
RECORD OF DECISION

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CHAPTER 1

INTRODUCTION

The Bureau of Land Management (BLM), an agency of the U.S. Department of the Interior (USDI), administers vegetation on nearly 261 million acres (public lands; treatment area) in 17 states in the western U.S. (Alaska, Arizona, California, Colorado, Idaho, Montana, Nebraska, New Mexico, Nevada, North Dakota, South Dakota, Oklahoma, Oregon, Texas, Utah, Washington, and Wyoming). Management and control of vegetation for resource and habitat enhancement is accomplished using a variety of treatment methods, including, but not limited to: herbicides, prescribed fire and wildland fire use (collectively termed “fire use”), manual and mechanical methods, and biological controls such as insects, pathogens, fish, and domestic grazing animals.

The BLM last assessed its use of vegetation treatment methods during the late 1980s and early 1990s, by preparing Environmental Impact Statements (EISs) and Records of Decisions (RODs) that covered vegetation treatment activities in 14 western states in the continental U.S. These EISs evaluated the environmental impacts associated with vegetation control and modification using all treatment methods on approximately 500,000 acres of public lands annually in the western U.S. The EISs also evaluated the human health and non-target species risks of using 22 herbicide active ingredients on these public lands.

In response to the threats of wildfire, invasive vegetation, and noxious weeds, the President and Congress have directed the USDI and BLM, through implementation of the *National Fire Plan* and the *Healthy Forests Restoration Act of 2003* (HFRA), to take more aggressive actions to reduce catastrophic wildfire risk on public lands. The actions will be taken to protect life and property, and to manage vegetation in a manner that provides for long-term economic sustainability of local communities, improved habitat and vegetation conditions for fish and wildlife, and other public land uses.

As a result of these actions, the amount of hazardous fuels reduction and other vegetation management work using herbicides conducted by the BLM is expected to increase from about 150,000 acres to about 932,000 acres annually.

The BLM has identified several new herbicide active ingredients that it would like to use that are more effective in treating certain types of vegetation than currently approved herbicide active ingredients. The BLM has determined that the potential for increased use of herbicides, and approval for use of additional herbicide active ingredients on public lands, required further assessment under the National Environmental Policy Act (NEPA).

A Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS) was released to the public on June 29, 2007. The PEIS analyzes the effects of using herbicides for treating vegetation on public lands in the western U.S., including Alaska. These lands include Oregon and California Land Grant lands, Coos Bay Wagon Road lands, Areas of Critical Environmental Concern, and lands administered by the BLM through its National Landscape Conservation System, such as Wilderness Study Areas, designated Wilderness Areas, National Monuments, National Conservation Areas, Wild and Scenic Rivers, and National Recreation Areas.

In accordance with NEPA, the PEIS identified impacts on the natural and human environment associated with herbicide use. The BLM evaluated five program alternatives in the PEIS, including the Preferred Alternative and the No Action Alternative. Alternative actions are those that could be taken to feasibly attain or approximate the BLM’s objectives for herbicide use, as expressed in its programs, policies, and land use plans (i.e., to achieve the stated purpose and need of the PEIS). The alternatives considered in the PEIS address known public concerns and issues. Comments, documents, and information received concerning the PEIS were considered in preparing the ROD presented here.

CHAPTER 2

DECISION

The decision is to: 1) approve the herbicide active ingredients assessed and analyzed under the Preferred Alternative (Alternative B) in the PEIS for use on public lands administered by the BLM in 17 western states, including Alaska, and 2) approve the use of the scientific assessment protocol to guide the analytical methodology for consideration of the use or non-use of herbicides by the BLM. These decisions are supported by herbicide treatment standard operating procedures (SOPs) and mitigation measures to ensure that the natural and human environment are protected during implementation of herbicide treatments. This ROD makes no decisions regarding the number of acres to be treated.

Herbicide Active Ingredients Approved for Use

The BLM will approve and use in 17 western states 14 herbicide active ingredients previously approved for use in BLM RODs and for which an analysis of risks to humans and non-target plants and animals was conducted for the PEIS or by the U.S. Department of Agriculture Forest Service (Table 1). These herbicide active ingredients are: 2,4-D, bromacil, chlorsulfuron, clopyralid, dicamba, diuron, glyphosate, hexazinone, imazapyr, metsulfuron methyl, picloram, sulfometuron methyl, tebuthiuron, and triclopyr. The BLM will also approve and use four additional herbicide active ingredients in all 17 states assessed in the PEIS: diquat, diflufenzopyr (in formulation with dicamba and known as Overdrive[®]), fluridone, and imazapic. In addition, the BLM will use diflufenzopyr as a stand-alone active ingredient at such time the ingredient becomes registered for use by the U.S. Environmental Protection Agency (USEPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

These herbicide active ingredients and formulations shall be applied for uses, and at application rates, specified on the herbicide product label. The BLM will comply with changes in label directions and will comply with all state registration requirements. If state registration requirements do not allow the application of a particular herbicide active ingredient approved for use in the PEIS, the BLM will not authorize use of the

herbicide active ingredient within the state where its use is prohibited.

Herbicide Active Ingredients Not Approved for Use

The BLM will not approve the use of six herbicide active ingredients approved in the prior EIS RODs—2,4-DP, asulam, atrazine, fosamine, mefluidide, and simazine. These herbicide active ingredients have not been used, or their use has been negligible, by the BLM since the last ROD approving herbicide active ingredients was issued in 1992. Although the risks to humans from the use of these herbicide active ingredients are not significant based on previous human health risk assessments and a review of the literature for the PEIS, the BLM has determined the risks to non-target plants and animals, especially sensitive species of concern, have not been adequately evaluated to support continued use of these herbicide active ingredients.

Protocol for Identifying, Evaluating, and Approving Herbicide Active Ingredients

The BLM may consider the use of new herbicide active ingredients, products, and technologies in vegetation treatment projects. The BLM may also reconsider the use of herbicide active ingredients approved in previous EIS RODs, but not approved for use under this PEIS ROD. The process for identifying, evaluating, and approving herbicide active ingredients is outlined in the scientific methodology protocol attached to this ROD as Appendix A.

The BLM will be able to use herbicide active ingredients if: 1) they are registered by the USEPA under FIFRA 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. The evaluation criteria are outlined in more detail in Appendix A of this ROD.

Treatment Acres

This ROD makes no decisions regarding the numbers of acres to be treated under the Preferred Alternative or any other alternative. Treatment acre estimates given in Chapter 2 of the PEIS and used to assess the effects of the alternatives were derived from a combination of broad macro-scale assessments (e.g., National Fire Regime Condition Class), annual averages of emergency stabilization and rehabilitation work typically following catastrophic fire, national program level estimates of work conducted annually under various resource programs, and estimates from BLM field offices on the types (fire use, manual, mechanical, biological, and chemical) and scale (size in acres) of projects likely to be proposed in the near term (10 years). Treatment acreages are estimates to allow a reasoned analysis of impacts. They are not limits or targets. Because of the broad and programmatic structure of the PEIS analysis, it is not possible to provide site-specific information on acres or types of treatments for any ecological sub-unit addressed in the PEIS or for any specific vegetation type or species.

Actual goals and objectives for vegetation management, including the planning and implementation of vegetation treatment projects, are derived from approved land use plans as discussed in Chapter 2 of the PEIS. Nothing in this ROD supercedes or modifies the allocations identified in any approved BLM land use plan.

Herbicide Treatment Standard Operating Procedures

The BLM will follow SOPs to ensure that risks to human health and the environment from herbicide treatment actions are kept to a minimum. Standard operating procedures 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 procedures are identified in Appendix B and include, but are not limited to:

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

- Use effective nonchemical methods of vegetation control when and where feasible.
- Use herbicides after considering the effectiveness of all potential methods or in combination with other methods or controls.
- Develop plans to thoroughly evaluate the need for chemical treatments and their potential for impact on the environment.
- Reseed or plant disturbed areas with desirable vegetation when the native plant community cannot recover and occupy the site sufficiently.
- Survey the project site for species listed or proposed for listing, or special status species. If a proposed project may affect a proposed or listed species or its critical habitat, the BLM will consult with the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS). The BLM will also follow protective measures identified in the NMFS *Endangered Species Act Section 7 Consultation Biological Opinion Proposed Vegetation Treatment Program for 17 Western States* (see Appendix C of this ROD).
- Avoid using tools and equipment for vegetation management in wilderness areas unless they are necessary for the protection of the wilderness resource.
- Meet responsibilities for consultation and government-to-government relationships with Native American tribes by consulting with appropriate tribal representatives prior to taking actions that affect tribal interests.
- Notify potentially affected parties of treatment activities that occur on public lands.
- Ensure that the public is allowed input into vegetation management actions on public lands under the NEPA process.

Mitigation

In addition to using the SOPs identified above, the BLM will also implement additional measures to mitigate potential adverse environmental effects as a result of vegetation treatment activities using herbicides (Table 2). These SOPs and mitigation measures ensure that all practicable means to avoid or minimize environmental harm have been adopted by the BLM.

TABLE 1
States in which Herbicide Active Ingredients are Approved for Use on Public Lands under this Record of Decision

Chemical	AK	AZ	CA	CO	ID	MT	NE	NV	NM	ND	OK	OR	SD	TX	UT	WA	WY
2,4-D	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Bromacil	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Chlorsulfuron	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Clopyralid	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Dicamba	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Diflufenzopyr + dicamba	⊙	•	⊙	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Diquat	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Diuron	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Fluridone	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Glyphosate	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Hexazinone	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Imazapic	⊙	•	⊙	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Imazapyr	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Metsulfuron methyl	•	•	⊙	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Picloram	⊙	•	⊙	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Sulfometuron methyl	•	•	⊙	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Tebuthiuron	⊙	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Triclopyr	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

• Based upon the current EISs, these herbicide active ingredients have been analyzed and approved for application on BLM-administered lands.
 ⊙ Based upon the current EISs, these herbicide active ingredients have been analyzed and approved for application on BLM-administered lands, but application is not allowed based on registration status in the state.

**TABLE 2
Mitigation Measures**

Resource	Mitigation Measures
Air Quality	None proposed.
Soil Resources	None proposed.
Water Resources and Quality	<ul style="list-style-type: none"> • Establish appropriate (herbicide-specific) buffer zones to downstream water bodies, habitats, and species/populations of interest (see Appendix C of PEIS, Table C-16). • Areas with potential for groundwater for domestic or municipal water use shall be evaluated through the appropriate, validated USEPA 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 non-chemical methods.
Wetland and Riparian Areas	<ul style="list-style-type: none"> • See mitigation for Water Resources and Quality and Vegetation.
Vegetation	<ul style="list-style-type: none"> • Minimize the use of terrestrial herbicides (especially bromacil, diuron, and sulfometuron methyl) 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. • Limit the aerial application of chlorsulfuron and metsulfuron methyl to areas with difficult land access, where no other means of application are possible. Do not apply sulfometuron methyl aerially. • To protect special status plant species, implement all conservation measures for plants presented in the <i>Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment</i>.
Fish and Other Aquatic Organisms	<ul style="list-style-type: none"> • 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. • To protect special status fish and other aquatic organisms, implement all conservation measures for aquatic animals presented in the <i>Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment</i>. • Establish appropriate herbicide-specific buffer zones for water bodies, habitats, or fish or other aquatic species of interest (see Final PEIS Appendix C, Table C-16, 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 polyoxyethyleneamine (POEA), or seek to use formulations with the least amount of POEA, to reduce risks to aquatic organisms in aquatic environments. • At the local level, consider effects to special status fish and other aquatic organisms when designing treatment programs.
Wildlife	<ul style="list-style-type: none"> • To minimize risks to terrestrial wildlife, do not exceed the typical application rate for applications of dicamba, diuron, glyphosate, hexazinone, tebuthiuron, or triclopyr, where feasible. • 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.

**TABLE 2
Mitigation Measures (Cont).**

Resource	Mitigation Measures
Wildlife (cont.)	<ul style="list-style-type: none"> • 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. • Do not aerially apply diquat directly to wetlands or riparian areas. • To protect special status wildlife species, implement all conservation measures for terrestrial animals presented in the <i>Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment</i>.
Livestock	<ul style="list-style-type: none"> • 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 aerially apply diquat directly to wetlands or riparian areas used by livestock. • 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 and Burros	<ul style="list-style-type: none"> • Minimize potential risks to wild horses and burros by applying diuron, glyphosate, hexazinone, tebuthiuron, and triclopyr at the typical application rate, where feasible, in areas associated with wild horse and burro 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 and burros. • Apply herbicide label grazing restrictions for livestock to herbicide treatment areas that support populations of wild horses and burros. • Where practical, limit glyphosate and hexazinone to spot applications in rangeland. • Do not apply bromacil or diuron in grazing lands within herd management areas (HMAs), 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 HMAs 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 HMAs during the peak foaling season in areas where foaling is known to take place.
Paleontological and Cultural Resources	<ul style="list-style-type: none"> • 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 and Alaska Natives.
Visual Resources	None proposed.
Wilderness and Other Special Areas	Mitigation measures that may apply to wilderness and other special area resources are associated with human and ecological health and recreation (see mitigation measures for Vegetation, Fish and Other Aquatic Resources, Wildlife Resources, Recreation, and Human Health and Safety).
Recreation	Mitigation measures that may apply to recreational resources are associated with human and ecological health (see mitigation measures for Vegetation, Fish and Other Aquatic Resources, Wildlife Resources, and Human Health and Safety).

**TABLE 2
Mitigation Measures (Cont).**

Resource	Mitigation Measures
Social and Economic Values	None proposed.
Human Health and Safety	<ul style="list-style-type: none"> • 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. Do not apply sulfometuron methyl 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.

The mitigation measures listed in Table 2 will apply to plants, animals, and other resources at the programmatic level in all 17 western states. Local BLM field offices may also use interactive risk assessment spreadsheets and other information contained in ecological risk assessments (ERAs) prepared in support of the PEIS to develop more site-specific mitigation and management plans based on local site-specific conditions (e.g., soil type, rainfall, vegetation type, herbicide treatment method, and herbicide application rate). In addition, the BLM may use timing restrictions or similar practices to reduce the level of risk to an acceptable level.

Monitoring

Monitoring ensures that vegetation management SOPs and mitigation measures are adopted and implemented appropriately and determined to be effective. Monitoring is an adaptive process that continually builds upon past monitoring results. The regulations of 43 Code of Federal Regulations 1610.4-9 require that land use plans establish intervals and standards for monitoring and evaluating land management actions. During preparation of implementation plans, treatment objectives, standards, and guidelines are stated in measurable terms, where feasible, so that treatment outcomes can be measured, evaluated, and used to guide future treatment actions. This approach ensures that vegetation treatment processes are effective, adaptive, and based on prior experience.

Vegetation treatments will be monitored within a variety of established monitoring programs to determine the success of the completed work, identify corrective

measures (if needed), and identify actions that could be taken in the future to enhance treatment success. Monitoring oversight is the responsibility of each BLM State Office.

Due to the diversity of plant communities on public lands, monitoring strategies may vary in time and space depending on the species. Sampling designs and techniques vary depending on the type of vegetation. For herbicide use, implementation monitoring is accomplished through the use of Pesticide Use Proposals and Pesticide Application Records.

The BLM will use the National Invasive Species Information Management System to track the success of herbicide and other invasive species treatments. Monitoring and inventory information are collected and analyzed and this information is input into the National database and available for BLM staff to determine appropriate treatments strategies for their treatment situation based on similar BLM projects.

The BLM will use established monitoring methodologies, such as the interagency monitoring program FIREMON, for monitoring fuels treatment effectiveness.

The BLM will use the Forest Vegetation Information System (FORVIS). FORVIS is a system for storage, retrieval, and analysis of data about forestlands. These data describe existing vegetation, classify sites relative to current condition, can be used in forest growth and structure and wildlife habitat models, describe landscapes, aid in developing forest restoration

treatments, and provide a record of treatment and disturbance events.

Additional monitoring methods and guidance are found in Appendix D.

BLM monitoring activities also include long-term monitoring to evaluate the results of treatment practices 25 or more years later.

CHAPTER 3

ALTERNATIVES CONSIDERED

Five program alternatives were evaluated in the PEIS. Alternatives were developed that: A) allow the BLM to continue its current use of 20 herbicide active ingredients in 14 western states, as authorized by earlier EIS RODs; B) allow for the use of 14 herbicide active ingredients currently used by the BLM and four new herbicide active ingredients; C) prohibit the use of herbicides; D) prohibit the aerial application of herbicides; or E) prohibit the use of sulfonylurea and other acetolactate synthase-inhibiting herbicide active ingredients.

Alternative A – Continue Present Herbicide Use (No Action Alternative)

Under this alternative, the BLM would continue to use 20 herbicide active ingredients currently approved for use in 14 western states. The BLM would also continue its activities conducted under emergency stabilization and burned area rehabilitation and hazardous fuel reduction that are evaluated by NEPA compliance documents prepared by local BLM field offices.

Alternative B – Expand Herbicide Use and Allow for Use of New Herbicides in 17 Western States (Preferred Alternative)

This alternative represents the treatment of vegetation using herbicides in 17 western states (including Alaska).

Under Alternative B, the BLM would use 14 herbicide active ingredients in 17 western states that are currently approved for use and for which an analysis of risks to humans and non-target plants and animals was conducted and analyzed in the PEIS. These herbicide active ingredients are: 2,4-D, bromacil, chlorsulfuron, clopyralid, dicamba, diuron, glyphosate, hexazinone, imazapyr, metsulfuron methyl, picloram, sulfometuron methyl, tebuthiuron, and triclopyr.

The BLM would use four newly-approved herbicide active ingredients in all 17 states included in the PEIS: imazapic, diquat, diflufenzopyr (in formulation with dicamba), and fluridone. In addition, the BLM would use diflufenzopyr as a stand-alone active ingredient if it becomes registered by the USEPA under FIFRA.

Under Alternative B, the BLM would also implement a scientific protocol for assessing herbicides for authorization of use on public lands.

Alternative C – No Use of Herbicides

Under Alternative C, the BLM would not treat vegetation using herbicides and would not authorize the use of additional chemical formulations. The BLM would treat vegetation using fire and mechanical, manual, and biological control methods only.

Alternative D – No Aerial Application of Herbicides

Alternative D is similar to Alternative B in terms of the herbicides proposed for use and implementation of a scientific protocol. Under Alternative D, however, only ground-based techniques would be used to apply herbicides (no aerial applications of herbicides would be allowed) to reduce the risk of spray drift impacting non-target areas.

Alternative E – No Use of Sulfonylurea and other Acetolactate Synthase-inhibiting Active Ingredients

Under Alternative E, the BLM would not use sulfonylurea and other acetolactate synthase (ALS)-inhibiting herbicide active ingredients, which include chlorsulfuron, imazapyr, metsulfuron methyl, and sulfometuron methyl. The BLM would use 10 herbicide active ingredients currently approved for use and for which an analysis of their risks to humans and non-

target plants and animals was conducted for this PEIS. These herbicide active ingredients are: 2,4-D, bromacil, clopyralid, dicamba, diuron, glyphosate, hexazinone, picloram, tebuthiuron, and triclopyr. The six other herbicide active ingredients currently approved for use by the BLM (2,4-DP, atrazine, asulam, fosamine, mefluidide, and simazine) would not be used unless guidelines outlined in the scientific protocol described in Alternative B were met.

In addition, the BLM would use three additional active ingredients in all 17 states: diquat, diflufenzopyr (if it becomes registered by the USEPA), and fluridone. The BLM would also use a formulation of diflufenzopyr and dicamba. Under Alternative E, the BLM would authorize the use of additional active ingredients consistent with the scientific protocol identified under Alternative B that do not contain sulfonylurea and other acetolactate synthase-inhibiting compounds.

Environmentally Preferable Alternative

Alternative B, The Preferred Alternative, is the environmentally preferable alternative in this ROD. The BLM determined that the risks associated with the use of herbicides under this alternative will be minor, and the benefits of herbicide use will be greater than with the other alternatives; therefore, the BLM identified this alternative as the environmentally preferred alternative.

CHAPTER 4

MANAGEMENT CONSIDERATIONS

The decision to select Alternative B of the PEIS takes into consideration Administrative and Congressional policies and statutory requirements, agency resource management policies, manual and handbook guidance, resource management goals and objectives, concerns and input from the public, non-government organizations, industry and public agencies, and past experience managing vegetation. Through this review process, all practicable methods to reduce environmental harm were incorporated into this decision. The BLM also undertook consultation with the USFWS and NMFS under Section 7 of the Endangered Species Act (ESA). The USFWS concurred with the determination of Not Likely to Adversely Affect for threatened and endangered species, species proposed for listing, or their critical habitats given in the *Biological Assessment for Vegetation Treatments on Bureau of Land Management Lands in 17 Western States*. The NMFS issued a Biological Opinion and concluded that the proposed action is not likely to jeopardize the continued existence of endangered and threatened salmonids and other marine and estuarine species under the jurisdiction of the NMFS, or species proposed for listing, and is not likely to destroy or adversely modify their designated critical habitat. The USFWS concurrence letter and NMFS Biological Opinion are incorporated into this ROD and are found in Appendix C.

Federal Laws, Regulations, and Policies that Influence Vegetation Treatment Policies

The President and Congress have directed the USDI and BLM, through implementation of the *National Fire Plan* and the *Healthy Forests Restoration Act of 2003*, to take more aggressive actions to reduce catastrophic wildfire risk on public lands.

The BLM's *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan*; *Partners Against Weeds: An Action Plan for the Bureau of Land Management*; and *Pulling Together: National Strategy for Invasive Plant*

Management identify broad objectives for management of vegetation on public lands, while treatment activities at the local level are guided by the goals, standards, and objectives of land use plans developed for each BLM field office.

Several laws provide for management and control of invasive vegetation. Two weed control laws, the Carlson-Foley Act of 1968 and the Plant Protection Act of 2000 (Public Law 106-224; includes management of undesirable plants on federal lands) authorize and direct the BLM to manage noxious weeds 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 Federal Noxious Weed Act of 1974 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 Noxious Weed Control Act of 2004 established a program to provide assistance through states to eligible weed management entities to control or eradicate harmful, non-native weeds on public and private lands. The Public Rangelands Improvement Act of 1978 requires the BLM to manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible. Executive Order 13112, Invasive Species, 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.

NEPA Requirements of the Program

The PEIS provides NEPA compliance by assessing the program of using herbicides to treat undesirable vegetation on public lands administered by the BLM. The necessity for treatment is determined by BLM land use plans.

The PEIS provides a broad, comprehensive background source of information to which any necessary subsequent environmental analyses can be tiered. Tiering allows local offices to prepare more specific

environmental documents without duplicating relevant portions of the PEIS. In general, the NEPA process is implemented at multiple scales depending on the scope of the proposal (Figure 1).

The broadest level, which the PEIS represents, is a national-level programmatic analysis. This level of study 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, it provides a programmatic ESA Section 7 consultation for the broad range of activities described in the PEIS.

The next scale of analysis represents a regional level of analysis, and may be prepared for regional or statewide programs. A regional level of analysis would typically focus on methods to be used, options, regional or statewide issues, and provide an ESA Section 7 consultation focused on regional issues.

The next scale of analysis is the option to prepare a field office-wide level analysis. This analysis would be prepared for district or field office-wide programs. The analysis is tiered to either or both of the two higher scales of analysis and focuses on impacts of methods and options for a single program. This scale provides ESA Section 7 consultation focused on local issues and species of concern that occur within the field office's administrative jurisdiction.

The local scale of analysis provides project level analysis and is prepared for site-specific proposals. The analysis may be tiered to any or all of the above scales of analysis. The analysis focuses on site-specific impacts of implementing a single management proposal as identified through local planning. Section 7 consultation under the ESA focuses on the implementing actions.

The environmental analysis of site treatment plans (including application of categorical exclusions, where appropriate) will be conducted at the BLM field office level. Analyses undertaken by local BLM offices will be prepared in accordance with NEPA guidance and will include public involvement as regulated by the Council on Environmental Quality, as well as follow USDI and BLM manual and handbook guidance and pertinent instruction memoranda.

The PEIS will also be used to facilitate the analysis process by providing BLM treatment design features, providing impact assessment data for herbicides, and in

overall uniformity of analysis. All additional analysis will be based on the PEIS and other applicable FEISs and RODs, including those for land use plans, timber management programs, and grazing management programs. If analysis finds potential for significant impacts not already described in the PEIS or another existing FEIS, a supplement or another EIS may be required.

Consultation, Coordination, and Interrelationships

Endangered Species Act Section 7 Consultation

As part of this PEIS, the BLM consulted with the USFWS and NMFS as required under Section 7 of the ESA. The BLM prepared a formal initiation package that included: 1) a description of the program, listed threatened and endangered species, species proposed for listing, and critical habitats that may be affected by the program; and 2) a *Biological Assessment for Vegetation Treatments on Bureau of Land Management Lands in 17 Western States*. The Biological Assessment (BA) evaluated the likely impacts to listed species, species proposed for listing, and critical habitats from the proposed use of herbicides and other treatment methods in its vegetation treatment program and identified management practices to minimize impacts to these species and habitats. The BLM also coordinated with the NMFS on Essential Fish Habitat as required under the Magnuson-Stevens Fishery Management Act. This package was submitted to the Services concurrently with release of the *Draft Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (Draft PEIS) in November 2005.

Consultation with the Services pursuant to the ESA and Magnuson-Stevens Fishery Management Act were completed in July 2007.

Government-to government Consultation

Formal government-to-government consultation with federally-recognized traditional governments was initiated by the BLM through written correspondence in July 2002. The BLM initiated consultation with Native American tribes and Alaska Native groups to identify their cultural values, religious beliefs, traditional practices, and legal rights that could be affected by

(Adapted from USDI BLM 1991a)

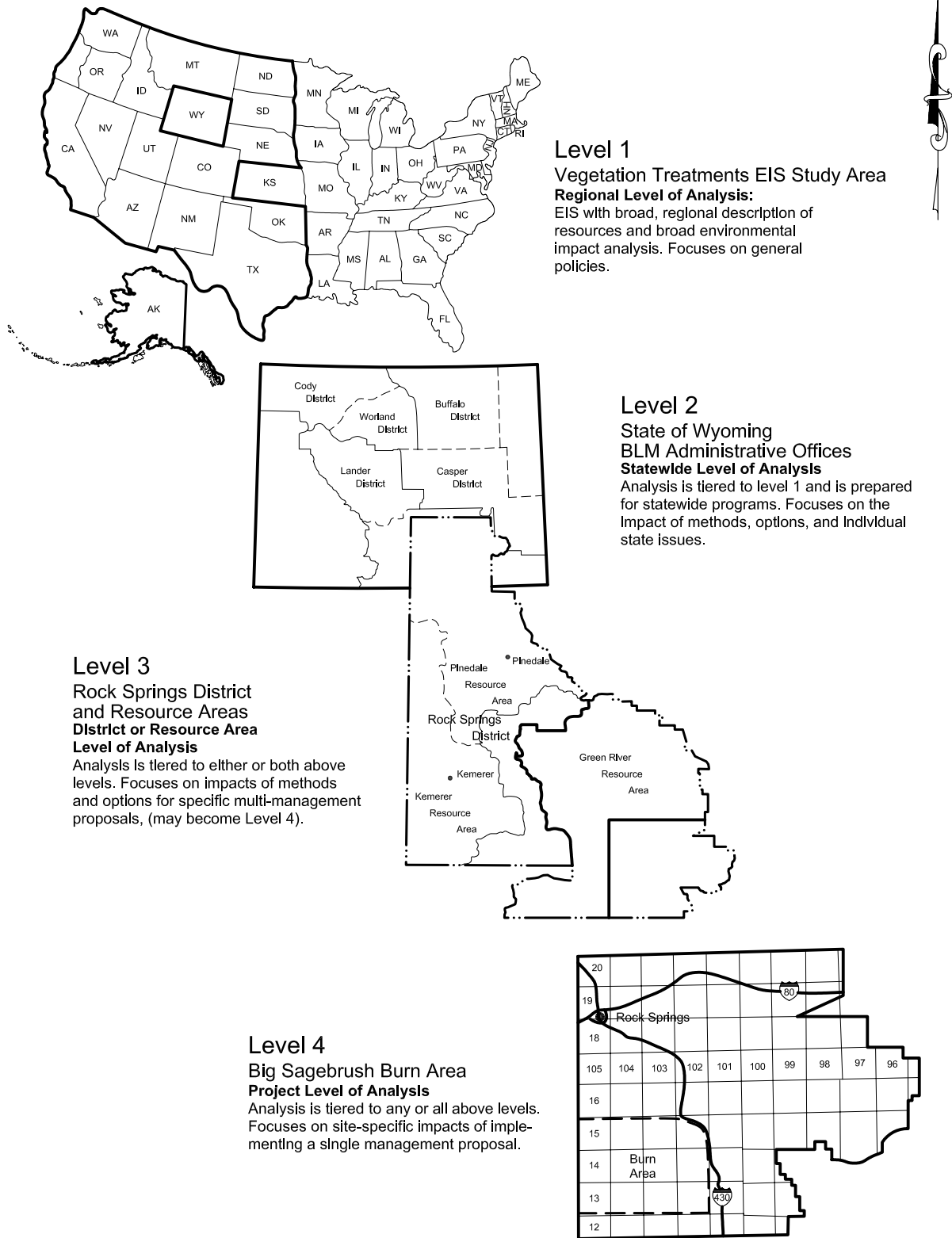


Figure 1
 Relationship of the PEIS to BLM Field Offices

BLM actions. This included sending out letters to all tribes and groups that could be directly affected by vegetation treatment activities, and requesting information on how the proposed activities could impact Native American and Alaska Native interests, including the use of vegetation and wildlife for subsistence, religious, and ceremonial purposes.

A letter was sent to all of the tribal governments that described the proposed action. The tribes were provided with information on the project and were asked to provide the BLM with any concerns they might have about any of the proposed vegetation treatments and their impacts on subsistence, religious, and ceremonial purposes and traditional cultural properties. The BLM invited the tribes to call if they had questions or wanted to set up individual meetings with the BLM. The letter also invited the tribal councils to attend the scoping meeting scheduled for their community.

The BLM conducted an Alaska National Interest Lands Conservation Act (ANILCA) § 810 Analysis of Subsistence. During this process, the BLM invited public participation and collaborated with Alaska Natives to identify and protect culturally significant plants used for food, baskets, fiber, medicine, and ceremonial purposes.

The BLM consulted with State Historic Preservation Officers as part of Section 106 consultation under the National Historic Preservation Act to determine how proposed vegetation treatment actions could impact cultural resources. Formal consultations with State Historic Preservation Officers and Indian tribes also may be required during implementation of projects at the local level.

Interrelationships and Coordination with Agencies

In its role as manager of nearly 261 million acres in the western U.S., including Alaska, the BLM has developed numerous relationships at the federal, tribal, state, and local levels, as well as with conservation and environmental groups with an interest in resource management, and members of the public that use public lands or are affected by activities on public lands.

Several federal agencies administer laws that govern activities on public lands. Federal agencies, including the Department of Defense, the Department of Energy, the National Park Service, the USFWS, the Bureau of Reclamation, the Bureau of Indian Affairs, and the

Forest Service, administer lands adjacent to or in close proximity to public lands administered by the BLM, and have vegetation management issues that are similar to the BLM's. Other agencies, such as the NMFS, the Agricultural Research Service, the Animal and Plant Health Inspection Service, the Natural Resource Conservation Service, and the U.S. Geological Survey Biological Services, play vital roles in coordination with national, tribal, state, county and private interests through their oversight and coordination responsibilities. These agencies and the BLM regularly coordinate on vegetation management and control efforts to benefit all federally-administered lands. Other local coordination includes the sharing of equipment, training, and financial resources, and developing vegetation management plans that cross administrative boundaries.

National Level Coordination

Invasive species management is coordinated by several groups at the national level. The National Invasive Species Council was formed among several federal agencies per Executive Order 13112 to develop strategies to control invasive species on federal lands. Comprised of 16 federal agencies with direct invasive plant management responsibilities, the Federal Interagency Committee for the Management of Noxious and Exotic Weeds serves to coordinate invasive plant management activities in federal lands across the United States and its territories. A related committee is the Federal Interagency Committee on Invasive Terrestrial Animals and Pathogens, which consists of 10 federal departments and agencies responsible for managing non-vegetative invasive species in terrestrial ecosystems. The BLM also coordinates with the Aquatic Nuisance Species Task Force, which is co-chaired by the USFWS and NMFS, and is responsible for coordinating efforts by the federal government and the private sector in controlling aquatic nuisance species. The BLM also produces national level strategies for invasive species prevention and management (e.g., *Partners Against Weeds: An Action Plan for the Bureau of Land Management*, and *Pulling Together: National Strategy for Invasive Plant Management*).

Fire and fuels management coordination involves both federal and state entities. The Wildland Fire Leadership Council is a cooperative, interagency organization dedicated to achieving consistent implementation of the goals, actions, and policies in the *National Fire Plan* and the *Federal Wildland Fire Management Policy*. The National Fire and Aviation Executive Board was

established to resolve wildland fire management issues on an interagency level by improving coordination and integration of federal fire and aviation programs.

The National Interagency Fuels Coordination Group, chartered under the National Fire and Aviation Executive Board, was established shortly after the *National Fire Plan* in October of 2001 under the direction and guidance of the Department of the Interior's Bureau of Indian Affairs, BLM, USFWS, National Park Service, and Forest Service. The primary purpose of the group is to provide leadership and coordination in uniting the Departments' resources and fire management programs under a common purpose for reducing risks to communities while improving and maintaining ecosystem health. The group provides assistance and guidance in the development and implementation of an effective interagency fuels management program, which includes addressing risks from severe fires in wildland urban interface communities and restoring healthy ecological systems in other wildland areas.

The National Wildfire Coordinating Group provides coordination among the following agencies and their programs: Forest Service; BLM, National Park Service, Bureau of Indian Affairs, USFWS, and the National Association of State Foresters. The BLM is also one of six federal agencies that provide scientific support for the management of fuels and wildland fires in the Joint Fire Science Program.

State and County Level Coordination

The BLM is required to coordinate with state and local agencies under several laws, including the Clean Air Act, the Sikes Act, Federal Land Policy and Management Act (FLPMA), and Section 106 of the National Historic Preservation Act. The BLM coordinates closely with state resource management agencies on issues involving the management of public lands, the protection of fish and wildlife populations, including federal- and state-listed threatened and endangered species, invasive and noxious weeds, fuels and wildland fire management, and herbicide applications. Herbicide applications are also coordinated with state and local water quality agencies to ensure that treatment applications are in compliance with applicable water quality standards and do not result in unacceptable surface or groundwater contamination.

Local and state agencies work closely with the BLM to manage weeds on local, state, and federal lands. The BLM participates in exotic plant pest councils, state

vegetation and noxious weed management committees, state invasive species councils, county weed districts, and weed management associations found throughout the West.

The Healthy Forests Restoration Act directs the Forest Service and BLM to develop an annual program of work for federal land that gives priority to authorized hazardous fuel reduction projects that provide for protecting at-risk communities or watersheds. The recommendations made by Community Wildfire Protection Plans are taken into account by the agencies in accordance with the HFRA, which gives priority in allocating funding to communities that have adopted these plans, or that have taken measures to encourage willing property owners to reduce fire risk on private property. All prescribed burning is coordinated with state and local air quality agencies to ensure that local air quality is not significantly impacted by BLM activities.

Non-governmental Organizations

The BLM coordinates at the national and local levels with several resource advisory groups and non-governmental organizations, including: BLM Resource Advisory Councils, the Western Governors' Association, the National Association of Counties, the Western Area Power Administration, the National Cattlemen's Association, the National Wool Growers Association, the Society of American Foresters, and the American Forest and Paper Association. The BLM also solicits input from national and local conservation and environmental groups with an interest in land management activities on public lands, such as The Nature Conservancy and Ducks Unlimited. These groups provide information on strategies for weed prevention, effective weed treatment methods, use of domestic animals to control weeds, landscape-level planning, vegetation monitoring, techniques to restore land health, and methods to ensure that prescribed burning does not impact the safe operation of power transmission lines.

Cooperative Weed Management Areas

Cooperative Weed Management Areas (CWMAs) are composed of local, private, and federal interests. CWMAs typically center on a particular watershed or similar geographic area in order to pool 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 CWMAs. The BLM

participates in numerous CWMAAs throughout the West, several of which are showcase examples of interagency and private cooperation in restoring land health.

Integrating Vegetation Treatments

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

The BLM treats vegetation using fire, mechanical and manual methods, biological treatments, 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. Utilizing the strengths of each allows for a more effective and environmentally sound program. When the BLM plans vegetation treatment projects, all control methods should be available for use, allowing the BLM to select the one method, or the combination of methods, that optimizes vegetation control with respect to environmental concerns, effectiveness, and cost of control.

General Site Selection and Treatment Priorities

Several factors influence where treatments will occur and treatment priorities:

- Statutory mandates, including the FLPMA, ESA, HFRA, and Taylor Grazing Act.
- Program guidance including such initiatives as the Healthy Forests Initiative, Healthy Lands Initiative, and the Great Basin Restoration Initiative.
- Goals of the Strategic and Annual Performance Plans.
- Existing risks to resources.
- Likelihood of success in restoring natural biotic communities.
- Cost-effectiveness of actions.

National priorities have been established for various BLM vegetation management programs. These priorities were developed for use in conjunction with state and local office priorities for meeting restoration goals, and address site-specific conditions and/or issues as identified in the land use plan.

The following treatment priorities have been established to promote integrated efforts across BLM resource programs that manage vegetation:

- Wildland urban interface community protection treatments that are designed to reduce the risk of wildfire to the community and/or its infrastructure developed collaboratively with the community.
- Treatments to restore or maintain healthy, diverse, resilient, and productive native plant communities.
- Special status species habitat improvement projects designed to improve or protect special status fish, wildlife, and plant habitat.
- Treatments that will be planned, implemented, and/or monitored using funding from multiple sources, both internal and external.
- Landscape treatments (>1,000 acres for mechanical and >4,500 acres for prescribed fires), 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.
- Treatments that have a high potential for woody biomass utilization.

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 and fish and wildlife, including non-game species.
- Need for subsequent revegetation and/or restoration.

The above parameters are considered before a treatment method is selected. For most vegetation treatment projects, pretreatment surveys are conducted before selecting one or more treatment methods. These surveys 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 areas within the project area. The site may have to be surveyed for listed or proposed federal threatened or endangered species and for evidence of cultural or historic sites. In some cases, areas may receive one or more treatments in combination, such as prescribed burning followed by an herbicide application, and some areas may be treated using one or more treatment methods over several years.

Issues Considered in the Decision Process and Summary of Environmental Consequences of Decision

The BLM considered the adverse and beneficial treatment effects and other issues identified during scoping and development of the PEIS in evaluating alternatives and developing the ROD. The BLM recognizes that there are risks in using herbicides, and has worked to develop SOPs and mitigation measures to reduce these risks. The BLM also recognizes that herbicides can be used to improve ecosystem health. In addition, all treatment alternatives will include the use of non-herbicide treatment methods, with their inherent risks and benefits.

Adverse Effects to Resources Evaluated in PEIS

The Preferred Alternative would not result in emissions that exceed Prevention of Significant Deterioration thresholds or National Ambient Air Quality Standards. None of the herbicides commonly used by the BLM appear to result in adverse impacts to soil. Of the herbicide active ingredients most often used by the BLM, picloram and tebuthiuron are persistent in soil for a year or more, while clopyralid, glyphosate, and 2,4-D are relatively non-persistent in soil. Potential effects to soil and soil organisms from these herbicide active ingredients and the new herbicide active ingredients appear to be minor.

Several herbicide active ingredients have been identified as groundwater contaminants (e.g., 2,4-D, glyphosate, picloram, simazine). The BLM will adhere to herbicide product labels with regards to application restrictions associated with groundwater protection and will use other SOPs and mitigation measures to further reduce risks to groundwater. Effects to surface water would be minor, and herbicide concentrations in surface water should not exceed safe levels for human health. There is potential for herbicides to be transported in surface water and impact non-target vegetation and the BLM will use buffers to reduce or avoid this risk.

Herbicides pose risks to terrestrial and aquatic vegetation. Most aquatic herbicides, and several terrestrial herbicides, are non-selective and could adversely impact non-target vegetation. Accidental spills and herbicide drift from treatment areas could be

particularly damaging to non-target vegetation, including croplands and other vegetation found on privately-owned lands near treatment areas.

Herbicides pose risks to fish and wildlife. Accidental spills and direct spraying of organisms could kill or harm animals, or affect the health and behavior of animals. Fish and wildlife could also forage on vegetation that has been treated, or prey on other animals that have been exposed to herbicides, and be harmed. All of the herbicides pose some risk to non-target terrestrial and aquatic vegetation, and damage to these plants could adversely impact habitats used by fish and wildlife. The risk for adverse health effects to individual organisms would typically be greater for threatened, endangered, and other special status species than for secure species.

Herbicides pose some risk to livestock and wild horses and burros from accidental spill, direct spray, herbicide drift, or by consuming herbicide-treated vegetation. Effects to animals could include death, damage to vital organs, decrease in growth, decrease in reproductive output and condition of offspring, and increased susceptibility to predation.

Herbicide treatments could affect cultural or paleontological resources near or on the surface, through the use of herbicide application equipment, and to a lesser extent, by the chemicals in herbicides.

Herbicide treatments could affect visual, wilderness, and recreation resources. Treatments would remove and discolor vegetation, making it less visually appealing in the short term. Treatments in wilderness may detract from the “naturalness” of the area. Recreationists could be exposed to herbicides. Recreational areas could be closed for short periods of time after application to ensure treatment success and protect the health of visitors.

Some businesses, such as recreation-based businesses and ranching operations, could be adversely affected if treatments required long-term closure of areas used for recreation or by domestic livestock. There are potential environmental justice concerns because a large number of Native peoples and other minority groups live in the West and work in industries (e.g., forest products, herbicide applicator) or conduct activities (e.g., gathering of plants for traditional uses, recreation) that could potentially expose these groups to treated areas.

A human health risk assessment was conducted to assess risks to humans from the use of herbicides. At

typical application rates, workers would not be at risk from use of herbicide active ingredients except when using diquat, 2,4-D, bromacil, diuron, hexazinone, or tebuthiuron. At maximum application rates, there are also risks associated with the use of chlorsulfuron, fluridone, and triclopyr. Public receptors would be at less risk.

Herbicide treatments could impact plants used by Native peoples for traditional lifeway uses, and the health of Native peoples. Native peoples would face risks when picking berries in areas treated with diquat. They could also face risks when consuming fish contaminated with 2,4-D, hexazinone, or picloram. Native peoples would face risk from diquat or fluridone if these chemicals were accidentally spilled or used at maximum application rates.

Beneficial Effects to Resources Evaluated in PEIS

Herbicide treatments that remove or facilitate removal of hazardous fuels from public lands would be expected to benefit the health of ecosystems in which natural fire cycles have been altered. Herbicide treatments should also reduce the incidence and severity of wildfires across the western U.S. Herbicide treatments that control populations of non-native species on public lands would be expected to benefit ecosystems by reducing the importance of non-native species and aiding in the reestablishment of native species.

Herbicide treatments could result in short-term loss of some resources, including soil, vegetation, wildlife, and livestock forage opportunities. Over the long term, loss of resource values would be slowed, and in some cases, would be reversed. Short-term losses in resource functions would be compensated for by long-term gains in ecosystem health.

Herbicide treatments would benefit soil, watershed function and water quality, and vegetation by restoring natural fire regimes and slowing the spread of weeds. With improvement in these areas, habitat for fish and other aquatic organisms would also improve.

Herbicide treatments that limit the spread of non-native plants in habitats occupied by special status species would benefit these vulnerable populations. Improvement of habitat near populations of special status species could also be extremely beneficial by providing suitable habitat for expansion of populations, perhaps aiding in their recovery.

Herbicide treatments that reduce the cover of noxious weeds on rangelands should improve the quality of forage and ensure that public lands can support healthy and viable populations of wildlife, livestock, and wild horses and burros.

In general, herbicide treatments would have short-term negative effects and long-term positive effects on non-target vegetation, soils, surface and groundwater, and visual resources. The reduction of hazardous fuels and noxious weeds on lands adjacent to or near wilderness would provide long-term benefits by reducing the likelihood that noxious weeds would spread onto these unique areas, or that a catastrophic wildfire would burn through them, thus degrading their unique qualities. Herbicide treatments would improve the aesthetic and visual qualities of recreation areas for hikers, bikers, horseback riders, and other public land users; reduce the risk of recreationists coming into contact with noxious weeds and poisonous plants; increase the abundance and quality of plants harvested from public lands; and improve habitat for fish and wildlife sought after by fishermen and hunters. In most cases, herbicides proposed for use pose few or no risks to workers or the public.

Measures to Minimize or Avoid Harm

Standard Operating Procedures and Mitigation

During preparation of the PEIS, the BLM reviewed vegetation management guidance in agency manuals and handbooks, other federal agency (e.g., Forest Service, National Park Service, USFWS, NMFS) guidance, and recommendations provided during scoping in developing SOPs and conservation measures in the PEIS and BA to provide guidance to BLM field offices in reducing the effects to resources from herbicide applications.

During preparation of the Draft PEIS, additional mitigation measures to reduce risks to natural and human resources from the use of specific herbicide active ingredients were identified as part of development of the ERAs and a human health risk assessment (HHRA) prepared in support of the Draft PEIS.

Based on concerns raised by the Services and public about the ERAs prepared for the Draft PEIS and BA

regarding adjuvants, degradates, and an issue not addressed in the Draft PEIS or BA—the potential for herbicides to be endocrine disrupting chemicals—the BLM prepared an *Evaluation of Risks from Degradates, Polyoxyethyleneamine (POEA), and Endocrine Disrupting Chemicals* for the Final PEIS. Based on this assessment, the BLM identified an additional mitigation measure in the Final PEIS:

- 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 and other aquatic organisms.

During preparation of the ROD, the BLM identified an additional mitigation measure to reduce risks to plants, animals, and humans:

- Prohibit aerial application of sulfometuron methyl.

The BLM's decision is to adopt SOPs given in Appendix B and mitigation measures identified in Table 2 of this ROD.

Comparison of the Alternatives and Development of the Decision

In general, potential direct and indirect adverse impacts and benefits from use of herbicides would be greatest under the Preferred Alternative and least under Alternative C. Fewer acres would be treated, or treatments would not be conducted aerially, under the other herbicide treatment alternatives, so risks and benefits would be intermediate between the Preferred Alternative and Alternative C.

The following discusses important factors considered by the BLM when evaluating the alternatives and selecting the alternative upon which the Decision is based, and identifying the environmentally preferred alternative.

Alternative A – Continue Present Herbicide Use (No Action Alternative)

Records of Decisions prepared in the late 1980s and early 1990s collectively allowed the BLM to use a total of 20 herbicide active ingredients in 14 western states. They did not allow the BLM to use herbicides to treat vegetation in Alaska, Nebraska, or Texas. Earlier RODs did not approve herbicides that are effective in the

control of giant salvinia, milfoils, and downy brome (cheatgrass). Earlier RODs did not provide a streamlined procedure to adopt new herbicide active ingredients that are more effective and have fewer environmental and human health risks than currently approved herbicide active ingredients. Earlier RODs provided SOPs and mitigation measures, but the level of protection afforded by these measures was determined to be less than protection provided under the other alternatives. For these reasons, the BLM did not select this alternative for the Decision.

Alternative B – Expand Herbicide Use and Allow for Use of New Herbicides in 17 Western States (Preferred Alternative)

This alternative allows the BLM to use a total of 18 herbicide active ingredients in 17 western states, including Alaska, Nebraska, and Texas.

This alternative best meets the purpose and need for the proposed action. The purposes of the proposed action are to provide BLM personnel with the herbicides available for vegetation treatment on public lands and to describe the conditions and limitations that apply to their use. The need for the proposed action is to reduce the risk of catastrophic wildfires by reducing hazardous fuels, restoring fire-damaged lands, and improving ecosystem health by: 1) controlling weeds and invasive species, and 2) manipulating vegetation to benefit fish and wildlife habitat, improve riparian and wetland areas, and improve water quality in priority watersheds.

Additional benefits accruing from implementation of the proposed action directly relate to restoration of fish and wildlife habitat and improvement of forest and ecological condition, which would meet BLM and USDI objectives set forth in the *Healthy Forests Restoration Act of 2003* and BLM Handbook H-4180-1 (*Rangeland Health Standards*) to improve the health of the nation's forests and rangelands.

The current suite of herbicides used by the BLM are ineffective in treating some species of invasive plants, particularly downy brome, which significantly increase the risk of large-scale wildfires. Under this alternative, the BLM will be able to use imazapic, an herbicide active ingredient shown to be effective in treating downy brome, and aquatic herbicide active ingredients diquat and fluridone, which are effective in treating giant salvinia and milfoils.

This alternative addresses concerns identified during preparation of the ERAs and HHRA, and raised by the public, by incorporating SOPs and mitigation measures to reduce or eliminate risks to the natural and social environment.

To address concerns regarding herbicide drift, the BLM will avoid aerial application of bromacil, chlorsulfuron, diuron, and metsulfuron methyl, and will prohibit aerial application of sulfometuron methyl, on all public lands, will avoid aerial applications of diquat in riparian areas and wetlands, and will avoid use of tebuthiuron in traditional use areas.

To address potential risks associated with R-11[®] and POEA, the BLM will 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 and other aquatic organisms.

For these reasons, the BLM selected this alternative for the Decision. The BLM determined that the risks associated with the use of herbicides under this alternative will be minor, and the benefits of herbicide use will be greater than with the other alternatives; therefore, the BLM identified this alternative as the environmentally preferred alternative.

Alternative C – No Use of Herbicides

Herbicide use would not be allowed under Alternative C. This alternative would not provide avenues for integrating all vegetation methods; research has shown that the integration of all available methods provides the soundest approach to addressing invasive plant control. Also, there would be negative impacts associated with an increased use of non-chemical treatments such as increased disturbance to soil and reduction in the ability to selectively treat for specific species.

As shown in the PEIS, risks from herbicide use are minor if the BLM follows SOPs and mitigation measures identified in this ROD. Other treatment methods also have risks, may not be appropriate for large-scale treatments, may result in greater environmental effects, and are 2 to 4 times more costly than herbicide treatments.

Although there would be no risks to humans and the environment from herbicides under this alternative, the risk of environmental damage from the spread of weeds and other invasive vegetation, and increased risk of wildfire especially due to downy brome, would be

greater under this alternative than the other action alternatives. For these reasons, the BLM did not select this alternative for the Decision and did not consider this alternative to be the environmentally preferred alternative.

Alternative D – No Aerial Application of Herbicides

This alternative was developed to address concerns regarding herbicide spray drift impacting non-target areas. Without aerial applications, large expanses of downy brome and other invasive plant species, and weed infestations in remote areas or areas with rugged terrain, would be difficult and cost-prohibitive to treat.

More acres would have to be treated in difficult terrain using ground-based methods, increasing safety concerns for ground crews. Large areas of saltcedar, Russian olive, and other woody species could not be cost-effectively treated under this alternative. Aerial application of certain herbicides is necessary to achieve goals for managing vegetation and is about 3 times less expensive than ground-based herbicide treatment methods. For these reasons, the BLM did not select this alternative for the Decision.

Alternative E – No Use of Sulfonylurea and other Acetolactate Synthase-inhibiting Active Ingredients

This alternative would not allow the BLM to use sulfonylurea and other ALS-inhibiting active ingredients approved in the earlier RODs.

Based on ERAs and the HHRA presented in the PEIS, ALS-inhibiting herbicide active ingredients are potentially less harmful to plants, animals, and humans than herbicide active ingredients that would be allowed under this alternative. Under this alternative, the BLM would lose the ability to effectively control such aggressive species as perennial pepperweed and hoary cress, and to a lesser extent salt cedar. The BLM would not be able to use imazapic, which has been shown to be effective in controlling downy brome, which cannot be effectively controlled using other herbicide active ingredients. For these reasons, the BLM did not select this alternative for the Decision.

CHAPTER 5

PUBLIC INVOLVEMENT

The public, state, local and government agencies, and non-governmental organizations provided valuable input into the decision processes used to develop the PEIS and ROD.

Development of the Draft Programmatic EIS

The BLM published a Federal Register Notice of Intent to Plan (Notice) on October 12, 2001 (Federal Register, Volume 66, Number 198, Pages 52148-52149). The BLM also released a press release concurrent with the Notice. The Notice asked the public to help the BLM identify issues and resources relevant to vegetation treatment activities on lands administered by the BLM in 17 western states, including Alaska. The Notice stated that public comments on the proposal would be accepted from October 12 through November 11, 2001. A second Federal Register Notice was published on January 2, 2002, notifying the public of the location of public scoping meetings, and extending the public comment period until March 29, 2002 (Federal Register, Volume 67, Number 1, Pages 101-102). A third Federal Register Notice was published on January 22, 2002, notifying the public of changes to the meeting schedule (Federal Register, Volume 67, Number 14, Pages 2901-2903).

All affected states issued public notices of the scoping period, which were placed in newspapers in or near locations where public meetings were held. In addition, information on the location of scoping meetings was provided by electronic mail in early December 2001, and again in early January 2002, to all members of the public that had placed their names on the electronic mailing list for the project before the date of the announcements.

Scoping Meetings

Eighteen public scoping meetings were held in 12 western states, including Alaska, during early 2002. The scoping meetings were conducted in an open-house style. Informational displays were provided at the meeting, and handouts describing the project, the

NEPA process, and issues and alternatives were given to the public. A formal presentation provided the public with additional information on program goals and objectives. This presentation was followed by a question and answer session. The BLM received 1,034 requests to be placed on the project mailing list from individuals, organizations, and government agencies, and 381 written comment letters or facsimiles on the proposal. In addition, the public provided comments on the project at the public scoping meetings; over 2,800 catalogued individual comments (written and oral) were given during public scoping. In many cases, multiple respondents submitted the same comment. A *Scoping Comment Summary Report for the Vegetation Treatments Programmatic EIS* was prepared that summarized the issues and alternatives identified during scoping. This document was made available to the public in July 2002.

Newsletters and other Mailings

The BLM prepared three newsletters during preparation of the Draft PEIS. These newsletters were made available to those individuals that provided their names and addresses to the BLM during scoping, and to BLM state offices and local field offices for distribution to visitors.

In July 2005, the BLM sent out a business reply mail request to those on the mailing list to let the BLM know if they would like to remain on the mailing list and if they would like to receive a printed and/or CD copy of the Draft PEIS, and a supporting *Draft Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report (PER)* and *Draft Biological Assessment for Vegetation Treatments on Bureau of Land Management Lands in 17 Western States*. In April 2007, the BLM sent out a business reply mail request to those on the mailing list to let the BLM know if they would like to remain on the mailing list and if they would like to receive a printed and/or CD copy of the Final PEIS, PER, and BA.

Public Review and Comment on the Draft Programmatic EIS

The Notice of Availability (NOA) of the *Draft Vegetation Treatments using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* was published in the Federal Register on November 10, 2005 (Federal Register, Volume 70, Number 217, Pages 68474-68475). The public comment period was originally scheduled from November 10, 2005, through January 9, 2006, however, a notice extending the public comment period through February 10, 2006, was published in the Federal Register on January 20, 2006 (Federal Register, Volume 71, Number 13, Pages 3292). Public notices announcing the comment period were placed in newspapers with circulation in or near locations where public meetings were held. The BLM issued a press release on November 10, 2006, notifying the public that the Draft PEIS, PER, and BA were available for public review, and providing the schedule for public comment hearings. Information on the Draft PEIS, PER, and BA was also posted on the interactive website (<http://www.blm.gov>). The public was able to access the website to download a copy of the Draft PEIS, PER, BA, and supporting documents.

Ten public hearings were held in the western U.S. for the BLM to provide an overview of the alternatives and to take public comments. Nearly 3,000 comments were received on the Draft PEIS, PER, and BA. These included letters, electronic mail, and facsimiles, and comments provided at public hearings in Boise and Sacramento (no public testimony was given at the other public hearings). A summary of the comments received and specific comments and responses are presented in Volume III of the Final PEIS.

Development of the Final Programmatic EIS and Preferred Alternative

After completion of the public hearings and closure of the public comment period on the Draft PEIS, the PEIS core team, resource staff, and management met to review the comments and alternative proposals and to develop the BLM's final Preferred Alternative. No alternative proposals were received from the public, although the BLM did receive numerous comments in

support of all four of the proposed actions (alternatives B, C, D, and E).

Six hundred fifty-seven electronic mails, 77 facsimiles, and 234 letters were received on the Draft PEIS, PER, and BA. Each of the comment letters/electronic mails/facsimiles was read and substantive issues were identified. In addition, the BLM received over 2,000 form letters/electronic mails/facsimiles in response to solicitations from advocacy groups, and many of these were identical statements or slight variations thereof; these were also read and substantive issues identified. A total of 1,808 substantive comments were identified and responded to.

The BLM took these comments into consideration when reviewing the alternatives developed for the Final PEIS. Based on these comments, the BLM developed a final Preferred Alternative for the Final PEIS. This alternative is similar to the draft Preferred Alternative identified in the Draft PEIS in terms of numbers and types of acres that would be treated using herbicides, but does include new SOPs and mitigation measures to reduce the risks associated with the use of herbicides.

Public Review and Comment on the Final Programmatic EIS

The NOA of the *Final Programmatic Environmental Impact Statement and Environmental Report for Vegetation Treatments on Public Lands Administered by the Bureau of Land Management in the Western United States, Including Alaska* was published in the Federal Register on June 29, 2007 (Federal Register, Volume 72, Number 125, Pages 35718-35719). The public review period was from June 29, 2007, through July 30, 2007.

A total of 36 individual written comment letters and 3 facsimile comment letters were received on the Final PEIS, PER, and BA. In addition, 15 mailed and 136 facsimiled petition letters originating from a single advocacy group's website were received by the BLM. The advocacy group also mailed a box containing an additional estimated 2,500 copies of the same petition letter. The petition letters were electronically-generated and were not considered unique comment letters requiring further agency consideration or response.

The PEIS core team and management reviewed the comments on the BLM's Preferred Alternative and other issues raised by the public. A review of the comment letters received identified no substantive or significant new issues not previously addressed in the Draft or Final PEIS, PER or BA. No new information

was identified that indicated that the BLM should modify the final Preferred Alternative or alter the decision to select the Preferred Alternative in this ROD.

