, and soil characteristics of the treatment area.
- Weather conditions at the time of treatment, particularly wind speed and direction, precipitation prior to or likely to occur during or after application, and season.
- Proximity of the treatment area to sensitive areas, such as wetlands, streams, or habitat for plant or animal species of concern.

- Potential impacts to humans or fish and wildlife, including non-game species.
- Need for subsequent re-vegetation and/or restoration.

For most vegetation treatment projects, pre-treatment inventories are conducted before selecting one or more treatment methods. These inventories involve the consideration of all feasible treatments, including their potential effectiveness based on previous experience, and best available science, impacts, and costs. Before vegetation treatment or ground disturbance occurs, the BLM consults specialists or databases for information on sensitive resources within the proposed project area. If no current information exists, the proposed treatment area would have to be inventoried for special status species and evidence of cultural or historic sites.

Detailed descriptions of the methods and equipment used in proposed vegetation treatment actions can be found in *Restoring Western Ranges and Wildlands*, General Technical Report RMRS-GTR-136, Rocky Mountain Research Station (Monsen et al. 2004).

Manual Methods

Manual methods would typically be used on small isolated infestations, around sensitive plant locations, or in areas where chemical or biological control is not practical or is restricted. Manual treatment involves the use of hand tools and hand-operated power tools to cut, clear, or prune herbaceous and woody species. Treatments include cutting undesired plants above the ground level; pulling, grubbing, or digging out root systems of undesired plants to prevent sprouting and regrowth; cutting at the ground level or removing competing plants around desired species.

Hand tools used in manual treatments include the handsaw, axe, shovel, rake, machete, grubbing hoe, mattock (combination of cutting edge and grubbing hoe), pulaski (combination of axe and grubbing hoe), brush hook, and hand clippers. Power tools such as chain saws and power brush saws are also used, particularly for thick-stemmed plants.

Manual treatments, such as hand pulling and hoeing, are most effective where the weed infestation is limited and soil types allow for complete removal of the plant material (Rees et al. 1996). Additionally, pulling works well for annual and biennial plants, shallow-rooted plant species that do not re-sprout from residual roots, and plants growing in sandy or gravelly soils. Repeated treatments are often necessary due to soil disturbance and residual weed seeds in the seed bank.

Manual techniques would be used in many areas, particularly where low impact treatments are desirable. Although they have limited value for weed control over a large area, manual techniques can be highly selective. Manual treatment would be used in sensitive habitats such as riparian areas, areas where burning or herbicide application would not be appropriate, and areas that are inaccessible to ground vehicles (USDI BLM 1991).

Approximately 200-600 acres of manual treatment would occur annually under the proposed action.

Mechanical Methods

Mechanical treatments would be used on larger infestations where manual noxious weed and invasive plant treatments would be impractical or too expensive or where seedbed preparation is required for re-vegetation. Mechanical treatment involves the use of vehicles such as wheeled tractors, crawler-type tractors, or specially designed vehicles with attached implements designed to cut, uproot, mulch, or chop existing vegetation. The selection of a particular mechanical method is based on the characteristics of the vegetation, seedbed preparation and re-vegetation needs, topography and terrain, soil characteristics, and climatic conditions. Mechanical methods that would be used by the BLM include tilling (disk plowing), drill or broadcast seeding, harrowing, chaining, mowing, and mastication.

Disk plowing would be implemented where herbicide or prescribed burning is not a feasible treatment or to create fuel breaks when utilizing prescribed burning treatment. Mechanical disk plowing would be implemented to reduce competition from non-native invasive plants. Application of herbicides such as *Glyphosate* following disk plowing may occur to eliminate any later germination of invasive plants. To be effective, disk plowing would need to be completed prior to seed production of invasive vegetation.

Drill or broadcast seeding in the fall would be utilized to establish desirable perennial vegetation. Rangeland drills or no-till drills would be utilized to seed grass, forb, and shrub mixtures after seedbed treatments (prescribed fire, herbicide, disk plowing, etc.). The rangeland drill was developed to seed rough rangeland sites. The rangeland drill is typically used in open, relatively flat topography, which is fairly absent of larger rocks (8-10" in diameter). This method works well in most soil types and is the primary seeding method that would be used. A no-till drill may be utilized where less rocky conditions allow its use. The advantage to using the no-till drill is less soil disturbance; however, no-till drills are not readily available and can only be used in non-rocky soils. The drill seed method has the greatest probability of seeding success among various seeding tools and methods. Broadcast seeding would be utilized on small tracts or when the terrain is not conducive to drill seeding. The broadcast seeding is normally followed with a cover treatment using a harrow implement.

A harrow implement, such as a Dixie harrow, would be utilized to prepare a seedbed or cover seed broadcast over an area. A Dixie harrow is typically used in situations requiring thinning or removal of a live or dead overstory of shrubs or trees in combination with seeding. The Dixie harrow consists of metal tubes attached to a 1,500 lb. drawbar. Each tube has four sets of steel fins which protrude 12 inches from either side of the tube. When the Dixie harrow is dragged along the ground the design of these fins allow for the tubes to twist and turn which reduces woody cover and covers seed that has been broadcast on the soil surface. A rubber-tired tractor of 150 horsepower or greater is required to pull the Dixie harrow effectively. A tined harrow could be used to cover broadcast seed where no live or dead woody cover is present.

Chaining would be utilized for seed coverage where brittle brush or tree skeletons preclude the use of drills. Chaining can be done on irregular, moderately rocky terrain, with slopes of up to 20%. Chaining may cause soil disturbance, but the plant debris can be left in place to minimize runoff and erosion, shade the soil surface, and maintain soil moisture and nutrient recycling.

Alternatively, the debris can be burned to facilitate seeding, improve scenic values, and eliminate potential rodent habitat. Chaining is a cost-effective means of incorporating seed into soil, especially in burned areas. Chaining provides a variety of seeding depths and microsites, as well as improves ground cover and forage production. Recent studies have shown improved seedling establishment on chained sites and less downy brome establishment 3 years after fire in chained sagebrush and pinyon-juniper habitats (Ott et al. 2003).

Chaining consists of pulling heavy (40 to 90 pounds per link) chains in a “U” or “J” shaped pattern behind two crawler-type tractors. The chain is usually 250 to 300 feet long and may weigh as much as 32,000 pounds. The width of each swath varies from 75 feet to 120 feet. Chain link size, modifications to links and operation of the crawler tractors determine the number and size of trees and shrubs that are removed and the effects on understory species. Chaining can be conducted during the appropriate season to benefit soil stability and plant seeding, and reduce the invasion of weeds (Monsen et al. 2004).

Mowing tools, such as rotary mowers or straight-edged cutter bar mowers, would be used to cut herbaceous and woody vegetation above the ground surface. Generally mowing treatments would be followed-up with herbicide treatments. Mechanical treatments alone have limited use for noxious weed control, as the machinery tends to spread seeds and not kill roots. Mowing is most effective on annual and biennial plants (Rees et al. 1996). Weeds are rarely killed by mowing, and an area may have to be mowed repeatedly for the treatment to be effective (Colorado Natural Areas Program 2000). However, the use of a “wet blade,” in which an herbicide flows along the mower blade and is applied directly to the cut surface of the treated plant, has greatly improved the control of some species.

Mastication would be utilized to remove live or dead shrubs or trees with less soil surface disturbance compared to chaining. Mastication treatment may be followed by spot herbicide application for species that resprout (e.g. Russian olive, tamarisk). Mastication is achieved utilizing an implement such as a Fecon[®] head attached to a crawler-tractor. The head grinds the woody plant from the top down, creating debris that acts as mulch on the soil surface. Mastication can be used in combination with broadcast seeding; the woody debris resulting from mastication provides cover for seed.

Prescribed Fire

Plant communities dominated by non-native invasive plants, such as cheatgrass, could be prescribed burned as an initial seedbed treatment to reduce annual vegetation cover and litter. Sagebrush islands or other important habitat features would be protected from the burn by wet line, foam line, hand line, location of ignition, or other methods. Prescribed burning of fence lines would be proposed where the accumulation of noxious or invasive plants are affecting the integrity of the fence or wildlife migration corridors. A project-level prescribed burn plan would be developed to describe burning parameters and address safety and smoke management.

Biological Control

Biological control involves the intentional use of insects, nematodes, mites, or pathogens (agents such as bacteria or fungus that can cause diseases in plants), or domestic animals that weaken, consume, or destroy vegetation (USDI BLM 1991). The concept of biological control is to introduce natural enemies that are specific to particular weeds and which would not attack other plants. The use of biological agents is strictly controlled and permitted by the United States Department of Agriculture (USDA) - Animal and Plant Health Inspection Service following rigorous testing to ensure that agents are host-specific. The goal of biological control is to reduce the weed to a minor part of the vegetation community instead of the dominant member of the community. Biological control will not eradicate a weed species and is not appropriate to be used when eradication of a weed is the management goal.

Biological control agents have been utilized in the TFD weed control program for approximately 20 years. Biological controls used to date include insects and domestic animals. Under the proposed action, currently approved biological control agents would be released as necessary for weeds such as spotted knapweed, leafy spurge, Dalmatian toadflax, rush skeletonweed, and diffuse knapweed. As new agents are approved for release, they would also be considered as a control method for these weeds. If additional weeds become established in the TFD for which approved agents are available those agents will also be considered as a treatment tool if their use would help to achieve treatment goals. Based on past treatments, an estimated 10 to 30 agent releases would be made per year under this proposal. Table 1 details the biological control agents currently approved for use in Idaho.

Table 1. Approved biological control agents for Idaho.

Weed Target	Biological Control Agent(s)
Dalmatian toadflax Yellow toadflax	Toadflax flower-feeding beetle (<i>Brachypterolus pulicarius</i>) Toadflax moth (<i>Calophasia lunula</i>) Toadflax root-boring moth (<i>Eteobalea intermediella</i>) Toadflax root-boring moth (<i>Eteobalea serratella</i>) Toadflax stem weevil (<i>Mecinus janthiniformis</i>) Toadflax stem weevil (<i>Mecinus janthinus</i>) Toadflax capsule weevil (<i>Rhinusa antirrhini</i>) Toadflax root galling weevil (<i>Rhinusa linariae</i>)
Canada thistle	Canada thistle stem weevil (<i>Hadroplontus [= Ceutorhynchus] litura</i>) Canada thistle gall fly (<i>Urophora cardui</i>)

Weed Target	Biological Control Agent(s)
Diffuse knapweed Spotted knapweed Russian knapweed	Yellow-winged knapweed root moth (<i>Agapeta zoegana</i>) Russian knapweed gall wasp (<i>Aulacidea acroptilonica</i>) Broad-nosed seed head weevil (<i>Bangasternus fausti</i>) Knapweed peacock fly (<i>Chaetorellia acrolophi</i>) Knapweed root weevil (<i>Cyphocleonus achates</i>) Russian knapweed gall midge (<i>Jaapiella ivannikovi</i>) Lesser knapweed flower weevil (<i>Larinus minutus</i>) Blunt knapweed flower weevil (<i>Larinus obtusus</i>) Spotted knapweed seed head moth (<i>Metzneria paucipunctella</i>) Brown-winged root moth (<i>Pelochrista medullana</i>) Grey-winged root moth (<i>Pterolonche inspersa</i>) Bronze knapweed root-borer (<i>Sphenoptera jugoslavica</i>) Russian knapweed stem gall nematode (<i>Subanguina picridis</i>) Green clearwing fly (<i>Terellia virens</i>) Banded gall fly (<i>Urophora affinis</i>) UV knapweed seed head fly (<i>Urophora quadrifasciata</i>)
Field bindweed	Aceria malherbae (<i>Aceria malherbae</i>) Bindweed moth (<i>Tyta luctuosa</i>)
Leafy spurge	Minute spurge flea beetle (<i>Aphthona abdominalis</i>) Brown dot leafy spurge flea beetle (<i>Aphthona cyparissiae</i>) Black leafy spurge flea beetle (<i>Aphthona czwalinae</i>) Copper leafy spurge flea beetle (<i>Aphthona flava</i>) Brown-legged leafy spurge flea beetle (<i>Aphthona lacertosa</i>) Black dot leafy spurge flea beetle (<i>Aphthona nigriscutis</i>) Hungarian clearwing moth (<i>Chamaesphecia hungarica</i>) Leafy spurge hawkmoth (<i>Hyles euphorbiae</i>) Red-headed leafy spurge stem borer (<i>Oberea erythrocephala</i>) Leafy spurge tip gall midge (<i>Spurgia esulae</i>)
Mediterranean sage	Mediterranean sage weevil (<i>Phrydiuchus tau</i>)
Puncturevine	Puncturevine seed weevil (<i>Microlarinus lareynii</i>) Puncturevine stem weevil (<i>Microlarinus lypriformis</i>)
Purple loosestrife	Black-margined loosestrife beetle (<i>Galerucella californiensis</i>) Golden loosestrife beetle (<i>Galerucella pusilla</i>) Loosestrife root weevil (<i>Hylobius transversovittatus</i>) Blunt loosestrife seed weevil (<i>Nanophyes brevis</i>) Loosestrife seed weevil (<i>Nanophyes marmoratus</i>)
Rush skeletonweed:	Skeletonweed root moth (<i>Bradyrrhoa gilveolella</i>) Skeletonweed gall midge (<i>Cystiphora schmidtii</i>) Skeletonweed gall mite (<i>Eriophyes chondrillae</i>) Rush skeletonweed rust (<i>Puccinia chondrillina</i>)
Scotch broom	Scotch broom seed weevil (<i>Exapion fuscirostre</i>) Scotch broom bruchid (<i>Bruchidius villosus</i>)
Yellow starthistle	Yellow starthistle bud weevil (<i>Bangasternus orientalis</i>) Yellow starthistle hairy weevil (<i>Eustenopus villosus</i>) Yellow starthistle peacock fly (<i>Chaetorellia australis</i>) Yellow starthistle gall fly (<i>Urophora sirunaseva</i>)

Accessed 1/17/2013 from the Idaho State Department of Agriculture website and modified by known availability by BLM specialists
http://www.agri.state.id.us/Categories/PlantsInsects/NoxiousWeeds/Bio_Control.php

Only domestic goats would be used to eradicate or control specific noxious weed populations. This method would be used as a small scale application in areas where herbicide use is not desirable due to high human use or sensitive resources, or where manual treatment is impractical due to difficult access. This could include but is not limited to recreation sites including

campsites, trailheads, and trails; near public/private land boundaries; and in areas with steep terrain. Approximately 100 acres would be treated annually using this method under the proposed action. A minimum separation of 9 miles would be maintained between bighorn sheep habitat and any area treated using goats.

Herbicides

The TFD is proposing to use 17 herbicides that were approved for use on public lands by the ROD for the 2007 PEIS. Herbicides would be used to control and eliminate areas of noxious weed and invasive plant spread and to contain existing infestations. The 17 active ingredients in these herbicides are:

- *2,4-D*
- *Bromacil*
- *Chlorsulfuron*
- *Clopyralid*
- *Dicamba*
- *Diflufenzopyr* (in formulation with *dicamba* and known as Overdrive[®] and Distinct[®])
- *Diquat*
- *Diuron*
- *Fluridone*
- *Glyphosate*
- *Hexazinone*
- *Imazapic*
- *Imazapyr*
- *Metsulfuron methyl*
- *Picloram*
- *Tebuthiuron*
- *Triclopyr*

A list of these approved BLM herbicides, available formulations, registered trade names, and general effects can be found in Appendix C. Additional information concerning the herbicides available for use under the Proposed Action is included in the 2007 PEIS.

The active ingredient *sulfometuron methyl* (Oust[®]) was approved for use in the ROD for the 2007 PEIS. Idaho BLM currently has a moratorium (Instruction Memorandum No. ID-2001-050) that disallows the use of this chemical on public lands. Therefore, use of *sulfometuron methyl* is not included as part of the proposed action. In addition, herbicides containing *sulfometuron methyl* in combination with other active ingredients would not be used.

Chemical treatment involves the application of herbicides (chemical compounds), via a variety of application methods, at certain plant growth stages to kill noxious weeds and invasive plants. Depending on the type of herbicide selected, they can be used for control or complete eradication and may be used in combination with other control treatments. Selection of an herbicide and timing of application would depend on its chemical effectiveness on a particular weed species,

habitat types present, proximity to water, and presence or absence of sensitive plant, wildlife, and fish species. Herbicides are most effective on stands of a single weed where desirable and non-target plants are scarce or absent.

Application methods that would be used would include spraying from all-terrain vehicle (ATV), utility-terrain vehicle (UTV), truck, tractor, backpack, horse, helicopter or fixed wing aircraft. Aerial herbicide application would be considered for larger-scale use on a project-by-project basis and is restricted for some herbicides. Twin Falls District application criteria developed from label specifications and the 2007 ROD are listed for each herbicide in Appendix D. All application rates, procedures, and restrictions would be within label specifications.

Approximately 6,000-8,000 spot herbicide applications for noxious weed control would occur annually as an ongoing action. Based on past application records, these spot applications would range in size from a single plant to one acre.

Herbicide Treatment Standard Operating Procedures

The BLM will adopt Standard Operating Procedures (SOP) from the ROD for the 2007 PEIS to ensure that risks to human health and the environment from herbicide treatment actions are kept to a minimum. The SOP are the management controls and performance standards intended to protect and enhance natural resources that could be affected by vegetation treatments involving the use of herbicides. These SOP are listed in Appendix E.

Herbicide Application Criteria

The current list of BLM approved herbicides and local site-specific herbicide use criteria can be found in Appendix D. These criteria along with design features described below would be utilized to formulate site-specific vegetation treatment plans and Pesticide Use Proposals (PUP) across the TFD. The 2007 PEIS decisions concerning specific use of certain chemicals approved for BLM use were included in the development of local use criteria. These decisions are addressed below.

Consistent with decisions made in the 2007 ROD of the PEIS, the BLM will not utilize aerial application of:

- *Bromacil, chlorsulfuron, diuron, and metsulfuron methyl.*
- In addition, *diquat* will not be aerially applied in riparian areas and wetlands.

The use of *tebuthiuron* will be avoided in traditional use areas. To address potential risks associated with the adjuvant R-11[®] and polyoxyethyleneamine (POEA), the BLM will not use R-11[®] in aquatic environments, and either avoid using *glyphosate* formulations containing POEA, or seek to use formulations with the least amount of POEA, to reduce risks to amphibians and other aquatic organisms. In addition to the SOP that are protective of resources/values in the planning area, design features would be applied to public lands that are within all threatened, endangered, proposed, and candidate plant species habitat.

To address concerns regarding potential for off-site soil movement, herbicides used for pre-emergent control of noxious weeds or invasive plants would not be applied to bare soil. These herbicides would not be applied following wildland or prescribed fire until cover of live plants and litter is adequate to prevent off-site soil movement.

Re-vegetation

When natural recovery of the native plant community will not occur following treatment for noxious weeds and invasive plants, re-vegetation would be used to stabilize the site, restore desirable vegetation, and eliminate or reduce the conditions that favor noxious and invasive species. This would be accomplished by seeding or planting desirable perennial vegetation that will re-establish plant community structure and diversity.

Seed Treatments

Based upon site-specific conditions, re-vegetation may include seed-bed preparation (e.g. prescribed fire, disk plowing, and/or herbicide treatments) and seed or seedling plantings. Rangeland drill and broadcast seeding followed by a cover treatment would be the primary methods used for re-vegetation of desirable plant species, especially on larger areas. Seeding would be metered and distributed either by placing seed into the soil at a predetermined depth using a drill or broadcasting seed on the soil surface.

Seed Mixes

Plant materials for vegetation treatment would be selected and seed mixtures designed to best meet land use plan resource management objectives and may include native and/or introduced species. Species selected for use would be taken from the seed list in Appendix F. Species planted on vegetation treatment areas must provide for attainment of resource management objectives and be in compliance with Executive Order 13112, Invasive Species, February 3, 1999.

The use of native species is preferred to the use of non-natives for vegetation treatments. Non-native species selected for use would exhibit the ability to effectively compete with non-native annual vegetation and mimic natives both structurally and functionally. A mixture of native and non-native species would be proposed if all the desired native species are not available in sufficient quantities to meet resource objectives or the existing plant community has crossed an ecological threshold and non-native annual vegetation is dominant. Non-native species could be used if they are the best plant material available to meet the objectives of a project. Seed mixes proposed for use could contain a variety of grasses, forbs, and shrubs and would be consistent with species normally adapted to soils and precipitation of the site.

The use of local seed sources for native plants would be emphasized, especially for ecotypes of plants like big sagebrush (*Artemisia tridentata*). Important elements that would be considered in selecting seed mixtures with native plants include the following:

- availability at a reasonable cost per acre,
- adaptation to the area proposed for treatment (i.e. select the seed mix based on ecological site potential),
- impacts of competition (invasive plants, noxious weeds, other plants in the seed mixture, and existing land uses) on native plant establishment and persistence.

The TFD Emergency Stabilization and Rehabilitation Seed Mixture Development Instruction Memorandum (IM #ID200-2008-003) provides additional guidance on development and use of seed mixes. The recommendations contained in this IM are in Appendix F.

Shrub Seeding and Planting

Following completion of a drill or broadcast seeding treatment, shrub seed (primarily sagebrush) could be applied using aerial or ground methods on the drill seed treatment area. Ground application would be done with a tractor and broadcast seeder. The seed would be lightly covered by a rubber-tired packer or drag chains. Aerial applications typically do not require post-application seed cover.

Shrub seedlings may be planted following a drill seed treatment. In some cases, the only habitat improvement needed is to re-establish shrubs and only shrub planting would occur in such areas. The following upland native shrubs are the primary species that would be utilized for planting: Wyoming and basin big sagebrush (*Artemisia tridentata* ssp. *wyomingensis* and *Artemisia tridentata* ssp. *tridentata*), silver sagebrush (*Artemisia cana*), and antelope bitterbrush (*Purshia tridentata*). Other native shrubs or trees would be used as appropriate to revegetate treated sites (e.g. replanting riparian shrubs where noxious weeds or invasive plants have been treated). Planting would occur during the early spring or late fall when precipitation and temperatures are more favorable for shrub establishment.

Planting of shrub seedlings would be done when it is desirable to establish species quickly, create a seed source, stabilize soils, and/or restore wildlife habitat. This method is usually limited to bare root or containerized shrub or tree seedlings. The disturbance associated with hand planting consists of the area within a 2 to 3-inch radius of the plant. Planting tools include planting bars, hoedads, and augers. If hand planting is done the second growing season after a re-vegetation treatment, a 2 × 2-foot clearing of vegetation for each seedling planted may be required. Areas immediately around the hole may be cleared of competitive vegetation (scalped) using a tool such as a shovel, Pulaski or McLeod.

Mechanical planting can cover larger areas in shorter time periods. Use of a tree planter would create a linear scalp in which a narrow furrow is cut and the shrub planted, and then pressed into the ground.

Livestock and Wild Horse Management

Coordination with permittees would occur on proposed noxious weed and invasive plant treatments where permitted livestock grazing occurs. Livestock would have to be removed for a period of time to allow for treatment implementation and establishment of seeded vegetation.

Resumption of livestock grazing would ultimately depend on monitoring and meeting of resource management objectives. Monitoring needs and resumption of grazing criteria would be developed as part of the site-specific treatment plan. Design features for livestock would be considered and included as appropriate during project planning (see design features for livestock below).

Livestock permittees would be informed of proposed temporary closures early in the project planning process. Temporary livestock closures would be a condition or term on the grazing license or permit through issuance of a grazing decision or agreement (43 CFR 4110.3-3). Grazing decisions or agreements will specify the terms and conditions of closures including the temporary loss of animal unit months (AUM) and monitoring objectives and criteria for re-authorizing livestock grazing on the treated area. If it is determined through monitoring that treatment objectives have not been met, a new proposed decision or agreement would be issued addressing additional rest and/or other livestock management direction needed to help meet treatment objectives.

Treatments for noxious weeds and invasive plant communities within the Saylor Creek Wild Horse Herd Management Area (HMA) would be focused on improving rangeland health and reducing fire frequency. Proposed treatments would be implemented in such a way to prevent the removal of horses from the HMA. Design features for wild horses would be considered and included as appropriate during project planning (see design features for wild horses below).

Livestock and wild horses may be temporarily excluded from a treatment area by using existing management fences or constructing temporary fences. Temporary fences would be placed around the perimeter of a treated area to the minimum degree required. When constructing fences, such factors as topography, rocky outcrops, soils, and existing fences would be considered. Temporary fence construction would be strategically located to avoid concentration of livestock and/or wild horses in riparian habitats. If necessary, cattleguards, gates, and caution signs may also be installed on county, agency, or state roads, highways, and areas of high recreation use where new fences are built. Fence construction will conform to BLM Manual Handbook H-1741-1. In general, all fence posts, braces, and gates would be constructed of steel or wood.

The size of the treated area to be fenced, difficulty in fence construction (e.g. topography, land ownership), special status species habitat protection, the temporary loss of AUM, and the economic impact to livestock permittees would be considered prior to determining if a protective fence is required. Cost effectiveness is an important consideration when determining if a fence is needed, especially if the tangible benefits produced by the money spent to construct a fence are minimal.

Cultural Resources

Inventories for cultural resources would be performed during project planning. Consultation with the State Historic Preservation Officer will be completed (Section 106 of the National Historic Preservation Act) according to the National Programmatic Agreement. Important cultural resource sites identified during the inventory will be recorded, marked, and avoided during

treatment implementation. Law enforcement patrols may be used to protect cultural resources from unauthorized human activities.

Paleontological Resources

The potential for paleontological resources would be assessed during project planning. Field inventories would be conducted as needed for sites where there is potential for paleontological resources to occur. Important paleontological resource sites identified during the inventory will be recorded, marked, and avoided during treatment implementation.

Design Features

The purpose of a design feature is to reduce or eliminate potential impacts that may be caused by vegetation treatment actions. Design features were derived from land use plans, conservation plans and agreements, existing NEPA documents, and current ESA Section 7 consultations. In addition, mitigation measures resulting from the ROD of the 2007 PEIS were adopted and included as design features, as appropriate. Where multiple design features in different documents addressed the same resource, the most conservative option was chosen for incorporation here. Project-specific design features in addition to those listed below could be included in individual project plans if needed to reduce or eliminate potential adverse impacts.

Soils

Where practical, minimum tillage or no tillage would be used on soils with high to very high wind erosion susceptibility.

Wet soils at field capacity would be minimally disturbed.

Drill rows and all seed covering projects would run along the contours of the land, where possible, to reduce erosion.

Water Resources and Quality, Wetlands, and Riparian Areas

Establish appropriate (herbicide-specific) buffer zones to downstream water bodies, habitats, and species/population areas of interest (see Appendix C, Table C-16, of the Final PEIS, and Table 2).

Areas with potential for groundwater for domestic or municipal water use shall be evaluated through the appropriate, validated U.S. Environmental Protection Agency model(s) to estimate vulnerability to potential groundwater contamination, and appropriate mitigation measures shall be developed if such an area requires the application of herbicides and cannot otherwise be treated with nonchemical methods.

Table 2. Streamside, Wetland, and Riparian Habitat Restrictions for Herbicide Use.

Herbicide Application Method	Max. Wind Speed	Riparian Area of Influence	Aquatic Level of Concern Category* for Authorized Herbicides
Aerial	5 mph	>0.5 miles from all water bodies and springs containing listed snail and bull trout species	Low and Moderate
Aerial	5 mph	>150 feet from outer edge of riparian areas associated with perennial water (includes both fish bearing or non-fish bearing streams) that contain or are upstream of reaches that contain special status aquatic species	Low and Moderate
Aerial	5 mph	>150 feet from outer edge of riparian areas for intermittent streams that are upstream of reaches containing special status aquatic species	Low and Moderate
All ground/broadcast spraying methods.	8 mph	>100 feet from live waters but within upland areas where ground-based herbicide applications may influence riparian habitat	Low and Moderate
Wicking, dipping, painting, and injecting.	N/A	>100 feet from live waters but within upland areas where ground-based herbicide applications may influence riparian habitat	Low and Moderate
Ground/spot spraying, wicking, wiping, dipping, painting, injecting. Selective spraying of target species only (e.g. spot treatment of individual plants).	8 mph	>15 feet from live waters or shallow water tables, or within riparian areas	Low
Backpack sprayer, hand sprayer, wicking, wiping, dipping, painting, and injecting. Selective spraying of target species only (e.g. spot treatment of individual plants).	5 mph	>10 feet from live water or shallow water tables	Aquatic approved herbicides only. No use of surfactants will be authorized.

*Aquatic Level of Concern is a form of risk analysis used by the United States Fish and Wildlife Service (USFWS) based on procedures developed by the Environmental Protection Agency to identify a gradual “level of concern” scale based on how close the Estimated Environmental Concentration value is 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).

Vegetation (General)

Minimize the use of terrestrial herbicides (especially *bromacil* and *diuron*) in watersheds with downgradient ponds and streams if potential impacts to aquatic plants are identified.

Establish appropriate (herbicide-specific) buffer zones (see Tables 4-12 and 4-14 in Chapter 4 of the Final PEIS) around downstream water bodies, habitats, and species/populations of interest. Consult the ecological risk assessments (ERAs) prepared for the PEIS for more specific information on appropriate buffer distances under different soil, moisture, vegetation, and application scenarios.

Wildlife (General)

To minimize risks to terrestrial wildlife, do not exceed the typical application rate for applications of *dicamba*, *diuron*, *glyphosate*, *hexazinone*, *tebuthiuron*, or where feasible, *triclopyr*,

Minimize the size of application areas, where practical, when applying *2,4-D*, *bromacil*, *diuron*, and Overdrive[®] to limit impacts to wildlife, particularly through contamination of food items.

Where practical, limit *glyphosate* and *hexazinone* to spot applications in rangeland and wildlife habitat areas to avoid contamination of wildlife food items.

Avoid using the adjuvant R-11[®] in aquatic environments, and either avoid using *glyphosate* formulations containing POEA, or seek to use formulations with the least amount of POEA, to reduce risks to amphibians.

Do not apply *bromacil* or *diuron* in rangelands, and use appropriate buffer zones (see Tables 4-12 and 4-14 in Chapter 4 of the Final PEIS) to limit contamination of off-site vegetation, which may serve as forage for wildlife.

Activities in big game habitat would be restricted during the following periods unless short-term exemption is granted by the field office manager. These dates, as specified, are general in nature and may be adjusted as needed based on local conditions:

- Big game winter range: November 15 – April 30
- Calving/fawning
 - Elk/deer: May 1 – June 30
 - Pronghorn: May 15 – June 30
- Bighorn sheep lambing: April 15 – June 15

See Appendix G for additional information regarding seasonal wildlife restrictions.

Fish and Other Aquatic Organisms (General)

Limit the use of *diquat* in water bodies that have native fish and aquatic resources.

Limit the use of terrestrial herbicides (especially *diuron*) in watersheds with characteristics suitable for potential surface runoff that have fish-bearing streams during periods when fish are in life stages most sensitive to the herbicide(s) used.

Establish appropriate herbicide-specific buffer zones for water bodies, habitats, or fish or other aquatic species of interest (see Table 2 and Appendix C, Table C-16, of the Final PEIS, and recommendations in individual ERAs).

Consider the proximity of application areas to salmonid habitat and the possible effects of herbicides on riparian and aquatic vegetation. Maintain appropriate buffer zones around salmonid-bearing streams (see Appendix C, Table C-16, of the Final PEIS, and recommendations in the individual ERAs).

Avoid using the adjuvant R-11[®] in aquatic environments and either avoid using *glyphosate* formulations containing POEA, or seek to use formulations with the least amount of POEA, to reduce risks to aquatic organisms in aquatic environments.

Livestock

Minimize potential risks to livestock by applying *diuron*, *glyphosate*, *hexazinone*, *tebuthiuron*, and *triclopyr* at the typical application rate, where feasible.

Do not apply *2,4-D*, *bromacil*, *dicamba*, *diuron*, *Overdrive*[®], *picloram*, or *triclopyr* across large application areas, where feasible, to limit impacts to livestock, particularly through the contamination of food items.

Where feasible, limit *glyphosate* and *hexazinone* to spot applications in rangeland.

Do not apply *bromacil* or *diuron* in rangelands, and use appropriate buffer zones (see Tables 4-12 and 4-14 in Chapter 4 of the Final PEIS) to limit contamination of off-site rangeland vegetation.

Wild Horses

Minimize potential risks to wild horses by applying *diuron*, *glyphosate*, *hexazinone*, *tebuthiuron*, and *triclopyr* at the typical application rate, where feasible, in areas associated with wild horse use.

Consider the size of the application area when making applications of *2,4-D*, *bromacil*, *dicamba*, *diuron*, *Overdrive*[®], *picloram*, and *triclopyr* in order to reduce potential impacts to wild horses.

Apply herbicide label grazing restrictions for livestock to herbicide treatment areas that support populations of wild horses.

Do not apply *bromacil* or *diuron* in grazing lands within the HMA, and use appropriate buffer zones identified in Tables 4-12 and 4-14 in Chapter 4 of the Final PEIS to limit contamination of vegetation in off-site foraging areas.

Do not apply *2,4-D*, *bromacil*, or *diuron* in the HMA during the peak foaling season (March through June, and especially in May and June), and do not exceed the typical application rate of *Overdrive*[®] or *hexazinone* in the HMA during the peak foaling season in areas where foaling is known to take place.

Native American Traditional Use Areas

Do not exceed the typical application rate when applying *2,4-D*, *bromacil*, *diquat*, *diuron*, *fluridone*, *hexazinone*, *tebuthiuron*, and *triclopyr* in known traditional use areas.

Avoid applying *bromacil* or *tebuthiuron* aerially in known traditional use areas.

Limit *diquat* applications to areas away from high residential and traditional use areas to reduce risks to Native Americans.

Human Health and Safety

Use the typical application rate, where feasible, when applying *2,4-D*, *bromacil*, *diquat*, *diuron*, *fluridone*, *hexazinone*, *tebuthiuron*, and *triclopyr* to reduce risk to occupational and public receptors.

Avoid applying *bromacil* and *diuron* aerially.

Limit application of *chlorsulfuron* via ground broadcast applications at the maximum application rate.

Limit *diquat* application to ATV, truck spraying, and boat applications to reduce risks to occupational receptors; limit *diquat* applications to areas away from high residential and subsistence use to reduce risks to public receptors.

Evaluate *diuron* applications on a site-by-site basis to avoid risks to humans. There appear to be few scenarios where *diuron* can be applied without risk to occupational receptors.

Do not apply *hexazinone* with an over-the-shoulder broadcast applicator.

Special Status Species

If special status plant and/or animal populations and their habitats occur in a proposed treatment area, the area would be assessed for habitat quality and the need for treatment. The current BLM special status species list and their presence in each field office is found in Appendix H.

Proposed treatments near or adjacent to special status species habitat would typically be designed to occur outside the sensitive periods of a species life cycle or habitat (i.e. breeding season,

winter habitat). There may be situations where completing the project during the sensitive period may be more beneficial to the species over time than if the project was not done at all. Such treatments would be designed to minimize potential impacts to special status species and their habitats.

Native plant seed mixes would be used in BLM sensitive plant habitats, unless native plant materials and seed are not available. Another exception (depending on the plant species and its special status designation) is when the use of non-native plant species contributes beneficially to maintaining and protecting habitat (e.g. preventing the spread of noxious weeds into habitat) and reducing fire frequency.

Special Status Plants

Type 1, Federally Threatened, Endangered, and Candidate Plant Species

Slickspot peppergrass (*Lepidium papilliferum*), Proposed Species

BLM will promote diversity, richness, and health of native plant communities to support pollinators and habitat for slickspot peppergrass.

- BLM will focus slickspot peppergrass habitat conservation and restoration efforts in or adjacent to occupied habitat to encourage connectivity among populations through the following measures:
 - Where slickspot habitat exists, BLM will conserve remaining stands of sagebrush and native stands of vegetation in making activity plan and project level decisions.
 - Vegetation treatment projects undertaken in slickspot peppergrass habitat will be compatible with species habitat restoration objectives.
 - BLM will select and implement specific projects to restore slickspot peppergrass in degraded areas as funding allows, such as planting shrubs and forbs and controlling weeds, within and adjacent to occupied habitat.
 - When conducting vegetation treatment projects, BLM will use seeding techniques that minimize soil disturbance such as no-till drills and rangeland drills equipped with depth bands, use native plant materials and seed during restoration activities, and select native forbs that benefit slickspot peppergrass insect pollinators.

Prescribed fire projects will be designed to conserve and enhance slickspot peppergrass habitat.

- Prescribed fire in slickspot peppergrass habitat will only be used as a tool for assisting with species conservation (for example, a burn in preparation to decrease cheatgrass litter before herbicide application, or to clear fence lines of accumulated windblown weeds).

Vegetation treatment projects conducted in slickspot peppergrass habitat should have long-term benefits to slickspot peppergrass.

- Avoid vegetation treatment projects in occupied habitat, unless such projects would enhance species conservation or are necessary for hazardous fuels reduction near the urban interface. Implement protection measures to avoid or minimize negative impacts to the species. In slickspot peppergrass habitat, design native seed mixes that emphasize local stock and will promote species conservation.

- BLM will avoid or minimize activities that could be ground disturbing within element occurrences when soils are saturated and/or when slickspot peppergrass is flowering.
- If native plant materials and seed are not available, non-invasive, non-native species may be used in slickspot peppergrass habitat.
- In areas adjacent to slickspot peppergrass habitat, if natives are not available, non-invasive, non-native species are acceptable.
- Highly competitive, non-native plant materials such as prostrate kochia (*Bassia prostrata*) may be used as a last resort in areas adjacent to slickspot peppergrass habitat provided the benefits of their use are demonstrated to outweigh the risks to slickspot peppergrass and its habitat.
- Although non-chemical methods are preferred in occupied habitat, projects involving the application of pesticides (including herbicides and other related chemicals) in slickspot peppergrass habitat and potential habitat that may affect the species will be analyzed at the project level and designed such that pesticide applications will support conservation and minimize risks of exposure.

Site-specific stipulations for pesticide application would be developed locally using the following criteria:

- Evaluate the benefits and risks of vegetation treatment including the following: application methods; pesticides, carriers, and surfactants used; needed treatment buffers; and use of non-chemical weed control (for example, bio-controls, hand pulling).
- Apply appropriate spatial and temporal buffers to avoid exposure of slickspot peppergrass to harmful chemicals.
 - Herbicide application within slickspot peppergrass element occurrence boundaries would be done only with hand sprayers. A 10-foot no-herbicide treatment buffer would be established around slickspots located in element occurrences. Weeds would be treated by hand within the buffer zone.
 - Ground-based herbicide application within management area boundaries will be limited to when wind conditions are less than 7 miles per hour, use large droplet spray with reduced pump pressure, and use spot spraying techniques to prevent drift of herbicide into slickspot peppergrass habitat.
 - No persistent herbicides will be used for noxious weed treatments within 150 feet of slickspot peppergrass element occurrences.
- Explore opportunities to eradicate competing non-native invasive plants in occupied habitat where slickspots are being invaded by such plants.
- Implement appropriate re-vegetation and weed control measures to reduce the risks of non-native invasive plant infestations following ground/soil disturbing actions in slickspot peppergrass habitat.
- Avoid pesticide contact with slickspot peppergrass plants or insect pollinators near element occurrences.
- Herbicide applications will be implemented in a manner to avoid off-site movement of herbicides either through the air, soil, or along the soil surface. Project site terrain, soil type, and vegetation will be taken into consideration when selecting herbicide type, application method, and application timing.

Site-specific vegetation treatment plans will use *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Slickspot Peppergrass* to analyze potential effects of proposed treatments on slickspot peppergrass or its habitat.

Goose Creek Milkvetch (*Astragalus anserinus*), Candidate Species

- Ground-disturbing activities would not occur, unless it is clearly beneficial for Goose Creek milkvetch. Only aerial seedings or hand plantings would occur in Goose Creek milkvetch habitat.
- Highly competitive non-native plant materials such as intermediate wheatgrass (*Agropyron intermedium*) would not be used in Goose Creek milkvetch habitat.
- Only hand treatment methods, including spot herbicide treatment, would be used to control noxious weeds or invasive plants in occupied Goose Creek milkvetch habitat. Herbicide treatments would be applied in a manner that avoids application to Goose Creek milkvetch.

Rangewide/Globally Imperiled Plant Species, Types 2 (High Endangerment) and 3 (Moderate Endangerment)

The following design features would apply to areas containing plants designated as BLM sensitive species and their habitats.

- Requirements of individual BLM sensitive plants would be considered when designing ground-disturbing activities in their habitats.
- Seeding within occupied habitat would not be done, unless it is clearly beneficial for the BLM sensitive plants occupying the site.
- Highly competitive non-native plant materials would not be used in BLM sensitive plant habitats unless native plant materials are unavailable or they are needed to stabilize a site.
- The biology and ecology of BLM sensitive plants would be considered when selecting herbicides and application methods. Treatments would be designed to minimize or mitigate adverse impacts to the plants and their habitat.

Special Status Wildlife Species

Proposed herbicide applications near streamside, wetland, and riparian habitats would be implemented following the restrictions shown in Table 2.

Type 1 Federally Threatened, Endangered, and Candidate Species

Aquatic Species

Bruneau Hot Springsnail (*Pyrgulopsis bruneauensis*), Endangered
Banbury Springs Limpet (*Lanx* sp.), Endangered
Snake River Physa Snail (*Physa natricina*), Endangered
Bliss Rapids Snail (*Taylorconcha serpenticola*), Threatened
Jarbidge River Bull Trout (*Salvelinus confluentus*), Threatened
Columbia Spotted Frog (*Rana luteiventris*), Candidate Species

In addition to the general design features listed above for Water Resources and Quality and Fish and Other Aquatic Organisms, the following would be applied:

- Ground-disturbing activities other than tree and shrub planting would not occur within 300 feet of all water bodies and springs containing Snake River snails, Bruneau hot springsnail, Columbia spotted frog, and the Jarbidge River bull trout.
- Aerial seeding within or upstream of occupied habitat will be limited to seed mixtures with no added chemicals such as fertilizer.
- Hydro-mulch will not be used within occupied habitat to avoid impacts associated with decreased water quality.
- Aerial applications of herbicides will not occur within 0.5 miles of the Snake River or occupied habitats.
- Herbicide methods used within 0.5 miles of occupied habitats or the Snake River will be ground-based spot treatments of noxious weeds and will be implemented according to the herbicide use restrictions in Table 2.
- Broadcast boom spraying would not occur within 100 feet from live waters or shallow water tables, or within riparian areas.
- Neither surfactant R-900 nor picloram will be authorized for use within or adjacent to riparian habitats.
- Helicopter service landings, fuel trucks, and fueling or storage of fuel would not occur within 300 feet of live waters containing threatened, endangered, or candidate species.

The January 2004 Version 2.1 Interagency National Fire Plan consultation process and summary worksheets (available on-line at <http://www.or.blm.gov/fcp>) or subsequent versions will be used to verify that site-specific proposals will not adversely affect bull trout.

Yellow-billed Cuckoo (*Coccyzus americanus*), Candidate Species

- When developing vegetation treatment projects, no ground-based application of herbicides would occur from May 1 to August 31 within 200 feet of occupied yellow-billed cuckoo habitat.
- Aerial application of chemicals would not occur from May 1 to August 31 within 0.5-mile of occupied yellow-billed cuckoo habitat.

Greater Sage-grouse (*Centrocercus urophasianus*), Candidate Species

Sage-grouse would be used as an umbrella species when planning vegetation treatments in sagebrush steppe (Noss 1990; Rich and Altman 2001; Rowland et al. 2006). The assumption is habitat needs for other sagebrush-obligate sensitive species would benefit from protection, improvement, and restoration of sage-grouse habitat. Other sagebrush obligates include pygmy rabbit (*Brachylagus idahoensis*), sage thrasher (*Oreoscoptes montanus*), sage sparrow (*Amphispiza belli*), and Brewer's sparrow (*Spizella breweri*). In some cases, some species may have habitat needs in addition to what is outlined for sage-grouse. Where identified, the interdisciplinary team would address unique habitat needs of other sagebrush obligates. The following design features would apply to sagebrush steppe habitats.

- The Idaho Sage-grouse Habitat Planning map (USDI BLM 2011b) and Greater Sage-Grouse Preliminary Priority and General Habitat map (Version 2, April 2012) would be used when developing vegetation treatment activities that benefit sage-grouse and other sagebrush-obligate species.
- Temporary protection fences would not be constructed within 400 yards of an active sage-grouse lek. If sage-grouse collisions are possible due to fence placement, marking or flagging would be done.
- Vegetation treatments within 0.6 miles of occupied sage-grouse leks that results in or could likely result in disturbance to lekking birds would be avoided from approximately 6:00 pm to 9:00 am. This guideline would apply from March 15 through May 1 in lower elevation habitats and March 25 through May 15 in higher elevation habitats.
- Treatments in areas supporting sage-grouse nesting habitat would be limited from April 30 through June 15.
- Treatments in close proximity to sage-grouse wintering habitats would be limited from December 1 through March 1.
- Within vegetation treatment areas, standing dead juniper trees that are potential raptor perches may be felled as needed to protect pygmy rabbits and sage-grouse from excessive predation.

Gray Wolf (*Canis lupus*), Experimental Population

- Vegetation treatment activities within 1 mile of an active gray wolf den or rendezvous site will be avoided from April 15 through June 30.

Type 2 Rangewide/Globally Imperiled Species

Aquatic Species

Redband trout (*Oncorhynchus mykiss*)
Utah Valvata snail (*Valvata utahensis*)
Snake River white sturgeon (*Acipenser transmontanus*)
Wood River sculpin (*Cottus leiopomus*)
Yellowstone cutthroat (*Oncorhynchus clarkia*)
Shoshone sculpin (*Cottus greenei*)

The design features listed in Table 2 and those identified for Type 1 species also apply when planning vegetation treatment actions in Type 2 aquatic species habitats.

Migratory Bird Species of Conservation Concern

The presence of birds protected by the Migratory Bird Treaty Act on proposed vegetation treatment areas would be determined. If migratory birds are known or suspected to occur in a site-specific project area, the area would be examined for habitat quality and the need for treatment. Treatments would be designed to minimize potential impacts to migratory birds and their habitats. Specific design features such as avoidance of occupied areas, distances from occupied habitat, etc. would be outlined in the site-specific treatment plan. Some of the birds listed on the Migratory Birds Species of Conservation Concern (Appendix I) are also designated as BLM special status species, including Type 3 Regional/State Imperiled Species and Type 4 Peripheral Species in Idaho.

In general, treatments in areas with known breeding populations of migratory birds would be avoided during the nesting season, generally February 1 – July 31. Specific avoidance dates and distances would be determined based on location and species present.

Raptors

Seasonal restrictions for potentially disruptive construction or other human activities, will generally apply for raptors from February 1 through July 31 unless an exception is granted by the BLM field office manager. General spatial buffers are listed in Table 3. Temporary exceptions can be granted in situations where the raptor nest has been destroyed (e.g., by wind, wildfire, lightning), or is not currently active (i.e., young have fledged or if the nest is unused in the current nesting season). Exceptions or temporal deviations from the established February 1 - July 31 timeframe may also be granted based on species, variations in nesting chronology of particular species locally, topographic considerations (e.g., intervening ridge between treatment activities and a nest) or other factors that are biologically reasonable.

Table 3. General spatial buffers for nesting raptors.

Species	Spatial Buffer in Non-Urban Areas (Miles)
Ferruginous hawk	1.0
Northern goshawk	0.5
Peregrine falcon	1.0
Prairie falcon	0.5
Red-tailed hawk	0.33
Swainson's hawk	0.25
Burrowing owl	0.25 mile

Bald and Golden Eagles

- Aerial seeding treatments (e.g. sagebrush) within 1000 feet of active American bald (*Haliaeetus leucocephalus*) and golden eagle (*Aquila hrysaetos*) nests would be avoided between January 1 and January 31.
- Aerial seeding treatments and aerial application of herbicides would be avoided within 0.5 miles to one mile of active American bald and golden eagle nests between February 1 and July 31. Avoidance distances would be determined by the amount of screening provided by vegetation or topographic features.
- On-the-ground vegetation treatments would be avoided within 0.5 miles of direct line of sight or within 0.25 miles of bald eagle winter concentration sites during the winter roosting season (November 1 through March 1).
- Aerial treatment applications will be avoided within 0.5 mile of bald eagle winter concentration sites during November 1 through March 1.
- If treatments are necessary to meet vegetation treatment objectives outside of the temporal and spatial restrictions for bald or golden eagles, the BLM may apply for a Non-Purposeful Take Permit from the USFWS. The BLM would not conduct such treatments until a permit is acquired.

Other BLM Species of Concern

Stabilization projects would not occur in Idaho Dunes Tiger beetle (*Cicindela arenicola*) habitat (i.e. sand dunes). Vegetation treatments to control noxious weeds and invasive plants would preserve the natural integrity and character of sand dune habitats to the greatest extent possible.

Treatments within 0.6 miles of occupied Columbian sharp-tail grouse (*Tympanuchus phasianellus columbianus*) leks that results in or could likely result in disturbance to displaying birds would be avoided from approximately 6:00 pm to 9:00 am. This guideline would be applied from March 15 through April 30 in lower elevation habitats and March 25 through May 15 in higher elevation habitats.

Special Management Areas

National Landscape Conservation System

The National Landscape Conservation System includes Wilderness, Wild and Scenic Rivers, wilderness study areas, National Historic and Scenic Trails, National Monuments, and National

Conservation Areas. The TFD contains a Wilderness, three designated Wild and Scenic Rivers, several wilderness study areas, two National and Historic Trails, and one National Monument and Preserve.

Wilderness and Wild and Scenic Rivers

Sections 1503 and 1504 of the Omnibus Public Land Management Act (OPLMA) of 2009 (123 Stat. 1032-1040) established the Bruneau-Jarbidge Rivers Wilderness and Bruneau, Jarbidge, and West Fork of the Bruneau Wild and Scenic Rivers. Vegetation treatment activities within the Bruneau-Jarbidge Rivers Wilderness and Wild and Scenic River corridors would be applied following the management considerations and vegetation treatment guidelines approved in the final decision record of the Owyhee Canyonlands Wilderness and Wild and Scenic Rivers Management Plan (WMP) and Environmental Assessment (DOI-BLM-ID-B000-2011-0001-EA). Interim noxious weed treatments would be implemented consistent with OPLMA and BLM Manual 6340 (Management of Designated Wilderness Areas) until the WMP is completed.

Wilderness Study Areas

Vegetation treatments and design features in wilderness study areas would be designed consistent with BLM Manual 6330 – Management of Wilderness Study Areas.

National Historic Trails

National Historic Trails (NHT) passing through the TFD includes the Oregon and California trails. New or revised design features would be incorporated in the event of new NHT management plans.

- Historic trails adjacent to proposed treatment areas would be marked and monitored by a cultural resource specialist to ensure intact ruts are not disturbed.
- Vegetation treatments should focus on maintaining or improving the visual setting of the Oregon NHT to the extent practicable. Surface-disturbing activities should be kept to the minimum necessary within a 330-foot distance from the trail. Utilize broadcast seeding, chains, or harrows if a feasible alternative to rangeland drills, or a combination of methods with drills that reduce the appearance of drill rows.
- Mechanized equipment (both wheeled and tracked) would not be used on the Oregon NHT.
- Seeding along the Oregon Trail would be done using native plant species and broadcasting methods.
- Visual Resource Management guidelines and specifications of the Oregon NHT and other scenic values would be protected within the Oregon NHT protective zone, a 0.25-mile corridor on either side of the Oregon Trail.

Craters of the Moon National Monument and Preserve

Design features relevant to specific resources are identified in those sections of the Craters of the Moon MP (USDI NPS and BLM 2007). The following features are identified in the MP and only apply to vegetation treatment actions within the Craters of the Moon National Monument and Preserve.

- Use of native plants would be emphasized in rehabilitation and restoration projects, and only native plants would be used for rehabilitation or restoration projects within the Pristine Zone.
- Integrated noxious weed management principles would be used to: 1) detect and eradicate all new infestations of noxious weeds; 2) control existing infestations; and 3) prevent the establishment and spread of noxious weeds within and adjacent to the planning area.
- Plant materials used in vegetation treatments would be predominately native. However, non-native species may be used in vegetation treatments in the BLM portion of the Monument on harsh or degraded sites where they are needed to structurally mimic the natural plant community and prevent soil loss and invasion by invasive plants and noxious weeds. The species used would be those that have the highest probability of establishment on these sites without invading surrounding areas. These “placeholders” would maintain the area for future native restoration. Native seed would be used more frequently and at larger scales as species adapted to the local area become available.
- Crucial big game winter range—Limit activities from November 15 through April 30. Treatments occurring on crucial winter range would be coordinated with the Idaho Department of Fish and Game (IDFG).
- Elk calving area—Limit activities from May 15 through June 30. Treatments occurring in elk calving areas would be coordinated with IDFG.
- Pronghorn and mule deer fawning ground—Treatments occurring in fawning areas would be coordinated with IDFG with limited activities occurring from May 15 through June 30.

Areas of Critical Environmental Concern

Areas of Critical Environmental Concern is a designation that highlights areas where special management attention is needed to protect and prevent irreparable damage to important historic, cultural and scenic values, fish, wildlife, or other natural systems or processes, or to protect human life and safety from natural hazards. Vegetation treatments in ACECs would protect the values for which the area was established and would be in conformance with applicable management direction contained in the land use plans and activity plans.

Monitoring

For herbicide use, implementation monitoring is accomplished through the use of Pesticide Use Proposals (PUP) and Pesticide Application Records. Both documents are required by the BLM in order to track pesticide use annually. The PUP requires reporting of the pesticide proposed for use and the maximum application rate. It also requires reporting of the number and timing of applications. Targeted and non-targeted species at the treatment site are described, as well as the other site characteristics. A description of sensitive resources and mitigation measures to protect these resources is also required. Most importantly, the integrated weed management approach to be taken (i.e., the combination of treatments to be used) is required. The NEPA document that analyzes the effects of the treatment must also be referenced. The PUP must be signed by a certified weed applicator, the field office manager, state coordinator, and deputy state director before the treatment can go forward. The Pesticide Application Record, which must be completed within 24 hours after completion of the application, documents the actual rate of

application and that all the above factors have been taken into account. Pesticide Application Records are used to develop annual state summaries of herbicide use for BLM.

Invasive plant implementation monitoring for non-herbicide treatments is accomplished through site revisits performed during the growing season of the target species to determine if treatments were implemented correctly and the best time for follow-up treatments.

Monitoring of invasive plant treatment effectiveness can range from site visits to compare the targeted population size against pre-treatment inventory data, to comparing pre-treatment and post-treatment photo points, to more elaborate transect work, depending on the species and site-specific variables. The goals of monitoring should be to answer questions such as the following:

- What changes in the distribution, amount, and proportion of invasive plant infestations have resulted due to treatments?
- Has infestation size been reduced at the project level or larger scale (such as a watershed)?
- Which treatment methods, separate or in combination, are most successful for a particular species? (USDA FS 2005).

Baseline vegetation inventories would be conducted to determine invasive plant community conditions and to determine the need and scope of treatments to reduce infestations. Post treatment monitoring would occur to evaluate success of the treatments. The methods used to monitor treatments would include field observations, photo plots, cover transects, density, and belt transects. Post-treatment monitoring of invasive plant treatments requiring re-vegetation treatments would occur annually for three years to determine vegetation treatment effects and success. Long-term monitoring for successful treatments would occur at five years then at five year intervals, dependent on available funding.

Monitoring activities will be conducted according to the Twin Falls District Land Treatment Monitoring Guidelines outlined in Instruction Memorandum IDIMT000-2012-001 (Appendix J).

NO ACTION ALTERNATIVE - CONTINUE PRESENT HERBICIDE USE

Under this alternative, the BLM would continue to implement the existing decisions for noxious weed and invasive plant treatment in each field office. Proposed hazardous fuel reduction and invasive plant community treatments would continue to be analyzed in separate site-specific EAs. Herbicides approved by the ROD of the 2007 PEIS but not included in the existing EAs could be utilized if analyzed in site-specific project level EAs. On-going activities and spot treatments of noxious weeds would continue under existing noxious weed and project level EAs.

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APPENDICES

Appendix A - State of Idaho Noxious Weed List and TFD Invasive Plants List

State of Idaho Noxious Weeds - Statewide Early Detection Rapid Response List

Common Name	Scientific Name	Known Counties of Occurrence in the TFD
Brazilian Elodea	<i>Egeria densa</i>	None
Common European Frogbit	<i>Hydrcharis morsus-ranae</i>	None
Fanwort	<i>Cobomba caroliniana</i>	None
Feathered Mosquito Fern	<i>Azolla pinnata</i>	None
Giant Hogweed	<i>Heracleum mantegazzianum</i>	None
Giant Salvinia	<i>Salvinia molesta</i>	None
Hydrilla	<i>Hydrilla verticillata</i>	Owyhee
Policeman's Helmet	<i>Impatiens glandulifera</i>	None
Squarrose Knapweed	<i>Centaurea trimefetti</i>	None
Syrian Beancaper	<i>Zygophyllum fabago</i>	Blaine, Gooding, Minidoka
Tall Hawkweed	<i>Hieracium piloselloides</i>	None
Variable-Leaf-Milfoil	<i>Myriophyllum heterophyllum</i>	None
Water Chestnut	<i>Trapa natans</i>	None
Yellow Devil Hawkweed	<i>Hieracium glomeratum</i>	None
Yellow Floating Heart	<i>Nymphoides pelata</i>	None

State of Idaho Noxious Weed-Statewide Control List

Common Name	Scientific Name	Known Counties of Occurrence in the TFD
Black Henbane	<i>Hyoscyamus niger</i>	Blaine, Cassia, Elmore, Gooding, Minidoka, Owyhee, Twin Falls
Bohemian Knotweed	<i>Polygonum bohemicum</i>	None
Buffalobur	<i>Soalnum rostratum</i>	None
Common Crupina	<i>Crupina vulgaris</i>	None
Common Reed	<i>Phragmites australis</i>	None
Dyer's Woad	<i>Isatis Tinctoria</i>	Blaine, Elmore, Jerome, Lincoln, Owyhee
Eurasian Watermilfoil	<i>Myriophyllum spicatum</i>	None
Giant Knotweed	<i>Polygonum sachalinense</i>	None
Japanese Knotweed	<i>Polygonum cuspidatum</i>	None
Johnsongrass	<i>Sorghum halepense</i>	None
Matgrass	<i>Nardus stricta</i>	None
Meadow Knapweed	<i>Centaurea debeauxii</i>	None
Mediterranean Sage	<i>Salvia aethiopsis</i>	Twin Falls
Musk Thistle	<i>Cardus nutans</i>	Blaine, Cassia, Gooding, Jerome, Minidoka, Owyhee, Twin Falls
Orange Hawkweed	<i>Hieracium aurantiacum</i>	Elmore, Jerome
Parrotfeather Milfoil	<i>Myriophyllum aquaticum</i>	Jerome
Perennial Sowthistle	<i>Sonchus arvensis</i>	Twin Falls
Russian Knapweed	<i>Acroptilon repens</i>	Blaine, Cassia, Elmore, Gooding,

Common Name	Scientific Name	Known Counties of Occurrence in the TFD
		Jerome, Lincoln, Minidoka, Owyhee, Twin Falls
Scotch Broom	<i>Cytisus scoparius</i>	Gooding, Jerome, Lincoln
Small Bugloss	<i>Anchusa arvensis</i>	None
Vipers Bugloss	<i>Echium vulgare</i>	None
Yellow Hawkweed	<i>Hieracium caespitosum</i>	None

State of Idaho Noxious Weed-Statewide Containment List

Common Name	Scientific Name	Known Counties of Occurrence in the TFD
Canada Thistle	<i>Cirsium arvense</i>	Blaine, Camas, Cassia, Elmore, Gooding, Jerome, Lincoln, Minidoka, Owyhee, Twin Falls
Curlyleaf Pondweed	<i>Potamogeton crispus</i>	Blaine, Cassia, Elmore, Gooding, Jerome, Minidoka, Owyhee, Twin Falls
Dalmatian Toadflax	<i>Linaria dalmatica ssp. Dalmatica</i>	Blaine, Cassia, Elmore, Jerome, Owyhee
Diffuse Knapweed	<i>Centaurea diffusa</i>	Blaine, Camas, Cassia, Elmore, Gooding, Jerome, Lincoln, Minidoka, Owyhee, Twin Falls
Field Bindweed	<i>Convolvulus arvensis</i>	Blaine, Cassia, Elmore, Gooding, Jerome, Lincoln, Minidoka, Owyhee, Twin Falls
Flowering Rush	<i>Butomus umbellatus</i>	None
Hoary Alyssum	<i>Berteroa incana</i>	Blaine
Houndstongue	<i>Cynoglossum officinale</i>	Blaine, Cassia, Elmore, Twin Falls
Jointed Goatgrass	<i>Aegilpos cylindrical</i>	Blaine, Cassia
Leafy Spurge	<i>Euphorbia esula</i>	Blaine, Camas, Cassia, Lincoln, Minidoka, Owyhee
Milium	<i>Milium vernale</i>	None
Oxeye Daisy	<i>Leucanthemum vulgare</i>	Blaine
Perennial Pepperweed	<i>Lepidium latifolium</i>	Cassia, Elmore, Jerome, Minidoka, Owyhee, Twin Falls
Plumeless Thistle	<i>Carduus acanthoides</i>	None
Poison Hemlock	<i>Conium maculatum</i>	Blaine, Cassia, Elmore, Gooding, Jerome, Lincoln, Owyhee, Twin Falls
Puncturevine	<i>Tribulus terrestris</i>	Elmore, Gooding, Lincoln, Minidoka, Owyhee, Twin Falls
Purple Loosetrife	<i>Lythrum salicaria</i>	Elmore, Gooding, Lincoln, Minidoka, Owyhee, Twin Falls
Rush Skeletonweed	<i>Chondrilla juncea</i>	Blaine, Cassia, Elmore, Gooding, Jerome, Lincoln, Minidoka, Owyhee, Twin Falls
Saltcedar	<i>Tamarix sp.</i>	Blaine, Cassia, Elmore, Gooding, Minidoka, Owyhee, Twin Falls

Common Name	Scientific Name	Known Counties of Occurrence in the TFD
Scotch Thistle	<i>Onopordum acanthium</i>	Blaine, Cassia, Elmore, Gooding, Jerome, Lincoln, Minidoka, Owyhee, Twin Falls
Spotted Knapweed	<i>Centaurea stoebe</i>	Blaine, Camas, Cassia, Elmore, Gooding, Jerome, Lincoln, Minidoka, Owyhee, Twin Falls
Tansy Ragwort	<i>Senecio jacobaea</i>	None
White Bryony	<i>Bryonia alba</i>	Cassia, Gooding
Whitetop	<i>Cardaria draba</i>	Blaine, Cassia, Elmore, Gooding, Jerome, Lincoln, Minidoka, Owyhee, Twin Falls
Yellow Flag Iris	<i>Iris pseudocorus</i>	Blaine, Owyhee, Twin Falls
Yellow Starthistle	<i>Centaurea solstitialis</i>	Elmore, Jerome, Twin Falls
Yellow Toadflax	<i>Linaria vulgaris</i>	Blaine

Twin Falls District Invasive Plants List

Common Name	Scientific Name	Primary Habitat	Range ^a	Dominance ^b
annual wheatgrass	<i>Eremopyrum triticeum</i>	Upland	Numerous	Locally abundant
barnyard grass	<i>Echinochloa crus-galli</i>	Riparian	Rare	Uncommon
bittersweet nightshade	<i>Solanum dulcamara</i>	Riparian	Restricted	Uncommon
bulbous bluegrass	<i>Poa bulbosa</i>	Upland	Numerous	Locally abundant
bull thistle	<i>Cirsium vulgare</i>	Riparian	Numerous	Uncommon
bur buttercup	<i>Ranunculus testiculatus</i>	Upland	Widespread	Locally abundant
burdock	<i>Arctium sp.</i>	Riparian	Numerous	Uncommon
cheatgrass	<i>Bromus tectorum</i>	Upland	Widespread	Dominant
clasping pepperweed	<i>Lepidium perfoliatum</i>	Upland	Widespread	Locally abundant
cocklebur	<i>Xanthium sp.</i>	Riparian	Numerous	Uncommon
common mullein	<i>Verbascum thapsus</i>	Upland	Restricted	Common
field pennycress	<i>Thlaspi arvense</i>	Upland	Restricted	Locally abundant
flixweed	<i>Descurainia sophia</i>	Upland	Widespread	Common
halogeton	<i>Halogeton glomeratus</i>	Upland	Widespread	Common
Japanese brome	<i>Bromus japonicus</i>	Upland	Restricted	Common
Kentucky bluegrass	<i>Poa pratensis</i>	Upland	Widespread	Locally abundant
kochia	<i>Kochia scoparia</i>	Upland	Numerous	Locally abundant
littlepod false flax	<i>Camelina microcarpa</i>	Upland	Rare	Uncommon
meadow fescue	<i>Festuca pratensis</i>	Upland	Restricted	Uncommon

Common Name	Scientific Name	Primary Habitat	Range ^a	Dominance ^b
medusahead	<i>Taeniatherum caput-medusae</i>	Upland	Restricted	Locally abundant
Missouri iris	<i>Iris missouriensis</i>	Riparian	Restricted	Uncommon
poverty weed	<i>Iva axillaris</i>	Upland	Restricted	Locally abundant
prickly lettuce	<i>Lactuca serriola</i>	Upland	Widespread	Uncommon
prostrate knotweed	<i>Polygonum aviculare</i>	Upland	Widespread	Uncommon
purple mustard	<i>Chorispora tenella</i>	Upland	Numerous	Dominant
rabbitfoot grass	<i>Polypogon monspeliensis</i>	Riparian	Restricted	Locally abundant
reed	<i>Phragmites australis</i>	Riparian	Numerous	Dominant
reed canary grass	<i>Phalaris arundinacea</i>	Riparian	Widespread	Dominant
Russian olive	<i>Elaeagnus angustifolia</i>	Riparian	Widespread	Dominant
Russian thistle	<i>Salsola sp.</i>	Upland	Widespread	Locally abundant
smooth brome ^c	<i>Bromus inermis</i>	Upland	Restricted	Locally abundant
soft brome	<i>Bromus mollis</i>	Upland	Rare	Uncommon
stork's bill	<i>Erodium cicutarium</i>	Upland	Widespread	Locally abundant
tall oatgrass	<i>Arrhenatherum elatius</i>	Riparian	Rare	Uncommon
teasel	<i>Dipsacus sylvestris</i>	Riparian	Numerous	Locally abundant
tumble mustard	<i>Sisymbrium altissimum</i>	Upland	Widespread	Locally abundant

^a Range: Rare – species found only in one or two locations; Restricted – species limited to few areas; Numerous – species found in numerous areas; Wide spread – species found over large areas

^b Dominance: Dominant – readily dominates sites; Locally abundant – abundant in patches and may dominate small sites; Common – numerous but scattered; Uncommon – present in low amounts.

^c This species was seeded in the past by BLM in portions of the planning area.

Sources: <http://plants.usda.gov/> and BLM. The list shown above was compiled by BLM staff based on observations in the field.

Appendix B - Prevention Measures

BLM Activity	Prevention Measure
Project Planning	<ul style="list-style-type: none"> • Incorporate prevention measures into project layout and design, alternative evaluation, and project decisions to prevent the introduction or spread of weeds. • Determine prevention and maintenance needs, including the use of herbicides, at the onset of project planning. • Before ground-disturbing activities begin, inventory weed infestations and prioritize areas for treatment in project operating areas and along access routes. • Remove sources of weed seed and propagules to prevent the spread of existing weeds and new weed infestations. • Pre-treat high-risk sites for weed establishment and spread before implementing projects. • Post weed awareness messages and prevention practices at strategic locations such as trailheads, roads, boat launches, and public land kiosks. • Coordinate project activities with nearby herbicide applications to maximize the cost effectiveness of weed treatments.
Project Development	<ul style="list-style-type: none"> • Minimize soil disturbance to the extent practical, consistent with project objectives. • Avoid creating soil conditions that promote weed germination and establishment. • To prevent weed germination and establishment, retain native vegetation in and around project activity areas and keep soil disturbance to a minimum, consistent with project objectives. • Locate and use weed-free project staging areas. Avoid or minimize all types of travel through weed-infested areas, or restrict travel to periods when the spread of seeds or propagules is least likely. • Prevent the introduction and spread of weeds caused by moving weed-infested sand, gravel, borrow, and fill material. • Inspect material sources on site, and ensure that they are weed-free before use and transport. • Treat weed-infested sources to eradicate weed seed and plant parts, and strip and stockpile contaminated material before any use of pit material. • Survey the area where material from treated weed-infested sources is used for at least 3 years after project completion to ensure that any weeds transported to the site are promptly detected and controlled. • Prevent weed establishment by not driving through weed-infested areas. • Inspect and document weed establishment at access roads, cleaning sites, and all disturbed areas; control infestations to prevent weed spread within the project area. • Avoid acquiring water for dust abatement where access to the water is through weed-infested sites. • Identify sites where equipment can be cleaned. Clean equipment before entering public lands. • Clean all equipment before leaving the project site if operating in areas infested with weeds. • Inspect and treat weeds that establish at equipment cleaning sites. • Ensure that rental equipment is free of weed seed. • Inspect, remove, and properly dispose of weed seed and plant parts found on workers' clothing and equipment. Proper disposal entails bagging the seeds and plant parts and incinerating them.
Revegetation	<ul style="list-style-type: none"> • Include weed prevention measures, including project inspection and documentation,

BLM Activity	Prevention Measure
	<p>in operation and reclamation plans.</p> <ul style="list-style-type: none"> • Retain bonds until reclamation requirements, including weed treatments, are completed, based on inspection and documentation. • To prevent conditions favoring weed establishment, reestablish vegetation on bare ground caused by project disturbance as soon as possible using either natural recovery or artificial techniques. • Maintain stockpiled, uninfested material in a weed-free condition. • Revegetate disturbed soil (except travel ways on surfaced projects) in a manner that optimizes plant establishment for each specific project site. For each project, define what constitutes disturbed soil and objectives for plant cover revegetation. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching, as necessary. • Where practical, stockpile weed-seed-free topsoil and replace it on disturbed areas (e.g., road embankments or landings). • Inspect seed and straw mulch to be used for site rehabilitation (for wattles, straw bales, dams, etc.) and certify that they are free of weed seed and propagules. • Inspect and document all limited term ground-disturbing operations in noxious weed infested areas for at least 3 growing seasons following completion of the project. • Use native material where appropriate and feasible. Use certified weed-free or weed-seed-free hay or straw where certified materials are required and/or are reasonably available. • • Provide briefings that identify operational practices to reduce weed spread (for example, avoiding known weed infestation areas when locating fire lines). • Evaluate options, including closure, to regulate the flow of traffic on sites where desired vegetation needs to be established. Sites could include road and trail rights-of-way (ROW), and other areas of disturbed soils.

Appendix C - Herbicides Approved for Use on BLM Rangelands in Idaho

The table below lists the approved herbicides that may be used on BLM lands in Idaho at this time and their general effects to vegetation. The list includes the four new herbicides approved for use in the 2007 PEIS and included in this analysis: *diflufenzopyr plus dicamba*, *diquat*, *fluridone*, and *imazapic*. Under the action alternatives, the BLM would also be able to use *diflufenzopyr* as a stand-alone active ingredient at such time as the ingredient becomes registered for use by the EPA under the Federal Insecticide, Fungicide and Rodenticide Act. The BLM would also be able to use new active ingredients that are developed in the future if: 1) they are registered by the EPA for use on one or more land types (e.g., rangeland, aquatic, etc.) managed by the BLM; 2) the BLM determines that the benefits of use on public lands outweigh the risks to human health and the environment; and 3) they meet evaluation criteria to ensure that the decision to use the active ingredient is supported by scientific evaluation and NEPA documentation. These evaluation criteria are discussed in more detail in the PEIS (Appendix E of BLM 2007a).

Active Ingredient	Registered Trade Names	General Effects to Vegetation
<i>Bromacil</i>	Hyvar X; Hyvar XL; Bromacil 80DF	<i>Bromacil</i> is a non-selective, “broad spectrum” systemic herbicide, which is most effective against annual and perennial weeds, brush, woody plants, and vines. Poses high risk to non-target species in the immediate area of treatment.
<i>Bromacil + Diuron</i>	Bromacil/Diuron 40/40; Kroval I DF; Weed Blast 4G; Weed Blast Res. Weed Cont.; DiBro 2+2; DiBro 4+2; DiBro 4+4	See <i>bromacil</i> description of effects above for effects of this chemical. <i>Diuron</i> is a non-selective, broad-spectrum herbicide, effective as both pre- and post-emergent.
<i>Chlorsulfuron</i>	Telar DF; Telar XP; Alligare Chlorsulfuron; Nufarm Chlorsulf SPC 75 WDG Herbicide; Chlorsulfuron E-Pro 75 WDG	A selective herbicide used on perennial broadleaf weeds and grasses.
<i>Clopyralid</i>	Reclaim; Stinger; Transline ; Spur; Pyramid R&P; Clopyralid 3; Cody Herbicide; CleanSlate	A selective post-emergence herbicide used to control broadleaf weeds.
<i>Clopyralid + 2,4-D</i>	Curtail; Commando; Cutback	See <i>2,4-D</i> and <i>clopyralid</i> for effects of these chemicals.

Active Ingredient	Registered Trade Names	General Effects to Vegetation
2,4-D	Agrisolution 2,4-D LV6; Agrisolution 2,4-D Amine 4; Agrisolution 2,4-D LV4; 2,4-D Amine 4; 2,4-D LV 4; Solve 2,4-D; 2,4-D LV 6; Five Star; D-638; Alliagre 2,4-D Amine; 2,4-D LV6; 2,4-D Amine; 2,4-D Amine 4; Opti-Amine; Barrage HF; HardBall; Unison; Clean Amine; Low Vol 4 Ester Weed Killer; Low Vol 6 Ester Weed Killer; Saber; Salvo; Savage DS; Aqua-Kleen; Esteron 99C; Weedar 64; Weedone LV-4; Weedone LV-4 Solventless; Weedone LV-6; Formula 40; 2,4-D LV 6 Ester; Platoon; WEEDstroy; AM-40; Hi-Dep; 2,4-D Amine; Barrage; LV Ester; 2,4-D LV4; 2,4-D LV6; Clean Crop Amine 4; Clean Crop Low Vol 6 Ester; Salvo LV Ester; 2,4-D 4# Amine Weed Killer; Clean Crop LV-4 ES; Savage DS; Cornbelt 4 lb. Amine; Cornbelt 4#; LoVol Ester; Cornbelt 6# LoVol Ester; Amine 4; Base Camp Amine 4; Broadrange 55; Lo Vol-4; Lo Vol-6 Ester; Agrisolution 2,4-D LV6; Agrisolution 2,4-D Amine 4; Agrisolution 2,4-D LV4	2,4-D is a plant growth regulator and acts as a synthetic auxin hormone. Broad-leaved plants are more susceptible than narrow-leaved plants like grasses.
Dicamba	Dicamba DMA; Vision; Cruise Control; Banvel; Clarity; Vision; Rifle; Diablo; ; Vanquish Herbicide; Vanquish; Sterling Blue	A growth-regulating herbicide readily absorbed and translocated from either roots or foliage. This herbicide produces effects similar to those found with 2,4-D.
Dicamba + 2,4-D	Range Star; Weedmaster; Brush-Rhap; Latigo; Outlaw; Rifle-D; KambaMaster; Weedmaster; Veteran 720; Brash	SeedDicamba and 2,4-D for effects of these chemicals.
Dicamba + Diflufenzopyr	Distinct; Overdrive	Diflufenzopyr, which is used in combination with dicamba for weed control, is a postemergent that inhibits the transport of auxin in the plant resulting in an abnormal accumulation of auxin or auxin-like compounds in the growing points of susceptible plants and an imbalance in growth hormones in the plant. Works well on broadleaf weeds. Note: In accordance with the Record of Decision for the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS), the aerial application

Active Ingredient	Registered Trade Names	General Effects to Vegetation
		of this herbicide is prohibited.
<i>Diflufenzopyr</i>	This active ingredient is approved as a formulation with dicamba and is labeled as Distinct [®] and Overdrive [®] , but cannot be used as a stand-alone active ingredient by the BLM until it is registered with the EPA.	NA
<i>Diquat</i>	Alligare Diquat; NuFarm Diquat SPC 2 L Herbicide; Diquat SPC 2 L Herbicide; Diquat E-Ag 2L; Reward	<i>Diquat</i> is a post-emergence, nonselective herbicide that can be applied directly to vegetation or to ponds, lakes, or drainage ditches for the management of aquatic weed species. <i>Diquat</i> is a cell membrane disrupter whose mode of action intercepts electrons from photosynthesis and transfers the energy from photosynthesis to various free radicals that damage cell membranes.
<i>Diuron</i>	Diuron 80DF; Karmex DF; Karmex XP; Karmex IWC; Direx 4L; Direx 80DF; Diuron 4L; Diuron 80 WDG; Vegetation Man. Diuron 80 DF; Diuron-DF	<i>Diuron</i> is a non-selective, broad-spectrum herbicide, effective both pre- and post-emergence.
<i>Fluridone</i>	Avast!; Sonar AS; Sonar Precision Release; Sonar Q; Sonar SRP	<i>Fluridone</i> is a systemic, selective, aquatic herbicide that can be applied to the water surface or subsurface, or as a bottom application just above the floor of the water body. <i>Fluridone</i> is absorbed from the water by the plant shoots and taken up from the soil by the roots. In susceptible plants, <i>fluridone</i> inhibits the formation of carotene, which is essential in maintaining the integrity of chlorophyll.

Active Ingredient	Registered Trade Names	General Effects to Vegetation
<i>Glyphosate</i>	Aqua Star; Forest Star; GlyStar Gold; Gly Star; Original; Gly Star Plus; Gly Star Pro; Glyphosate 4 PLUS; Glyphosate 5.4; Glyfos Glyfos PRO; Glyfos Aquatic; ClearOut 41 Plus; Accord Concentrate; Accord SP; Accord XRT Accord XRT II; Glypro; Glypro Plus; Rodeo Showdown; Mirage; Mirage Plus; Aquamaster Roundup Original; Roundup Original II; Roundup Original II CA; Honcho; Honcho Plus; Roundup PRO; Roundup PRO Concentrate; Roundup PRO Dry; Roundup PROMAX; Aqua; Neat ; Credit Xtreme; Foresters; Razor; Razor Pro; GlyphoMate 41; AquaPro Aquatic Herbicide; Rattler; Buccaneer; Buccaneer Plus Mirage Herbicide; Mirage Plus Herbicide; Gly-4 Plus; Gly-4; Glyphosate 4; Agrisolutions Cornerstone; Agrisolutions Cornerstone Plus; Agrisolutions Rascal; Agrisolutions Rascal Plus	A nonselective systemic herbicide that can damage all groups or families of non-target plants to varying degrees.
<i>Glyphosate + 2,4-D</i>	Landmaster BW; Campaign	See <i>2,4-D</i> and <i>glyphosate</i> for effects of these chemicals.
<i>Hexazinone</i>	Velpar ULW; Velpar L; Velpar DF; Velosa; Pronone MG; Pronone 10G; Pronone 25G	A foliar-or soil-applied herbicide with soil activity. It is used for broadleaf weed, brush, and grass control in non-cropland and in forest lands.
<i>Imazapic</i>	Plateau; Panoramic 2SL	This is a selective, systemic herbicide that can be applied both pre-emergence and post-emergence for the management of selective broadleaf and grassy plant species. Its mode of action is associated with the synthesis of branch-chained amino acids.
<i>Imazapic + Glyphosate</i>	Journey	See <i>imazapic</i> and <i>glyphosate</i> for effects of these chemicals.
<i>Imazapyr</i>	Imazapyr 2SL; Imazapyr 4SL; Ecomazapyr 2SL; Arsenal Railroad Herbicide; Chopper; Arsenal Applicators Conc.; Arsenal; Arsenal PowerLine; Stalker; Habitat; Polaris; Polaris AC; Polaris AC; Polaris AQ; Polaris RR; Polaris SP; Polaris SP; Polaris Herbicide; Habitat Herbicide; SSI Maxim; Arsenal 0.5G; Ecomazapyr 2 SL;	This broad-spectrum herbicide can be applied pre or postemergence to weeds. Stable for at least 18 months. Kills plants within two to four weeks with residual activity. It is currently registered for use in non-crop areas such as industrial sites and rights-of-ways.

Active Ingredient	Registered Trade Names	General Effects to Vegetation
	Imazapyr 2 SL; Imazapyr 4 SL	
<i>Imazapyr + Diuron</i>	Mojave 70 EG; Sahara DG; Imazuron E-Pro; SSI Maxim Topsite 2.5G	See <i>imazapyr</i> and <i>diuron</i> for effects of these chemicals.
<i>Imazapyr + Metsulfuron methyl</i>	Lineage Clearstand	See <i>imazapyr</i> and <i>metsulfuron methyl</i> for effects of these chemicals.
<i>Metsulfuron methyl</i>	MSM 60; AmTide MSM 60DF Herbicide; Escort DF; Escort XP; MSM E-Pro 60 EG Herbicide; MSM E-AG 60 EG Herbicide; Patriot; PureStand; Metsulfuron Methyl DF	<i>Metsulfuron methyl</i> is a selective herbicide used pre- and post-emergence in the control of many annual and perennial weeds and woody plants.
<i>Metsulfuron methyl + Chlorsulfuron</i>	Cimarron Extra; Cimarron Plus	See <i>metsulfuron methyl</i> and <i>chlorsulfuron</i> for effects of these chemicals.
<i>Metsulfuron methyl + Dicamba + 2,4-D</i>	Cimarron MAX	See <i>metsulfuron methyl</i> , <i>dicamba</i> , and <i>2,4-D</i> for effects of these chemicals.
<i>Picloram</i>	Triumph K; Triumph 22K; Picloram K; Picloram 22K; Grazon PC; OutPost 22K; Tordon K; Tordon 22K; Trooper 22K	<i>Picloram</i> is more toxic to broadleaf and woody plants than grains or grasses.
<i>Picloram + 2,4-D</i>	GunSlinger; Picloram + D; Tordon 101 Mixture; Tordon 101 R Forestry; Tordon RTU; Grazon P+D; HiredHand P+D; Pathway; Trooper 101; Trooper P + D	See <i>Picloram</i> , and <i>2,4-D</i> for effects of these chemicals.
<i>Picloram + 2,4-D + Dicamba</i>	Trooper Extra	See <i>Picloram</i> , <i>2,4-D</i> and <i>dicamba</i> for effects of these chemicals.
<i>Tebuthiuron</i>	Alligare Tebuthiuron 80 WG; Alligare Tebuthiuron 20 P; Spike 20P; Spike 80DF; SpraKil S-5 Granules	A soil-applied herbicide used for control of woody plants and vegetation. <i>Tebuthiuron</i> has a two to four year residual on dry sites depending on application rates.
<i>Tebuthiuron + Diuron</i>	SpraKil SK-13 Granular; SpraKil SK-26 Granular	See <i>tebuthiuron</i> and <i>diuron</i> for effects of these chemicals.
<i>Triclopyr</i>	Triclopyr 4EC; Triclopyr 3; Triclopyr 4; Element 3A; Element 4; Forestry Garlon XRT; Garlon 3A; Garlon 4;	A growth-regulating herbicide for control of woody and broadleaf perennial weeds in non-cropland, forest lands, and lawns.

Active Ingredient	Registered Trade Names	General Effects to Vegetation
	Garlon 4 Ultra; Remedy; Remedy Ultra: Pathfinder II; Trycera; Relegate; Relegate RTU; Tahoe 3A; Tahoe 4E; Tahoe 4E Herbicide; Renovate 3; Renovate OTF; Ecotriclopyr 3 SL; Triclopyr 3 SL	
<i>Triclopyr + 2,4-D</i>	Everett; Crossbow; Aquasweep; Candor	See <i>triclopyr</i> and <i>2,4-D</i> for effects of these chemicals.
<i>Triclopyr + Clopyralid</i>	Prescott Herbicide; Redeem R&P; Brazen	See <i>triclopyr</i> and <i>clopyralid</i> for effects of these chemicals.

Appendix D - Herbicide Application Criteria

The following herbicide application criteria along with BLM herbicide mitigation measures and design features would be utilized to formulate site specific vegetation treatment plans and Pesticide Use Proposals across the TFD. The 2007 PEIS decisions concerning specific use of certain chemicals approved for BLM use were carried forward in the development of local use criteria.

To address concerns regarding potential for off-site soil movement, herbicides used for pre-emergent control of noxious weeds or invasive plants would not be applied to bare soil. These herbicides would not be applied following wildland or prescribed fire until cover of live plants and litter is adequate to prevent off-site soil movement.

The selection of an appropriate herbicide will rest on several factors. Some of these factors will include proximity to water, proximity to croplands, soil permeability, target species, associated plant species, time of application, and prior herbicide use on a target population.

Active Ingredient	Aerial Application	Ground Application	Spot Treatment	Buffers	Target Vegetation	General Effects to Vegetation
<i>Bromacil</i>	No. To address concerns regarding herbicide drift, the BLM will not utilize aerial application of <i>bromacil</i> .	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Annual and perennial grasses and broadleaf weeds.	<i>Bromacil</i> is a non-selective, "broad spectrum" systemic herbicide, which is most effective against annual and perennial weeds, brush, woody plants, and vines. Areas where registered use is not appropriate include rangeland, forestland, and riparian and aquatic habitats. Areas where registered use is appropriate include ROW, recreation and cultural resources, and oil, gas, and minerals.
<i>Chlorsulfuron</i>	No. To address concerns regarding herbicide drift, the BLM will not utilize aerial application of <i>chlorsulfuron</i> .	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Dyers woad, thistles, annual and perennial mustards, Russian knapweed, whitetop.	A selective herbicide used on perennial broadleaf weeds and grasses. Areas where registered use is not appropriate include forestland and riparian and aquatic habitats. Areas where registered use is appropriate include rangeland habitats, ROW, recreation and cultural resources, and oil, gas and minerals.
<i>Clopyralid</i>	Yes. Pesticide labels allow for aerial	Yes	Yes	Yes. See BLM Handbook	Knapweeds, thistles.	A selective post-emergence herbicide used to control broadleaf weeds. Areas where registered use is not appropriate

Active Ingredient	Aerial Application	Ground Application	Spot Treatment	Buffers	Target Vegetation	General Effects to Vegetation
	application.			H-9011-1 Chapter 2, II. Application Guidance		include riparian and aquatic habitats. Areas where registered use is appropriate include rangeland and forestland habitats, ROW, recreation and cultural resources, and oil, gas, and minerals.
<i>2,4-D</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Dyers woad, annual and perennial mustards, knapweeds, Russian thistle.	<i>2,4-D</i> is a plant growth regulator and acts as a synthetic auxin hormone. Broad-leaved plants are more susceptible than narrow-leaved plants like grasses. Areas where registered use is appropriate include rangeland, forestland, riparian and aquatic habitats, ROW, recreation and cultural resources, and oil, gas, and minerals.
<i>Dicamba</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Dyers woad, knapweeds, thistles, whitetop, toadflax.	A growth-regulating herbicide readily absorbed and translocated from either roots or foliage. This herbicide produces effects similar to those found with <i>2,4-D</i> . Areas where registered use is not appropriate include forestland and riparian and aquatic habitats. Areas where registered use is appropriate include rangeland habitats, ROW, recreation and cultural resources, and oil, gas and minerals.
<i>Diflufenzopyr*</i>	NA	NA	NA	NA	NA	NA

Active Ingredient	Aerial Application	Ground Application	Spot Treatment	Buffers	Target Vegetation	General Effects to Vegetation
<i>Diflufenzopyr + Dicamba*</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Knapweeds, thistles, Russian thistle.	<i>Diflufenzopyr</i> , which is used in combination with <i>dicamba</i> for weed control, is a postemergent that inhibits the transport of auxin in the plant resulting in an abnormal accumulation of auxin or auxin-like compounds in the growing points of susceptible plants and an imbalance in growth hormones in the plant. Works well on broadleaf weeds. Areas where registered use is not appropriate include forestland and riparian and aquatic habitats. Areas where registered use is appropriate include rangeland, ROW, recreation and cultural resources, oil, gas and minerals.
<i>Diquat</i>	No. <i>Diquat</i> will not be aerially applied in riparian areas and wetlands.	No. Aquatic herbicide.	Yes	Yes. Buffers should be applied to avoid drift onto non-target terrestrial vegetation. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Watermilfoils.	<i>Diquat</i> is a post-emergence, nonselective herbicide that can be applied directly to vegetation or to ponds, lakes, or drainage ditches for the management of aquatic weed species. <i>Diquat</i> is a cell membrane disrupter whose mode of action intercepts electrons from photosynthesis and transfers the energy from photosynthesis to various free radicals that damage cell membranes. Areas where registered use is not appropriate include rangeland and forestland habitats. Areas where registered use is appropriate include riparian and aquatic habitats. Areas where approved registration exists but BLM does not propose to use include ROW, recreation and cultural resources, oil, gas, and minerals.
<i>Diuron</i>	No. To address concerns regarding herbicide drift, the BLM will not utilize aerial application of <i>diuron</i> .	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Annual grasses, broadleaf weeds, Russian thistle.	<i>Diuron</i> is a non-selective, broad-spectrum herbicide, effective both pre- and post- emergence. Areas where registered use is not appropriate include rangeland, forestland, and riparian and aquatic habitats. Areas where registered use is appropriate include ROW, recreation and cultural resources, and oil, gas and minerals.

Active Ingredient	Aerial Application	Ground Application	Spot Treatment	Buffers	Target Vegetation	General Effects to Vegetation
<i>Fluridone</i>	Yes	No. Aquatic herbicide.	Yes	Yes. Buffers should be applied to avoid drift onto non-target terrestrial vegetation. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Watermilfoils.	<i>Fluridone</i> is a systemic, selective, aquatic herbicide that can be applied to the water surface or subsurface, or as a bottom application just above the floor of the water body. <i>Fluridone</i> is absorbed from the water by the plant shoots and taken up from the soil by the roots. In susceptible plants, <i>fluridone</i> inhibits the formation of carotene, which is essential in maintaining the integrity of chlorophyll. Areas where registered use is not appropriate include rangeland and forestland habitats, ROW, recreation and cultural resources, oil, gas, and minerals. Areas where registered use is appropriate include riparian and aquatic habitats.
<i>Glyphosate</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Annual grasses, mustards.	A nonselective systemic herbicide that can damage all groups or families of non-target plants to varying degrees. Areas where registered use is appropriate include rangeland, forestland, riparian and aquatic habitats, ROW, recreation and cultural resources, oil, gas, and minerals.
<i>Hexazinone</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Saltcedar.	A foliar-or soil-applied herbicide with soil activity. It is used for broadleaf weed, brush, and grass control in non-cropland and in forest lands. Areas where registered use is not appropriate include riparian and aquatic habitats. Areas where registered use is appropriate include rangeland and forestland habitats, ROW, recreation and cultural resources, oil, gas, and minerals.
<i>Imazapic</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II.	Downy brome, medusahead wildrye, leafy spurge, mustards.	This is a selective, systemic herbicide that can be applied both pre-emergence and post-emergence for the management of selective broadleaf and grassy plant species. Its mode of action is associated with the synthesis of branch-chained amino acids. Areas where registered use is not appropriate

Active Ingredient	Aerial Application	Ground Application	Spot Treatment	Buffers	Target Vegetation	General Effects to Vegetation
				Application Guidance		include riparian and aquatic habitats. Areas where registered use is appropriate include rangeland and forestland habitats, ROW, recreation and cultural resources, oil, gas, and minerals.
<i>Imazapyr</i>	Yes. Pesticide labels for this chemical allow aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Saltcedar, annual and perennial broadleaf weeds.	This broad-spectrum herbicide can be applied pre or postemergence to weeds. Stable for at least 18 months. Kills plants within two to four weeks with residual activity. Areas where registered use is appropriate include rangeland, forestland, riparian and aquatic habitats, ROW, recreation and cultural resources, oil, gas, and minerals.
<i>Metsulfuron methyl</i>	No. To address concerns regarding herbicide drift, the BLM will not utilize aerial application of <i>metsulfuron</i> .	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Thistles, annual and perennial broadleaf weeds.	<i>Metsulfuron methyl</i> is a selective herbicide used pre- and post-emergence in the control of many annual and perennial weeds and woody plants. Areas where registered use is not appropriate include riparian and aquatic habitats. Areas where registered use is appropriate include rangeland, forestland, ROW, recreation and cultural resources, oil, gas, and minerals.
<i>Picloram</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Certain annual and perennial broadleaf weeds, leafy spurge, rush skeletonweed, knapweeds, thistles.	<i>Picloram</i> is a selective herbicide that is more toxic to broadleaf and woody plants than grains or grasses. Areas where registered use is not appropriate include riparian and aquatic habitats. Areas where registered use is appropriate include rangeland, forestland, ROW, recreation and cultural resources, oil, gas, and minerals.
<i>Tebuthiuron</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Shrubs (thinning), Russian olive.	A soil-applied herbicide used for control of woody plants and vegetation. <i>Tebuthiuron</i> has a two to four year residual on dry sites depending on application rates. Areas where registered use is not appropriate include forestland and riparian and aquatic habitats. Areas where registered use is appropriate include rangeland, ROW, recreation and cultural resources, oil, gas, and minerals.

Active Ingredient	Aerial Application	Ground Application	Spot Treatment	Buffers	Target Vegetation	General Effects to Vegetation
<i>Triclopyr</i>	Yes. Pesticide labels allow for aerial application.	Yes	Yes	Yes. See BLM Handbook H-9011-1 Chapter 2, II. Application Guidance	Broadleaf weeds, thistles, saltcedar.	A growth-regulating herbicide for control of woody and broadleaf perennial weeds in non-cropland, forest lands, and lawns. Areas where registered use is appropriate include rangeland, forestland, riparian and aquatic habitats, ROW, recreation and cultural resources, oil, gas, and minerals.

* This active ingredient is approved as a formulation with *dicamba* and is labeled as Distinct[®] and Overdrive[®], but cannot be used as a stand-alone active ingredient by the BLM until it is registered with the EPA.

Environmental Consideration. The following are recommended minimum widths (measured horizontally) for protective buffer strips for all pesticides applied adjacent to waters which are valuable for domestic use, are perennial marshy areas, are important for angling or other recreation, and/or are used by significant numbers of fish for spawning, rearing, or migrations routes (Class I streams).

Aerial Spraying-100 feet
 Vehicle Spraying-25 feet
 Hand application-10 feet

If minimums from H-9011-1 Chemical Pest Handbook are above pesticide labeling, specific buffer strip widths indicated on pesticide labels or by State regulations must be followed. Pesticide program planners should refer to labels and State regulations for specific requirements.

Appendix E - Standard Operating Procedures for Applying Herbicides

Resource Element	Standard Operating Procedure
Guidance Documents	BLM Handbook H-9011-1 (<i>Chemical Pest Control</i>); and manuals 1112 (<i>Safety</i>), 9011 (<i>Chemical Pest Control</i>), 9012 (<i>Expenditure of Rangeland Insect Pest Control Funds</i>), 9015 (<i>Integrated Weed Management</i>), and 9220 (<i>Integrated Pest Management</i>).
General	<ul style="list-style-type: none"> • Prepare operational and spill contingency plan in advance of treatment. • Conduct a pretreatment survey before applying herbicides. • Select herbicide that is least damaging to the environment while providing the desired results. • Select herbicide products carefully to minimize additional impacts from degradates, adjuvants, inert ingredients, and tank mixtures. • Apply the least amount of herbicide needed to achieve the desired result. • Follow herbicide product label for use and storage. • Have licensed applicators apply herbicides. • Use only USEPA-approved herbicides and follow product label directions and “advisory” statements. Review, understand, and conform to the “Environmental Hazards” section on the herbicide product label. This section warns of known pesticide risks to the environment and provides practical ways to avoid harm to organisms or to the environment. • Consider surrounding land use before assigning aerial spraying as a treatment method and avoid aerial spraying near agricultural or densely populated areas. • Minimize the size of application area, when feasible. • Comply with herbicide-free buffer zones to ensure that drift will not affect crops or nearby residents/landowners. • Post treated areas and specify reentry or rest times, if appropriate. • Notify adjacent landowners prior to treatment. • Keep a copy of Material Safety Data Sheets (MSDSs) at work sites. MSDSs are available for review at http://www.cdms.net/. • Keep records of each application, including the active ingredient, formulation, application rate, date, time, and location. • Avoid accidental direct spray and spill conditions to minimize risks to resources. • Consider surrounding land uses before aerial spraying. • Avoid aerial spraying during periods of adverse weather conditions (snow or rain imminent, fog, or air turbulence). • Make helicopter applications at a target airspeed of 40 to 50 miles per hour (mph), and at about 30 to 45 feet above ground. • Take precautions to minimize drift by not applying herbicides when winds exceed >10 mph (>6 mph for aerial applications), or a serious rainfall event is imminent. • Use drift control agents and low volatile formulations. • Conduct pre-treatment surveys for sensitive habitat and special status species within or adjacent to proposed treatment areas. • Consider site characteristics, environmental conditions, and application equipment in order to minimize damage to non-target vegetation. • Use drift reduction agents, as appropriate, to reduce the drift hazard to non-target species. • Turn off applied treatments at the completion of spray runs and during turns to start another spray run. • Refer to the herbicide product label when planning re-vegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. • Clean OHVs to remove seeds.

Resource Element	Standard Operating Procedure
<p>Air Quality</p> <p>See Manual 7000 (<i>Soil, Water, and Air Management</i>)</p>	<ul style="list-style-type: none"> • Consider the effects of wind, humidity, temperature inversions, and heavy rainfall on herbicide effectiveness and risks. • Apply herbicides in favorable weather conditions to minimize drift. For example, do not treat when winds exceed 10 mph (>6 mph for aerial applications) or rainfall is imminent. • Use drift reduction agents, as appropriate, to reduce the drift hazard. • Select proper application equipment (e.g., spray equipment that produces 200- to 800-micron diameter droplets [spray droplets of 100 microns and less are most prone to drift]). • Select proper application methods (e.g., set maximum spray heights, use appropriate buffer distances between spray sites and non-target resources).
<p>Soil</p> <p>See Manual 7000 (<i>Soil, Water, and Air Management</i>)</p>	<ul style="list-style-type: none"> • Minimize treatments in areas where herbicide runoff is likely, such as steep slopes when heavy rainfall is expected. • Minimize use of herbicides that have high soil mobility, particularly in areas where soil properties increase the potential for mobility. • Do not apply granular herbicides on slopes of more than 15% where there is the possibility of runoff carrying the granules into non-target areas.
<p>Water Resources</p> <p>See Manual 7000 (<i>Soil, Water, and Air Management</i>)</p>	<ul style="list-style-type: none"> • Consider climate, soil type, slope, and vegetation type when developing herbicide treatment programs. • Select herbicide products to minimize impacts to water. This is especially important for application scenarios that involve risk from active ingredients in a particular herbicide, as predicted by risk assessments. • Use local historical weather data to choose the month of treatment. Considering the phenology of the target species, schedule treatments based on the condition of the water body and existing water quality conditions. • Plan to treat between weather fronts (calms) and at appropriate time of day to avoid high winds that increase water movements, and to avoid potential stormwater runoff and water turbidity. • Review hydrogeologic maps of proposed treatment areas. Note depths to groundwater and areas of shallow groundwater and areas of surface water and groundwater interaction. Minimize treating areas with high risk for groundwater contamination. • Conduct mixing and loading operations in an area where an accidental spill would not contaminate an aquatic body. • Do not rinse spray tanks in or near water bodies. Do not broadcast pellets where there is danger of contaminating water supplies. • Maintain buffers between treatment areas and water bodies. Buffer widths should be developed based on herbicide- and site-specific criteria to minimize impacts to water bodies. • Minimize the potential effects to surface water quality and quantity by stabilizing terrestrial areas as quickly as possible following treatment.
<p>Wetlands and Riparian Areas</p>	<ul style="list-style-type: none"> • Use a selective herbicide and a wick or backpack sprayer. • Use appropriate herbicide-free buffer zones for herbicides not labeled for aquatic use based on risk assessment guidance, with minimum widths of 100 feet for aerial, 25 feet for vehicle, and 10 feet for hand spray applications.
<p>Vegetation</p> <p>See Handbook H-4410-1 (<i>National Range Handbook</i>), and manuals 5000 (<i>Forest Management</i>) and 9015 (<i>Integrated Weed Management</i>)</p>	<ul style="list-style-type: none"> • Refer to the herbicide label when planning re-vegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. • Use native or sterile species for re-vegetation and restoration projects to compete with invasive species until desired vegetation establishes. • Use weed-free feed for horses and pack animals. Use weed-free straw and mulch for re-vegetation and other activities. • Identify and implement any temporary domestic livestock grazing and/or supplemental feeding restrictions needed to enhance desirable vegetation recovery following treatment. Consider adjustments in the existing grazing permit, to maintain desirable

Resource Element	Standard Operating Procedure
	vegetation on the treatment site.
Pollinators	<ul style="list-style-type: none"> • Complete vegetation treatments seasonally before pollinator foraging plants bloom. • Time vegetation treatments to take place when foraging pollinators are least active both seasonally and daily. • Design vegetation treatment projects so that nectar and pollen sources for important pollinators and resources are treated in patches rather than in one single treatment. • Minimize herbicide application rates. Use typical rather than maximum rates where there are important pollinator resources. • Maintain herbicide free buffer zones around patches of important pollinator nectar and pollen sources. • Maintain herbicide free buffer zones around patches of important pollinator nesting habitat and hibernacula. • Make special note of pollinators that have single host plant species, and minimize herbicide spraying on those plants (if invasive species) and in their habitats.
Fish and Other Aquatic Organisms See manuals 6500 (<i>Wildlife and Fisheries Management</i>) and 6780 (<i>Habitat Management Plans</i>)	<ul style="list-style-type: none"> • Use appropriate buffer zones based on label and risk assessment guidance. • Minimize treatments near fish-bearing water bodies during periods when fish are in life stages most sensitive to the herbicide(s) used, and use spot rather than broadcast or aerial treatments. • Use appropriate application equipment/method near water bodies if the potential for off-site drift exists. • For treatment of aquatic vegetation, 1) treat only that portion of the aquatic system necessary to achieve acceptable vegetation management, 2) use the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms, and 3) follow water use restrictions presented on the herbicide label.
Threatened, Endangered, and Sensitive Species See Manual 6840 (<i>Special Status Species</i>)	<ul style="list-style-type: none"> • Survey for special status species before treating an area. Consider effects to special status species when designing herbicide treatment programs. • Use a selective herbicide and a wick or backpack sprayer to minimize risks to special status plants. • Avoid treating vegetation during time-sensitive periods (e.g., nesting and migration, sensitive life stages) for special status species in area to be treated.
Livestock See Handbook H-4120-1 (<i>Grazing Management</i>)	<ul style="list-style-type: none"> • Whenever possible and whenever needed, schedule treatments when livestock are not present in the treatment area. Design treatments to take advantage of normal livestock grazing rest periods, when possible. • As directed by the herbicide product label, remove livestock from treatment sites prior to herbicide application, where applicable. • Use herbicides of low toxicity to livestock, where feasible. • Take into account the different types of application equipment and methods, where possible, to reduce the probability of contamination of non-target food and water sources. • Avoid use of diquat in riparian pasture while pasture is being used by livestock. • Notify permittees of the herbicide treatment project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. • Notify permittees of livestock grazing, feeding, or slaughter restrictions, if necessary. • Provide alternative forage sites for livestock, if possible.
Wild Horses and Burros	<ul style="list-style-type: none"> • Minimize using herbicides in areas grazed by wild horses and burros. • Use herbicides of low toxicity to wild horses and burros, where feasible. • Remove wild horses and burros from identified treatment areas prior to herbicide application, in accordance with herbicide product label directions for livestock. • Take into account the different types of application equipment and methods, where possible, to reduce the probability of contaminating non-target food and water sources.

Resource Element	Standard Operating Procedure
<p>Cultural Resources and Paleontological Resources See handbooks H-8120-1 (<i>Guidelines for Conducting Tribal Consultation</i>) and H-8270-1 (<i>General Procedural Guidance for Paleontological Resource Management</i>), and manuals 8100 (<i>The Foundations for Managing Cultural Resources</i>), 8120 (<i>Tribal Consultation Under Cultural Resource Authorities</i>), and 8270 (<i>Paleontological Resource Management</i>) See also: <i>Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act</i></p>	<ul style="list-style-type: none"> • Follow standard procedures for compliance with Section 106 of the National Historic Preservation Act as implemented through the Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act and state protocols or 36 Code of Federal Regulations Part 800, including necessary consultations with State Historic Preservation Officers and interested tribes. • Follow BLM Handbook H-8270-1 (<i>General Procedural Guidance for Paleontological Resource Management</i>) to determine known Condition I and Condition 2 paleontological areas, or collect information through inventory to establish Condition 1 and Condition 2 areas, determine resource types at risk from the proposed treatment, and develop appropriate measures to minimize or mitigate adverse impacts. • Consult with tribes to locate any areas of vegetation that are of significance to the tribe and that might be affected by herbicide treatments. • Work with tribes to minimize impacts to these resources. • Follow guidance under Human Health and Safety in the PEIS in areas that may be visited by Native peoples after treatments.
<p>Visual Resources See handbooks H-8410-1 (<i>Visual Resource Inventory</i>) and H-8431-1 (<i>Visual Resource Contrast Rating</i>), and manual 8400 (<i>Visual Resource Management</i>)</p>	<ul style="list-style-type: none"> • Minimize the use of broadcast foliar applications in sensitive watersheds to avoid creating large areas of browned vegetation. • Consider the surrounding land use before assigning aerial spraying as an application method. • Minimize off-site drift and mobility of herbicides (e.g., do not treat when winds exceed 10 mph; minimize treatment in areas where herbicide runoff is likely; establish appropriate buffer widths between treatment areas and residences) to contain visual changes to the intended treatment area. • If the area is a Class I or II visual resource, ensure that the change to the characteristic landscape is low and does not attract attention (Class I), or if seen, does not attract the attention of the casual viewer (Class II). • Lessen visual impacts by: 1) designing projects to blend in with topographic forms; 2) leaving some low-growing trees or planting some low-growing tree seedlings adjacent to the treatment area to screen short-term effects; and 3) re-vegetating the site following treatment. • When restoring treated areas, design activities to repeat the form, line, color, and texture of the natural landscape character conditions to meet established Visual Resource Management (VRM) objectives.

Resource Element	Standard Operating Procedure
<p>Wilderness and Other Special Areas</p> <p>See handbooks H-8550-1 (<i>Management of Wilderness Study Areas (WSAs)</i>), and H-8560-1 (<i>Management of Designated Wilderness Study Areas</i>), and Manual 8351 (<i>Wild and Scenic Rivers</i>)</p>	<ul style="list-style-type: none"> • Encourage backcountry pack and saddle stock users to feed their livestock only weed-free feed for several days before entering a wilderness area. • Encourage stock users to tie and/or hold stock in such a way as to minimize soil disturbance and loss of native vegetation. • Re-vegetate disturbed sites with native species if there is no reasonable expectation of natural regeneration. • Provide educational materials at trailheads and other wilderness entry points to educate the public on the need to prevent the spread of weeds. • Use the “minimum tool” to treat noxious and invasive vegetation, relying primarily on the use of ground-based tools, including backpack pumps, hand sprayers, and pumps mounted on pack and saddle stock. • Use chemicals only when they are the minimum method necessary to control weeds that are spreading within the wilderness or threaten lands outside the wilderness. • Give preference to herbicides that have the least impact on non-target species and the wilderness environment. • Implement herbicide treatments during periods of low human use, where feasible. • Address wilderness and special areas in management plans. • Maintain adequate buffers for Wild and Scenic Rivers (¼ mile on either side of river, ½ mile in Alaska).
<p>Recreation</p> <p>See Handbook H-1601-1 (<i>Land Use Planning Handbook, Appendix C</i>)</p>	<ul style="list-style-type: none"> • Schedule treatments to avoid peak recreational use times, while taking into account the optimum management period for the targeted species. • Notify the public of treatment methods, hazards, times, and nearby alternative recreation areas. • Adhere to entry restrictions identified on the herbicide product label for public and worker access. • Post signs noting exclusion areas and the duration of exclusion, if necessary. • Use herbicides during periods of low human use, where feasible.
<p>Social and Economic Values</p>	<ul style="list-style-type: none"> • Consider surrounding land use before selecting aerial spraying as a method, and avoid aerial spraying near agricultural or densely-populated areas. • Post treated areas and specify reentry or rest times, if appropriate. • Notify grazing permittees of livestock feeding restrictions in treated areas, if necessary, as per herbicide product label instructions. • Notify the public of the project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. • Control public access until potential treatment hazards no longer exist, per herbicide product label instructions. • Observe restricted entry intervals specified by the herbicide product label. • Notify local emergency personnel of proposed treatments. • Use spot applications or low-boom broadcast applications where possible to limit the probability of contaminating non-target food and water sources, especially vegetation over areas larger than the treatment area. • Consult with Native American tribes and Alaska Native groups to locate any areas of vegetation that are of significance to the tribes and Native groups and that might be affected by herbicide treatments. • To the degree possible within the law, hire local contractors and workers to assist with herbicide application projects and purchase materials and supplies, including chemicals, for herbicide treatment projects through local suppliers. • To minimize fears based on lack of information, provide public educational information on the need for vegetation treatments and the use of herbicides in an integrated pest management program for projects proposing local use of herbicides.

Resource Element	Standard Operating Procedure
Rights-of-way	<ul style="list-style-type: none"> • Coordinate vegetation management activities where joint or multiple use of a ROW exists. • Notify other public land users within or adjacent to the ROW proposed for treatment. • Use only herbicides that are approved for use in ROW areas.
Human Health and Safety	<ul style="list-style-type: none"> • Establish a buffer between treatment areas and human residences based on guidance given in the HHRA, with a minimum buffer of ¼ mile for aerial applications and 100 feet for ground applications, unless a written waiver is granted. • Use protective equipment as directed by the herbicide product label. • Post treated areas with appropriate signs at common public access areas. • Observe restricted entry intervals specified by the herbicide product label. • Provide public notification in newspapers or other media where the potential exists for public exposure. • Have a copy of MSDSs at work site. • Notify local emergency personnel of proposed treatments. • Contain and clean up spills and request help as needed. • Secure containers during transport. • Follow label directions for use and storage. • Dispose of unwanted herbicides promptly and correctly.

Appendix F - Plant Species Seed List and Guidance for Selecting Plant Materials

Plant species for use in vegetation treatment seed mixes within the Twin Falls District are identified for four geographical areas: 1) low elevation areas (8 – 10 inch ppt.), 2) Big Desert (10 – 12 inch ppt.), 3) mid elevation (>12 inch ppt.), and 4) juniper sites (>11 inch ppt.). Refer to table below for plant species and varieties.

The geographical areas were identified because of their high fire frequencies; they are the locations where most vegetation treatment activities occur in the Twin Falls District. Plant species and varieties are chosen for a seed mix based on their adaptability to the geographical areas. Species not currently listed on Table 1 can be used in vegetation treatment seed mixes with field office management concurrence. Rationale for seed mixes (i.e. plant species and seed rates) will be provided in the vegetation treatment plans.

The following list identifies the plant species that will generally be used in the development of seed mixes in each of the four designated areas.

Low Elevation

Grasses: Snake River Wheatgrass, Bluebunch Wheatgrass, Tall Wheatgrass, Siberian Wheatgrass, Bluegrasses, Indian Ricegrass, Bottlebrush Squirreltail, Basin Wildrye, Russian Wildrye, Crested Wheatgrass

Forbs: Lewis Flax, Globemallow, Sainfoin

Shrubs: Big Sagebrush, Four-winged Saltbush

Big Desert (i.e. Wildhorse/Minidoka)

Grasses: Snake River Wheatgrass, Bluebunch Wheatgrass, Bluegrasses, Basin Wildrye, Bottlebrush Squirreltail, Indian Ricegrass, Siberian Wheatgrass, Tall Wheatgrass, Crested Wheatgrass

Forbs: Sainfoin, Dark Blue Penstemon, Globemallow

Shrubs: Antelope Bitterbrush, Big Sagebrush

Mid Elevation

Grasses: Bluebunch Wheatgrass, Bluegrasses, Basin Wildrye, Bottlebrush Squirreltail, Siberian Wheatgrass, Tall Wheatgrass

Forbs: Western Yarrow, Palmer Penstemon, Sainfoin, Utah Sweetvetch

Shrubs: Antelope Bitterbrush, Black Sagebrush, Low Sagebrush

Juniper Sites

Grasses: Snake River Wheatgrass, Bluebunch Wheatgrass, Bluegrasses, Basin Wildrye, Russian Wildrye, Tall Wheatgrass, Siberian Wheatgrass, Indian Ricegrass, Bottlebrush Squirreltail, Crested Wheatgrass

Shrubs: Antelope Bitterbrush, Big Sagebrush, Black Sagebrush, Low Sagebrush

Due to the variability in environmental conditions, wildfire intensity, and seeding methods (i.e. drill, aerial), seed rates are not specifically identified, but a range of drill rates for individual plant species is shown in Table 1. Aerial grass seeding rates will generally be 25-50% higher than the drill seed rates. For a typical juniper burn where chaining is identified in the vegetation treatment plan, the amount of grass seed applied should approximately double the drill rates.

The plant species identified for use in vegetation treatment seed mixtures are chosen on their ability to adapt to the geographic areas in the Great Basin and proven success in past seeding efforts in the Twin Falls District. Non-native species are included for their known ability to out-compete weedy invasive plants. The need to plant more diverse seed mixtures that include other native species than those listed above, particularly in areas having specific resource needs or higher values (i.e. important sage grouse nesting/brood rearing habitats) is preferred.

As more desirable species and new varieties become available and/or are more economical, the plant species identified in Table 1 will be revisited and adjusted accordingly. Opportunities to experiment with new varieties should be implemented at a smaller scale and on a limited basis to determine whether they might be suitable for more widespread use throughout the District. Monitoring results will be used to identify or modify seed selection in future efforts.

Plant Species and Varieties for Use in Vegetation Treatments

Common Name	Species/Variety	Seeds/Lb	Typical Seeding Rate-Lbs/Acre/PLS	Comments
Grasses				
Bluebunch Wheatgrass	Whitmar, Goldar, P7, Anatone	140,000	2-6	When mixed with non-natives and native species are emphasized, limit the non-native species to <2 lbs./acre.
Snake River Wheatgrass	Secar, Discovery	170,000	1-3	Generally mixed with other natives or non-natives such as Siberian wheatgrass.
Siberian Wheatgrass	P-27, Vavilov, Vavilov II	220,000	2-5	Seeding rates for sole use or with other non-natives, or when natives are not emphasized.
Crested Wheatgrass	Nordan, Hycrest, Hycrest II Fairway, Roadcrest	200,000	2-6	Seeding rates for sole use or with other non-natives, or when natives are not emphasized.
Tall Wheatgrass	Alkar	80,000	0.25-1.0	Use at lower rate when mixed with Basin Wildrye. Use higher when mixed alone.
Basin Wildrye	Trailhead, Magnar, Continental	150,000	0.25-1.0	N/A
Russian Wildrye	Bozoisky, Bozoisky II	175,000	0.25-1.0	N/A
Big Bluegrass	Sherman	917,000	0.2-0.3	Small seed
Canby Bluegrass	Canbar	930,000	0.2-0.3	Small seed

Common Name	Species/Variety	Seeds/Lb	Typical Seeding Rate-Lbs/Acre/PLS	Comments
Sandberg Bluegrass	Reliable, Mountain Home	950,000	0.2-0.3	Small Seed
Bottlebrush Squirreltail	Fish Creek, Rattlesnake, Toe Jam Creek	220,000	1.0-3.0	N/A
Big Squirreltail	Sand Hollow	220,000	1.0-3.0	N/A
Indian Ricegrass	Rimrock, Nezpar	205,000	1.0-3.0	N/A
Forbs				
Sainfoin	Eski	28,000	2.0	Large seed
Lewis Flax	Maple Grove	420,000	0.1-0.2	N/A
Blue Flax	Appar	295,000	0.1-0.2	N/A
Palmer Penstemon	Cedar	600,000	0.1	N/A
Dark Blue Penstemon	N/A	600,000	0.1	N/A
Western Yarrow	Eagle	2,700,000	0.1	Broadcast seed
Globemallow	Scarlett, Munroe, Gooseberry Leaf	500,000	0.1	N/A
Utah Sweetvetch	Timp	90,000	0.5 – 1.0	N/A
Shrubs				
Antelope Bitterbrush	N/A	15,000	0.5-1.0	Should drill seed in separate box
Big Sagebrush	Wyoming, Basin, Mountain	2,500,000	0.5-1.0	Bulk rate
Four-Wing Saltbush	N/A	55,000	0.5-1.0	
Black Sagebrush	N/A	900,000	0.5-1.0	Bulk rate
Low Sagebrush	N/A	980,000	0.5-1.0	Bulk rate

Appendix G - Seasonal Wildlife Restrictions and Procedures for Processing Requests for Exceptions on Public Lands in Idaho

From Idaho Information Bulletin IDIB2010-039 (July 2010 Version)

1.0. Introduction: In general, BLM-generated projects (e.g., vegetation treatments, range improvements) and other actions for which BLM authorization is required (e.g., rights-of-way, lease authorizations, organized recreational events), should be analyzed in accordance with the National Environmental Policy Act (NEPA) and sited or designed in a manner that avoids impacts to wildlife species or habitats of concern to the extent possible, based on current science. Seasonal wildlife restrictions are intended to protect wildlife resources from disturbance during important seasons of the year, such as breeding, nesting or wintering. However, such restrictions may or may not have been previously developed for existing Resource Management Plans (RMPs) or Management Framework Plans (MFPs) in Idaho or they may lack consistency between BLM districts or field offices, or existing measures may not reflect current science. The purpose of this document is to establish a consistent suite of recommended seasonal restrictions for a selected group of wildlife species of concern to Idaho BLM and to provide a framework for considering appropriate temporary exceptions to those restrictions. Where existing RMP or MFP restrictions are similar to or exceed those described in this document, they can continue to be used. If less restrictive, they should be replaced with those specified in this document unless there is scientific, reasonable justification to the contrary. Where large projects (e.g., transmission, wind etc.) cross multiple field offices or districts, this document can also provide helpful consistency for project planners. This document may be revised in the future, based on new science, policy or other factors.

2.0. Wildlife seasonal restrictions and considerations for granting exceptions:

2.1. Big game winter ranges and bighorn sheep habitat: Seasonal restrictions for potentially disruptive construction or other activities within big game winter ranges in Idaho typically will apply from November 15 through April 30 unless a temporary, short-term exception is granted by the BLM field office manager. General time-frames for calving/fawning are May 1-June 30 for elk and deer and May 15 through June 30 for pronghorn. Seasonal restrictions within bighorn sheep lambing areas will apply from approximately April 15 to June 15. These dates, as specified, are general in nature for purposes of this document, and may be adjusted as needed based on local conditions.

Since there presently is not widespread consistency across the state as to the various winter range sub-categories, we will not make distinctions as to “crucial” or other designations of winter habitat when applying seasonal restrictions or when reviewing requests for exceptions at this time. Rather, we will use the term “winter range”, as delineated locally by the Idaho Department of Fish and Game (IDFG) region for each big game species, based on the most recent available information. Additional factors to consider when granting exceptions to seasonal restrictions on winter ranges or in bighorn sheep lambing habitat include:

1. Animal presence or absence
2. Animal condition
3. Weather severity
 - Snow conditions (depth, crusting , longevity)
 - Seasonal weather patterns
 - Wind chill factor (indication of animal’s energy use)
 - Air temperatures and variation

- Duration of winter conditions
 - Forecasts (long range for duration of winter)
4. Habitat condition and availability
 - Animal density (high or low)
 - Forage condition (good or poor)
 - Competition (livestock and other wildlife)
 - Forage availability/accessibility (amount of forage, snow depth/crusting)
 - Whether or not there is suitable and ample forage immediately available and accessible nearby that is not being used
 5. Site location
 - Likelihood of animals habituating to activity
 - Presence of thermal and security (hiding) cover and other related factors
 - Proportion of winter range affected
 - Topographic Features (sight distances)
 - Location of site within winter range (adjacent? edge? center? etc.)
 - Whether there is other activity in the area and whether it is likely to increase the cumulative adverse impact
 6. Timing
 - Early in winter season?
 - Nearing end of winter season?
 - Kind and duration of disruptive activity expected

2.2. Raptors:

a. Raptor nest disturbance: Nest management guidelines are currently under revision by the U.S. Fish and Wildlife Service (FWS). Pending finalization of these FWS guidelines, protective buffers described in the February 2008 draft version of the FWS “*Guidelines for Raptor Conservation in the Western United States*” (Whittington and Allen 2008) will be used on Idaho BLM lands unless more restrictive buffers are identified in existing RMPs of MFPs. While the draft FWS guidelines provide recommended disturbance buffers for a comprehensive list of raptor species, several species of interest to Idaho BLM are summarized below for convenience.

Species	Spatial Buffer in Non-Urban Areas
Bald eagle	0.5 to 1.0 mile
Northern goshawk	0.5 mile
Ferruginous hawk	1.0 mile
Golden eagle	0.5 mile
Peregrine falcon	1.0 mile
Red-tailed hawk	0.33 mile
Prairie falcon	0.5 mile
Swainson’s hawk	0.25 mile
Burrowing owl	0.25 mile

The FWS Bald Eagle Management Guidelines (BEMG) specifies a 660 foot nest buffer for bald eagles. However page 64 in the 2008 draft FWS Guidelines for Raptor Conservation in the Western United States (Raptor Guidelines) referenced above, the FWS recommends a broader 0.5

to 1.0 mile buffer in more open areas of the western U.S. due to greater line-of-sight distances. For winter roosts, a 0.25 to 1 mile buffer is recommended, depending on the degree of screening provided by vegetation or topographic features.

Seasonal restrictions for potentially disruptive construction or other human activities, will generally apply for raptors from February 1 through July 31 unless an exception is granted by the BLM field office manager. Temporary exceptions can be granted in situations where the raptor nest has been destroyed (e.g., by wind, wildfire, lightning), or is not currently active (i.e., young have fledged or if the nest is unused in the current nesting season). Exceptions or temporal deviations from the established February 1 - July 31 timeframe may also be granted based on species, variations in nesting chronology of particular species locally, topographic considerations (e.g., intervening ridge between construction activities and a nest) or other factors that are biologically reasonable. Biologists should review the Bald Eagle Management Guidelines, Draft Guidelines for Raptor Conservation in the Western United States, and Interim Golden Eagle Technical Guidance documents for additional details and protocols.

b. Golden eagle- additional considerations: During project planning, the BLM and project proponents should work closely with the FWS in incorporating appropriate provisions and protocols found in *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and other Recommendations in Support of Golden Eagle Management and Permit Issuance* (Pagel et al. 2010). Consideration of golden eagles and their habitat must be incorporated into NEPA analyses for all renewable energy projects per BLM Washington Office Instruction Memorandum 2010-156.

2.3. Greater Sage-grouse: The greater sage-grouse has been determined warranted for listing under Endangered Species Act but precluded by other listing priorities (Federal Register March 23, 2010). Projects should be designed and sited to avoid impacts and disturbance to leks and sage-grouse habitats to the extent possible; in particular infrastructure/energy development projects (Idaho Sage-grouse Advisory Committee 2006- see pages 4.42-4.45.).

The *Conservation Plan for the Greater Sage-grouse in Idaho* suggests that new infrastructure projects avoid seasonal habitats by a minimum of 2-5 miles, depending on the type of project. In addition, new research suggests that disturbance-related impacts from energy development on counts of displaying male sage-grouse at leks were apparent out to 6.4 km or approximately 4 miles (Naugle et al. *in press*), and that most (79%) nests occur within 6.4 km of leks (Doherty et al. *in press* citing Colorado Division of Wildlife 2008-Appendix B Page 7). Since impacts from infrastructure development may be uncertain, and are contingent on multiple factors, a conservative approach to seasonal restrictions is warranted, pending further review of recent scientific findings and refinement of conservation measures.

Therefore, assuming that projects, including large-scale infrastructure/energy development projects, have been sited to avoid most occupied or undetermined status leks and important seasonal habitats (e.g., breeding, winter) to the extent possible, and in accordance with the Conservation Plan for the Greater Sage-grouse in Idaho, the following seasonal restrictions apply to remaining leks/habitat potentially affected by the project:

a. Controlled surface and timing limitation use near sage-grouse leks and/or nesting/early brood rearing habitat: Potentially disruptive larger-scale construction activities (e.g., infrastructure/energy development and similar projects), shall be avoided within 6.4 km (~4 miles) of occupied or undetermined status sage-grouse leks from March 1 to June 30 to reduce disturbance to lekking or nesting grouse (and/or hens with early broods). Specific dates may be earlier or later,

depending on local breeding chronology. The spatial buffer may be increased or decreased based on site-specific factors analyzed and documented in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) and authorized via the appropriate Decision document. Exceptions may be granted for construction or maintenance activities involving only infrequent, short term disturbance (less than 1 hour within a 24- hour period in a specific area); or if there are intervening topographic features or line-of-sight screening that buffer the lek or nesting habitat from disturbance; or if recent (within the past 5 years) site-specific studies or local expertise suggest that nesting hens are unlikely to be present within the 4.0 mile zone surrounding the project activity. Suitable nesting and early brood-rearing habitats have not been mapped in most parts of Idaho, so these will need to be identified on a project by project basis.

b. For smaller-scale human disturbances, (e.g., water pipeline construction, routine fence maintenance, facility maintenance etc. of a minor nature) a 1.0 km (0.62 mile) lek disturbance buffer will apply between approximately March 15-May 1 in lower elevations and March 25 through May 15 in higher elevations, from 6:00 PM to 9:00 AM in a specific area to minimize disturbance to lekking grouse (Idaho Sage-grouse Advisory Committee 2006, Page 4-70). Specific dates may be earlier or later, depending on local breeding chronology.

c. For mechanical control of conifers in sage-grouse breeding habitat, work should occur between approximately July 15 and January 30 to minimize disturbance to lekking or nesting sage-grouse and early broods (ISAC 2006, Page 4.97). Specific dates may be earlier or later, depending on local breeding chronology.

d. Specific conservation measures for organized recreational events that may affect sage-grouse or sage-grouse habitat have not been developed to date. In the interim, events should be sited and timed in a manner to minimize impacts to sage-grouse. Spatial and temporal buffers will be developed on a site-specific basis in consideration of the nature of the activity.

2.4. Columbian sharp-tailed grouse: Assuming that projects, including large-scale projects (e.g., infrastructure/energy) have been sited to avoid most occupied or undetermined status leks and important seasonal habitat (e.g., breeding, winter) to the extent possible, the following seasonal restrictions apply to remaining leks/habitat potentially affected:

a. Where sharp-tailed grouse leks occur in proximity to sage-grouse leks, the 4 mile sage-grouse lek/nesting habitat disturbance buffer, as described above, will apply for larger-scale projects (e.g., infrastructure, energy development), from March 1 to June 30. The spatial buffer may be increased or decreased based on site-specific factors analyzed and documented in an EA or EIS and authorized via the appropriate Decision document. Specific dates may be earlier or later, depending on local breeding chronology.

b. Where sharp-tailed grouse leks occur separately (i.e., not intermingled or near sage-grouse leks), the following will apply:

1. Controlled surface and timing limitation use near Columbian sharp-tailed grouse leks and/or nesting/early brood rearing habitat: Potentially disruptive larger-scale construction activities (e.g., infrastructure/ energy development and similar projects), shall be avoided within 2.0 km (1.2 miles) of occupied or undetermined status leks from March 15 to June 30 to reduce disturbance to lekking or nesting sharp-tailed grouse unless specifically analyzed in an EA or EIS and authorized through an appropriate Decision. Specific dates may be earlier or later, depending on local breeding chronology.

The spatial buffer may be increased or decreased based on site-specific factors analyzed and documented in an EA or EIS and authorized via the appropriate Decision document.

2. Exceptions may be granted for construction or maintenance activities involving only infrequent, short term (less than one hour within a 24-hour period in a specific area) disturbance; or if there are intervening topographic features or line-of-sight screening that buffer the lek or nesting habitat from disturbance; or if recent (within the past 5 years) site-specific studies or local expertise suggest that nesting hens are unlikely to be present within the 1.2 mile zone surrounding the project activity. Suitable nesting and early brood-rearing habitats have not been mapped in most parts of Idaho, so these will need to be identified on a project by project basis.

3. For smaller scale disturbances, (e.g., water pipeline construction, fence maintenance, facility maintenance etc.), a 1.0 km (0.62 mile) lek disturbance buffer will apply between approximately March 15 and April 30 from 6:00 PM to 9:00 AM in a specific area to minimize disturbance to lekking sharp-tailed grouse. Specific dates may be earlier or later, depending on local breeding chronology.

4. Development of specific conservation measures for organized recreational events that may affect sharp-tailed grouse or habitat have not been developed to date. In the interim, events should be sited and timed in a manner to minimize impacts to grouse. Spatial and temporal buffers will be developed on a site-specific basis in consideration of the nature of the activity.

3.0. General procedure for requesting and granting exceptions to seasonal wildlife restrictions:

Even with conscientious planning up front, it is sometimes not possible to avoid impacts to wildlife. In such cases, temporary exceptions to wildlife seasonal restrictions may be allowed at times to accommodate certain activities, such as construction of energy development facilities, power transmission lines or other projects, if the activities can be done quickly and with little or no disturbance to the wildlife species of interest. The intent of allowing an exception is to eliminate a restriction when it has no applicability or is not needed to avoid impacts to wildlife. The discretion to allow an exception is limited to those situations where the degree of impacts to wildlife, as predicted in the NEPA analysis (e.g., as completed in the EA or EIS for the project in question), would be the same, with or without the restriction. An exception is a case-by-case, one time exemption from a seasonal restriction for a specified portion of the project, right-of-way or lease area.

The unpredictability of factors such as weather, animal movement and animal condition precludes analysis and processing of specific requests for exception very far in advance of the time periods in question. However the restrictions and potential need for exceptions should be described and evaluated in project NEPA analyses to the extent possible. Exceptions to seasonal restrictions may be considered and granted by the field office manager if the BLM field office biologist in consultation with IDFG believes that granting an exception will not unacceptably disturb, displace or stress the wildlife species being protected. There is no clear-cut formula but use of available data and knowledge of local conditions will be the primary factors in making the recommendation. The general process will be as follows:

1. A request for an exception to a seasonal wildlife restriction must be initiated in writing (via letter or email) by the operator or project proponent (or appropriate representative) to the BLM field office manager/ authorized officer. The request must include a 1) description of the activity needing exception, 2) description of the need and rationale for the exception, 3) description of mitigation measures and alternatives such as traffic restrictions, alternative scheduling, staged activity, etc., that may reduce impacts to the wildlife resource, and 4) date or dates for the requested exception.

2. The BLM field office biologist, in coordination with the appropriate IDFG staff, will review the application for exception and available information, including site visits, as appropriate, along with the considerations and criteria in section 2.0 of this document. Analyses of requests for exception will include validation of the seasonal restriction (e.g., is the area still serving as mule deer winter range? Is there still a likelihood of nesting raptors in the area, etc.?) and a review of potential mitigation measures and alternatives proposed in the application, such as traffic restrictions, alternative scheduling, staged activity, etc. The BLM field office biologist will then provide a recommendation in writing to the field office manager as expeditiously as is practical.

3. A final determination for granting an exception to seasonal wildlife restrictions will be made by the BLM field office manager, in consideration of the biologist's recommendation and consistent with applicable law, regulation, policy, or local planning. The request for exception is considered as a unique, site specific action and is analyzed and subsequently documented by the field office manager or his/her representative, with respect to RMP and project NEPA compliance. If existing project-level NEPA documentation is adequate, a Determination of NEPA Adequacy (DNA) and Decision Record are sufficient (See BLM NEPA Handbook H-1790-1 (2008)). In other cases, preparation of a separate EA may be necessary; however under those circumstances it would be difficult to accommodate an exception on short notice. In all cases, the rationale for granting or not granting the exception must be documented in the Decision Record, including the biologists' findings and recommendation and concurrence or non-concurrence with IDFG recommendations.

4. Notification to the applicant will occur in writing, via letter or email from the field office manager or his/her representative.

5. Exceptions may be cancelled by the field office manager/ authorized officer in the event that local conditions change suddenly in a manner that places wildlife at unacceptable risk. For example, a temporary exception for construction activities in big game winter range granted on a Monday could be cancelled if heavy snowfall on the following Wednesday results in an unanticipated concentration of mule deer in the project area. In such cases, the field office manager or his/her representative will contact the project proponent as soon as possible to discuss the situation and negotiate an appropriate resolution.

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Appendix H - 2012 BLM Special Status Species List

Definitions of Special Status Species:

Type 1, Threatened, Endangered, Proposed, and Candidate Species

These species are listed by the U.S. Fish and Wildlife Service as threatened or endangered, or they are proposed or candidates for listing under the Endangered Species Act.

Type 2, Rangewide/Globally Imperiled Species – High Endangerment

These are species that have a high likelihood of being listed in the foreseeable future due to their global rarity and significant endangerment factors.

Type 3, Rangewide/ Globally Imperiled Species – Moderate Endangerment

These are species that are globally rare with moderate endangerment factors. Their global rarity and inherent risks associated with rarity make them imperiled species.

Type 4, Species of Concern

These are species that are generally rare in Idaho with small populations or localized distribution and currently have low threat levels. However, due to the small populations and habitat area, certain future land uses in close proximity could significantly jeopardize these species.

Type 5, Watch List

Watch list species are not considered BLM sensitive species and associated BLM sensitive species policy guidance does not apply. Watch list species include species that may be added to the sensitive species list depending on new information concerning threats and species biology or statewide trends.

NOTE: The following lists are dynamic, and the conservation status for individual species may be updated.

Special Status Plants

Scientific Name	Common Name	Status*	JFO	BFO	SFO
<i>Lepidium papilliferum</i>	Slickspot peppergrass	Type 1 (Proposed)	X		
<i>Astragalus anserinus</i>	Goose Creek milkvetch	Type 1 (Candidate)		X	
<i>Phacelia inconspicua</i>	Obscure phacelia	Type 2			X
<i>Phacelia minutissima</i>	Least phacelia	Type 2			X
<i>Stanleya confertiflora</i>	Malheur princesplume	Type 2			X
<i>Astragalus oniciformis</i>	Picabo milkvetch	Type 3			X
<i>Astragalus yoder-williamsii</i>	Mudflat milkvetch	Type 3	X		
<i>Cleomella plocasperma</i>	Twisted/Alkali cleomella	Type 3	X		
<i>Cymopterus acaulis</i> var. <i>greeleyorum</i>	Greeley's wavewing	Type 3	X		
<i>Epipactus gigantea</i>	Chatterbox orchid	Type 3	X	X	X
<i>Haplopappus insecticruris</i>	Bug-leg goldenweed	Type 3			X
<i>Ipomopsis polycladon</i>	Spreading gilia	Type 3	X		
<i>Lepidium davisii</i>	Davis' peppergrass	Type 3	X	X	
<i>Linanthus glabrum</i>	Bruneau River phlox	Type 3	X		
<i>Penstemon idahoensis</i>	Idaho penstemon	Type 3		X	
<i>Penstemon janishiae</i>	Janish's penstemon	Type 3	X		
<i>Sporobolus compositus</i> var. <i>compositus</i>	Tall dropseed	Type 3			X
<i>Townsendia scapigera</i>	Scapose townsendia	Type 3		X	
<i>Allium anceps</i>	Two-headed onion	Type 4	X	X	
<i>Astragalus astratus</i> var. <i>inseptus</i>	Mourning milkvetch	Type 4			X
<i>Astragalus newberry</i> var. <i>castoreus</i>	Newberry's milkvetch	Type 4	X	X	
<i>Astragalus purshii</i> var. <i>ophiogenes</i>	Snake River milkvetch	Type 4	X		X
<i>Astragalus tetrapterus</i>	Four-wing milkvetch	Type 4	X	X	
<i>Calandrinia ciliata</i>	Fringed redmaids	Type 4			X
<i>Catapyrenium congestum</i>	Earth lichen	Type 4	X		
<i>Chaenactis stevioides</i>	Desert pincushion	Type 4	X		
<i>Damasonium californicum</i>	California damasonium	Type 4			X
<i>Downingia bacigalupii</i>	Bacigalupi's downingia	Type 4			X
<i>Eatonella nivea</i>	White false tickhead	Type 4	X		X
<i>Eriogonum shockleyi</i> var. <i>packardiae</i>	Packard's buckwheat	Type 4	X		
<i>Eriogonum shockleyi</i> var. <i>shockleyi</i>	Shockley's matted buckwheat	Type 4	X		
<i>Glyptopleura marginata</i>	White-margined wax plant	Type 4	X	X	
<i>Mentzelia congesta</i>	United blazingstar	Type 4			X
<i>Nemacladus rigidus</i>	Rigid threadbush	Type 4	X		
<i>Pediocactus simpsonii</i>	Simpson's hedgehog cactus	Type 4	X	X	X
<i>Peteria thompsoniae</i>	Spine-noded milkvetch	Type 4	X		
<i>Primula cusickiana</i> complex	Cusick's primrose	Type 4	X		X

Scientific Name	Common Name	Status*	JFO	BFO	SFO
<i>Teucrium canadense</i> var. <i>occidentale</i>	American wood sage	Type 4	X		
<i>Erigeron latus</i>	Broad fleabane	Nevada BLM Sensitive	X		
<i>Eriogonum lewisii</i>	Lewis buckwheat	Nevada BLM Sensitive	X		

Special Status Animals

Scientific Name	Common Name	Status	JFO	BFO	SFO
Mammals					
<i>Canis lupus</i>	Gray wolf	Experimental Population		X	X
<i>Brachylagus idahoensis</i>	Pygmy rabbit	Type 2	X	X	X
<i>Euderma maculatum</i>	Spotted bat	Type 3	X	X	
<i>Plecotus townsendii</i>	Townsend's big-eared bat	Type 3	X	X	X
<i>Spermophilus mollis artemisae</i>	Piute ground squirrel	Type 3		X	X
<i>Gulo gulo luscus</i>	Wolverine	Type 3			X
<i>Ovis canadensis californiana</i>	California bighorn sheep	Type 3	X	X	
<i>Tamias dorsalis</i>	Cliff chipmunk	Type 4		X	
<i>Spermophilus elegans nevadensis</i>	Wyoming ground squirrel	Type 4	X	X	
<i>Perognathus longimembris</i>	Little pocket mouse	Type 4		X	
<i>Vulpes velox</i>	Kit fox	Type 4	X	X	
<i>Myotis yumanensis</i>	Yuma myotis	Type 5	X	X	X
<i>Myotis evotis</i>	Log-eared myotis	Type 5	X	X	X
<i>Myotis volans</i>	Long-legged myotis	Type 5	X	X	X
<i>Myotis ciliolabrum</i>	Western small-footed myotis	Type 5	X	X	X
<i>Pipistrellus hesperus</i>	Western pipistrelle	Type 5	X	X	X
Birds					
<i>Coccyzus americanus</i>	Yellow-billed cuckoo	Type 1 (Candidate)	X	X	X
<i>Centrocercus urophasianus</i>	Greater sage-grouse	Type 1 (Candidate)	X	X	X
<i>Pelecanus erythrorhynchos</i>	American white pelican	Type 2	X	X	X
<i>Cygnus buccinator</i>	Trumpeter swan	Type 3	X		X
<i>Falco peregrinus anatum</i>	Peregrine falcon	Type 3	X	X	X
<i>Falco mexicanus</i>	Prairie falcon	Type 3	X	X	X
<i>Accipiter gentilis</i>	Northern goshawk	Type 3	X	X	X
<i>Buteo regalis</i>	Ferruginous hawk	Type 3	X	X	X
<i>Tympanuchus phasianellus columbianus</i>	Columbian sharp-tailed grouse	Type 3	X		X
<i>Oreotyx pictus</i>	Mountain quail	Type 3	X		X
<i>Chlidonias niger</i>	Black tern	Type 3		X	
<i>Otus flammeolus</i>	Flammulated owl	Type 3		X	X
<i>Stellula calliope</i>	Calliope hummingbird	Type 3	X	X	X
<i>Melanerpes lewis</i>	Lewis woodpecker	Type 3	X	X	X
<i>Sphyrapicus throideus</i>	Williamson's sapsucker	Type 3			X

Scientific Name	Common Name	Status	JFO	BFO	SFO
<i>Empidonax trailii</i>	Willow flycatcher	Type 3	X	X	X
<i>Empidonax hammondi</i>	Hammond's flycatcher	Type 3		X	X
<i>Contopus borealis</i>	Olive-sided flycatcher	Type 3		X	X
<i>Lanius ludovicianus</i>	Loggerhead shrike	Type 3	X	X	X
<i>Amphispiza belli</i>	Sage sparrow	Type 3	X	X	X
<i>Spizella breweri</i>	Brewer's sparrow	Type 3	X	X	X
<i>Plegadis chihi</i>	White-faced ibis	Type 4	X	X	X
<i>Vermivora virginiae</i>	Virginia's warbler	Type 4		X	
<i>Amphispiza bilineata</i>	Black-throated sparrow	Type 4	X	X	
<i>Buteo swainsoni</i>	Swainson's hawk	Type 5	X	X	X
<i>Dendragapus obsurus</i>	Blue grouse	Type 5	X	X	X
<i>Numenius americanus</i>	Long-billed curlew	Type 5	X	X	X
<i>Phalaropus tricolor</i>	Wilson's phalarope	Type 5	X	X	X
<i>Glaucidium gnoma</i>	Northern pygmy-owl	Type 5		X	X
<i>Strix nebulosa</i>	Great gray owl	Type 5		X	X
<i>Asio flammeus</i>	Short-eared owl	Type 5	X	X	X
<i>Aegolius funereus</i>	Boreal owl	Type 5		X	X
<i>Speotyto cunicularia</i>	Western burrowing owl	Type 5	X	X	X
<i>Sphyrapicus nuchalis</i>	Red-naped sapsucker	Type 5	X	X	X
<i>Picoides arcticus</i>	Black-backed woodpecker	Type 5			X
<i>Empidonax occidentalis</i>	Cordilleran flycatcher	Type 5	X	X	X
<i>Gymnorhinus cyanocephalus</i>	Pinyon jay	Type 5		X	
<i>Oreoscoptes montanus</i>	Sage thrasher	Type 5	X	X	X
<i>Pipilo chlorurus</i>	Green-tailed towhee	Type 5	X	X	X
<i>Ammodramus savannarum</i>	Grasshopper sparrow	Type 5	X	X	X
<i>Euphagus cyanocephalus</i>	Brewer's blackbird	Type 5	X	X	X
<i>Carpodacus cassinii</i>	Cassin's finch	Type 5		X	X
Amphibians					
<i>Rana luteiventris</i>	Columbia spotted frog	Type 1 (Candidate)	X		
<i>Rana pipiens</i>	Northern leopard frog	Type 2	X	X	X
<i>Bufo boreas</i>	Western toad	Type 3	X	X	X
<i>Bufo woodhousii</i>	Woodhouse toad	Type 3	X		X
Fish					
<i>Salvelinus confluentus</i>	Bull trout	Type 1 (Threatened)	X		X
<i>Oncorhynchus mykiss</i>	Redband trout	Type 2	X	X	X
<i>Oncorhynchus clarki</i>	Yellowstone cutthroat	Type 2		X	
<i>Acipenser transmontanus</i>	White Sturgeon	Type 2	X		
<i>Cottus greeniei</i>	Shoshone sculpin	Type 2			X
<i>Cottus leiopomus</i>	Wood River sculpin	Type 2			X
<i>Cila copei</i>	Leatherside chub	Type 3		X	X
<i>Cottus confusus</i>	Shorthead sculpin	Type 5			X
Invertebrates					
<i>Taylorconcha serpenticola</i>	Bliss Rapids snail	Type 1 (Threatened)	X	X	X
<i>Lanx spp.</i>	Banbury Springs limpet	Type 1 (Endangered)			X

Scientific Name	Common Name	Status	JFO	BFO	SFO
<i>Physa natricina</i>	Snake River physa snail	Type 1 (Endangered)	X	X	X
<i>Pyrgulopsis bruneauensis</i>	Bruneau hot springsnail	Type 1 (Endangered)	X		
<i>Valvata utahensis</i>	Utah Valvata snail	Type 2	X		
<i>Fisherola nuttalli</i>	Shortface lanx	Type 2	X	X	X
<i>Cicindela arenicola</i>	St. Anthony Sand Dunes tiger beetle	Type 2		X	X
<i>Cicindela waynei waynei</i>	Bruneau Dunes tiger beetle	Type 2	X		
<i>Glacicavicola bathyscoides</i>	Blind Cave leiodid beetle	Type 2		X	X
<i>Anodonta californiensis</i>	California floater	Type 3	X	X	X
<i>Flumincola fuscus</i>	Columbia pebblesnail	Type 3	X		X

Appendix I - Migratory Bird Species of Conservation Concern in the Great Basin

All species listed below are also designated Birds of Management Concern; a subset of the species protected by the Migratory Bird Treaty Act (see 50 CFR 10.13) which pose special management challenges because of a variety of factors (e.g., too few, too many, conflicts with human interests, societal demands). Some are also BLM special status species. The Migratory Bird Program places priority emphasis on these birds. (USFWS Migratory Bird Program Strategic Plan 2004-2014).

Common Name	Scientific Name	Status
American avocet	<i>Recurvirostra americana</i>	N/A
American golden plover	<i>Pluvialis dominica</i>	N/A
Black swift	<i>Cypseloides niger</i>	N/A
Brewer's sparrow	<i>Spizella breweri</i>	Type 3
Ferruginous hawk	<i>Buteo regalis</i>	Type 3
Flammulated owl	<i>Otus flammeolus</i>	Type 3
Golden eagle	<i>Aquila chrysaetos</i>	N/A
Gray vireo	<i>Vireo vicinior</i>	N/A
Lewis woodpecker	<i>Melanerpes lewis</i>	Type 3
Loggerhead shrike	<i>Lanius ludovicianus</i>	Type 3
Long-billed curlew	<i>Numenius americanus</i>	N/A
Marbled godwit	<i>Limosa fedoa</i>	N/A
Peregrine falcon	<i>Falco peregrinus anatum</i>	Type 3
Prairie falcon	<i>Falco mexicanus</i>	Type 3
Sage sparrow	<i>Amphispiza belli</i>	Type 3
Sanderling	<i>Calidris alba</i>	N/A
Snowy plover	<i>Charadrius alexandrinus</i>	N/A
Solitary sandpiper	<i>Tringa solitaria</i>	N/A
Swainson's hawk	<i>Buteo swainsoni</i>	N/A
Tricolored blackbird	<i>Agelaius tricolor</i>	N/A
Virginia's warbler	<i>Vermivora virginiae</i>	Type 4
Western burrowing owl	<i>Speotyto cunicularia</i>	N/A
Whimbrel	<i>Numenius phaeopus</i>	N/A
Wilson's phalarope	<i>Phalaropus tricolor</i>	N/A
Yellow rail	<i>Coturnicops noveborucensis</i>	N/A
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Type 1 (Candidate)

Appendix J - Land Treatment Monitoring Guidelines

From Twin Falls District Instruction Memorandum IDIMT000-2012-001

The following criteria and guidelines will be used to determine and establish monitoring data collection techniques, methodology by treatment type, data collection intensity, and monitoring point locations.

Data Collection Methods

The following data collection methods will be the standard for TFD vegetation treatments. Additional monitoring data collection methods may be necessary for unique or uncommon treatments. All monitoring points will have geographic positioning system (GPS) data collected for point establishment and during each subsequent data collection visit. GPS data will be maintained within established geodatabases and tabular datasets including ArcGIS and Firemon and Feat Integrated (FFI).

Plot Design

- Triad transect lines (U.S. Geologic Survey [USGS] Standards)

Quantitative Methods

- Line-Point Intercept (USGS Standards) for the measurement of vegetation cover
- Quadrats (USGS Standards) for the measurement of grass/forb density
- Belt Transects (USGS Standards) for the measurement of brush density

Qualitative Methods

- Photo Points taken in the four Cardinal directions (Idaho BLM Fuels Standards)
- Data Dictionary “Vegetation Survey” (Idaho BLM Fuels Standards)

Methodology by Treatment Type

Recommended monitoring methods for vegetation treatments are outlined in the following table.

Treatment	Cover	Density (quadrat)	Density (belt transect)	Photos	Data Dictionary /GPS point
Drill/Harrow Seeding	Yes	Yes	No	Yes	Yes
Aerial Seeding (grass)	Yes	Yes	No	Yes	Yes
Aerial Seeding (brush)	No	No	Yes	Yes	Yes
Hand Planting (brush)	No	No	Yes	Yes	Yes
Chemical (broadcast)	Yes	No	No	Yes	Yes
Hand Thinning	Yes	No	No	Yes	Yes
Mastication	Yes	No	No	Yes	Yes
Prescribed Fire	Yes	Yes	No	Yes	Yes

Monitoring Intensity Determinations

Number of monitoring points recommended for vegetation treatments are outlined in the following table. Total monitoring point determination may be adjusted for unique circumstances such as a high degree of ecological site variability within a single treatment. Reference monitoring points for untreated areas should not exceed 10% of total monitoring points for the treatment area.

Vegetation Type	Treatment Size (acres)	Monitoring Point Intensity
Grass/Shrub	Less than 500	1
Grass/Shrub	500 to 2,999	1/500 acres (minimum 3)
Grass/Shrub	3,000 to 24,999	1/1,000 acres (minimum 5)
Grass/Shrub	25,000 to 50,000	25 points total
Grass/Shrub	Greater than 50,000	35 points total
Woodland/Forest	Less than 250	1
Woodland/Forest	250 to 1,499	1/250 acres (minimum 3)
Woodland/Forest	1,500 to 12,500	1/500 acres (minimum 5)
Woodland/Forest	Greater than 12,500	25 points total

Randomized Point Determinations

Monitoring points within a treatment area should use existing vegetation data collection points when possible to build a site “history.” Monitoring points should be determined using randomization when there are no pre-existing data collection points. The preferred method is the use of ArcGIS randomization tools. Randomized points may need to be moved to a more representative location based on professional judgment (i.e. if a randomized point falls on a large rock outcrop or road the point may be moved to the nearest representative area).

Point randomization may be stratified to monitor treatment results across a range of variables. Stratification of monitoring points should use the following hierarchy of variables. Other stratification variables may be used based on unique site conditions or treatment objectives.

Exclosures may be used as a means of obtaining data from a controlled site and should contain both treated and untreated vegetation.

Stratification Hierarchy:

1. Treatment type
2. Pre-existing inventory/monitoring points
3. Seed mixes
4. Soil types
5. Allotment (if practical and feasible)
6. Land designation (if necessary and feasible)