



United States  
Department of  
Agriculture

Forest  
Service

May 2012



# Invasive Plant Treatments

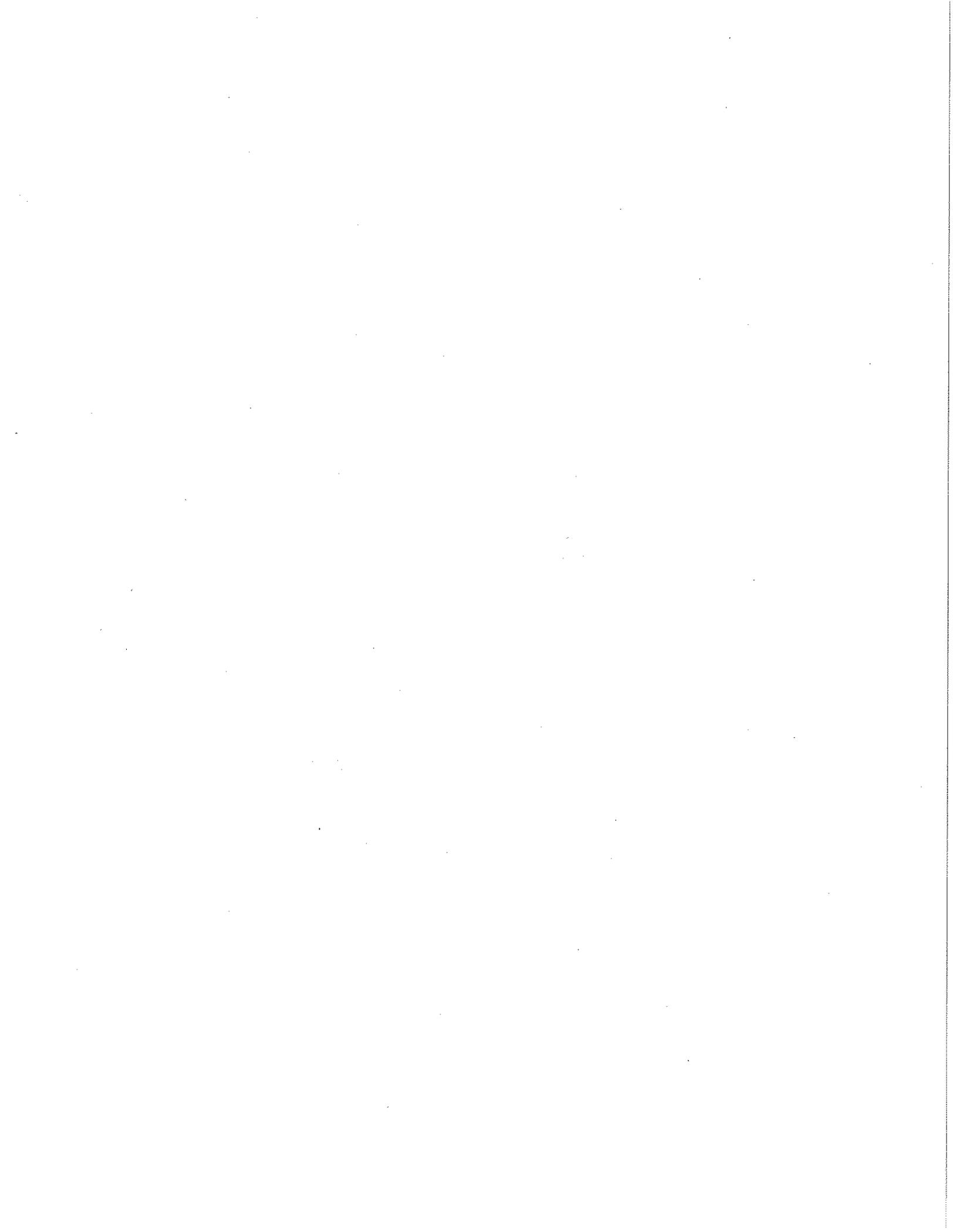
## Record of Decision

### Deschutes and Ochoco National Forests, Crooked River National Grassland

Deschutes, Jefferson, Klamath, Lake, Crook, Wheeler, and Grant Counties, Oregon

St. John's-wort (*Hypericum perforatum*) on the Sisters Ranger District





---

**RECORD OF DECISION  
INVASIVE PLANT TREATMENTS  
U.S. FOREST SERVICE  
DESCHUTES AND OCHOCO NATIONAL FORESTS AND CROOKED RIVER  
NATIONAL GRASSLAND  
CROOK, DESCHUTES, GRANT, JEFFERSON, KLAMATH, LAKE AND  
WHEELER COUNTIES, OREGON**

---

## TABLE OF CONTENTS

SUMMARY.....	3
BACKGROUND.....	4
DECISION.....	5
DECISION RATIONALE.....	7
PUBLIC INVOLVEMENT.....	13
ALTERNATIVES CONSIDERED.....	15
FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS.....	18
THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE.....	28
ADMINISTRATIVE REVIEW (APPEAL) OPPORTUNITIES.....	29
IMPLEMENTATION DATE.....	30
CONTACT.....	30
LITERATURE CITED.....	32
APPENDIX 1. PROJECT DESIGN FEATURES.....	33

---

## SUMMARY

Based on our review of the Final Supplemental Environmental Impact Statement (FSEIS), we have decided to implement Alternative 2, which will authorize invasive plant treatments on approximately 14,500 acres of mapped infestations, along with treatment of new sites or sites that are not identified in the FSEIS and that are analyzed through the Early Detection/Rapid Response strategy. Responsible officials for this project are the Forest Supervisor of the Deschutes National Forest, and the Forest Supervisor of the Ochoco National Forest and Crooked River National Grassland, who are jointly approving the decision. This Record of Decision (ROD) includes a non-significant amendment to the Ochoco National Forest and Crooked River National Grassland Land and Resource Management Plans (LRMPs) to align plan direction with the R6 2005 Invasive Plant Program ROD (USFS 2005b).

We are approving site-specific invasive plant treatments throughout the Deschutes National Forest, the Ochoco National Forest, and the Crooked River National Grassland. Invasive plants are widely distributed across the Forests; treatment is proposed in all management areas. The majority of the project area is located in Deschutes, Jefferson, Crook, and Klamath Counties. Smaller portions are in Wheeler, Grant, and Lake Counties. The Forests total a little more than 2.5 million acres (see Figure 1).

Invasive plant treatment methods include a combination of manual (e.g., hand pulling, cutting), mechanical (e.g. weed whacking), cultural (solarization), burning, and herbicide (e.g., ground-based broadcast spraying, spot spraying) treatments. These methods are described in the FSEIS (pp. 33-36). The treatments will be implemented over the next fifteen years according to Project Design Features (PDFs) that minimize or eliminate adverse effects. Of the 14,500 acres, about 750 acres can be effectively treated using manual, biological, or cultural methods; herbicides are not part of the initial treatment plan on these acres. Otherwise, herbicide use is part of the integrated prescription on known sites.

New detections of invasive plant species or other invasive plant populations that are not identified in the FSEIS are approved for treatment under the Early Detection/ Rapid Response strategy (EDRR). The EDRR strategy will require annual review by a Forest Service team and approval by a Forest Service line officer; new detections will be treated using methods approved by this Record of Decision only if the associated site conditions are within parameters analyzed in the FSEIS and if treatment is consistent with the Deschutes and Ochoco Forest Plans, as amended. Application of the EDRR strategy will include notification of adjacent landowners, partners, the general public, regulatory agencies, and the Tribes; consistency with the Endangered Species Act and other environmental law will be maintained (see FSEIS pp. 499-500 and Appendix F). New invasive plant detections that are not within parameters analyzed in the FSEIS will be subject to a new analysis and decision consistent with the National Environmental Policy Act (NEPA).

All invasive plant treatments will be implemented in conjunction with on-going invasive plant management efforts, including prevention practices; outreach and education; and use of grants, agreements, contracts, agency employees and volunteers to carry out the program.

We have reviewed the Invasive Plant Treatments FSEIS and associated appendices, including public comment on the draft SEIS. We believe there is adequate information within these documents to provide a reasoned choice of action. We are fully aware of the adverse effects that cannot be avoided that are associated with the Selected Alternative (FSEIS pp 495 – 496). We are also aware of the concern some members of the public feel for invasive plant treatments, and have balanced these concerns against the need for long-term reduction in invasive plant populations to support sustainable habitats for fish, wildlife and plant populations in the two National Forests and the National Grassland. Implementing the Selected Alternative will cause no measurable unacceptable cumulative impacts to any resource.

---

## BACKGROUND

Invasive species have been declared as one the four main threats to ecosystem health (USDA Forest Service 2003). Invasive plants are defined as “non-native plants whose introduction do or are likely to cause economic or environmental harm or harm to human health” (Executive Order 13112). Invasive plants displace or alter native plant communities and cause long-lasting economic and ecological problems within and outside the National Forests. Invasive plants increase fire hazard, degrade fish and wildlife habitat, compete with and displace native plants including rare plants, impair water quality and watershed health, and adversely affect a wide variety of other resource values such as scenic beauty and recreational opportunities. With their strong reproductive and competitive abilities, invasive plants have spread rapidly across the land, unimpeded by ownership or administrative boundaries. Invasive plants are displacing native plants and degrading habitats, resulting in loss of integrity of natural areas. Existing populations can spread into neighboring lands.

To update management direction to respond to the threat of invasive plants, the Pacific Northwest Region published the programmatic *Pacific Northwest Region Invasive Plant Program: Preventing and Managing Invasive Plants FEIS* in April 2005 (USDA Forest Service 2005a). The accompanying *Record of Decision* (USDA Forest Service 2005b) was published October 2005 (also referred to as the R6 2005 FEIS and ROD). The R6 2005 ROD amended all Forest Plans in the Region, adding new direction for containing, controlling or eradicating invasive plant species using prevention practices, various mechanical and hand treatments, and chemical treatments. The invasive plant prevention standards include requirements for applying invasive plant practices to all land uses and activities; specifically cleaning heavy equipment; using weed-free straw and mulch; using pelletized or certified weed free feed; and inspecting active gravel, fill, sand stockpiles, quarry sites, and borrow material. In addition, the Forests employ local practices to prevent the invasion and/or spread of invasive plants (See FSEIS, Appendix G). These practices are part of the invasive plant management program and will occur regardless of alternative selected for this project, including no action.

The Deschutes and Ochoco National Forests currently are treating about 6 percent of the total number of currently mapped sites (1,892) with herbicides; of the approximately 1,600 acres per year that were treated between 2000 and 2005, about 275 acres per year were treated with herbicides. This level of treatment is not sufficient to control invasive plants; “control” is defined in the R6 2005 FEIS as the point when acres controlled are equal or greater than acres of spread each year (R6 2005 FEIS pp. 4-8).

Herbicides have been effective at reducing invasive plant populations to a point at which they can be hand pulled. For example, a 5+ acre patch of yellow starthistle on the Ochoco National Forest was reduced to 1/10th of an acre in four years (1999-2002) of spraying the site with picloram. This small site is now annually monitored and individual plants are hand-pulled. Herbicide treatments along Highway 97, a major thoroughfare for motor vehicles (often a vector for spread of invasive plants), have resulted in a reduction of spotted knapweed; 78 acres were treated in year 2000 and by 2005, 8 acres needed treatment. The number of knapweed plants on the Deschutes National Forest has been documented to be reduced following a combination of herbicide and manual treatments (see FSEIS p. 108).

In contrast, manual control on large, dense weed sites has led to little change in weed density or perimeter. For example houndstongue, a biennial species, in the Roba area of the Paulina Ranger District (Ochoco National Forest) has been treated manually by Forest Service personnel, youth crews and volunteers for the past 9 years. For the Roba area alone, more than 17,842 person hours have been expended on manual control, at an approximate cost of \$322,860 yet the houndstongue population continues to expand (see FSEIS p. 108).

In 1998, there were approximately 2,024 acres occupied by invasive species on the Deschutes and Ochoco National Forests and Crooked River National Grassland; today approximately 14,500 acres are occupied by invasive species. Current management direction to use herbicides as a last resort (Ochoco NF LRMP 1998 Amendment) resulted in an emphasis on manual and biological control methods. Despite

---

diligent efforts using these methods of control, invasive plants have spread on the Forests and Grassland at a rate of 1,200 acres per year. Our experience since 1998 demonstrates that herbicides are necessary, in combination with other methods, to maximize effectiveness of treatment.

Invasive plants are dynamic and their spread is unpredictable, and treatments are more effective and involve less inherent environmental risk when populations are small and not well-established. Weed infestations change in density and location; even the most complete inventories will never identify all infested areas. New infestations and new species are usually high priority for treatment. There is a need to provide a mechanism to allow quick response to changing invasive plant infestations. Flexibility is needed so that expanded and/or newly identified invasive plant sites can be treated in a timely manner. Many current infestations occupy small areas less than one acre. Alternative 2 allows for the action needed to control or eradicate these sites quickly before they grow too large, or become too costly or impractical to manage. These infestations will continue to spread every year that an effective treatment is not applied.

## **DECISION**

After careful review and consideration of the public comments and the analysis disclosed in the FSEIS and project file, we have decided to select the Proposed Action (Alternative 2) as described in Chapter 2 of the FSEIS. We selected Alternative 2 because it is the most likely of the three alternatives to control invasive plants that are degrading National Grassland and National Forest System lands, including special areas and habitat for plants and animals. We considered the issues and concerns raised by those who participated and commented during this analysis in making this decision. Our conclusion is based on a review of the environmental analysis that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk (FSEIS pp. 496-497).

Invasive plant treatments will be capped at 16,000 acres annually and 240,000 acres for the life of the project. These caps include the sum of EDRR sites as well as known sites.

### Invasive Plant Treatment

Our decision approves treatment of the 1,892 inventoried invasive plant sites (across 14,547 acres) within 289 Project Area Units (PAUs). These sites and PAUs occur primarily along roads. Integrated weed management methods will be used including herbicide methods alone or in combination with non-herbicide methods (manual, mechanical and cultural) on a total of 13,814 acres. Target species include, but are not limited to, houndstongue, burdock, scotch broom, whitetop, yellow star-thistle, Canada thistle, field bindweed, knapweeds, leafy spurge, yellow flag iris, Dalmatian toadflax, reed canarygrass, ribbongrass, butter and eggs and others. These invasive species pose a threat to important forest and rangeland resources, including native riparian and grassland vegetation. Selective herbicide application using lower-risk herbicides, such as aquatic formulations of triclopyr, imazapyr and glyphosate, can occur up to the water's edge. Aquatic glyphosate and aquatic imazapyr are allowed to be ground-based broadcast sprayed within 50 feet of streams. Glyphosate, picloram and sethoxydim are not allowed to be broadcast sprayed within 300 feet of perennial water; they may be spot-sprayed or applied by hand between 50 feet and 300 feet of perennial water.

Treatments have been designed to reduce the adverse effects to fish, wildlife, and sensitive plant species by implementing Project Design Features (PDFs) 1-56 and 63-97 (FSEIS, Chapter 2.4 and attached to this ROD in Appendix 1), while utilizing the most effective means to maximize reduction of the invasive plants targeted. Appendix A of the FSEIS describes the site-specific treatment prescriptions. PDFs will be implemented through project design and layout, contract specifications, contract administration, and monitoring by Forest Service officers. We find that the PDFs adequately minimize or eliminate adverse effects in accordance with Forest Plan standards. These PDFs are the result of interdisciplinary work since 2003 and are being applied to invasive plant treatment projects across the Pacific Northwest Region of the

---

Forest Service. The PDFs are based on previous invasive plant treatment projects, field experience, consultation with regulatory agencies, and scientific reasoning (Desser 2008). Table 32 in the FSEIS describes how the PDFs would minimize or eliminate effects to non-target plants. Herbicides and surfactants will be used at rates low enough, or methods selective enough, to avoid exposures over a threshold of concern for human health (see FSEIS Chapter 3.8).

#### Early Detection / Rapid Response

We have decided to authorize the treatment of new and/or previously unanalyzed detections using the EDRR strategy. We have decided to include EDRR in our decision because it will allow us the flexibility to treat new invasive plant infestations before they become large, therefore reducing the time and cost associated with treatment as well as the potential damage to the ecosystem from the new infestation. Mehta (2007) found that early detection and rapid response increases managers' chances to successfully restore invasive plant sites, which supports our decision. EDRR will be applied in cases where a review team determines that environmental effects are consistent with those disclosed in the FSEIS, as described in Appendix F of the FSEIS.

#### Site Restoration

Each invasive plant site has a restoration objective, which is part of the long-term strategy to reduce invasive plants and to reduce the need for herbicide treatments in the future. Passive restoration assumes the treatment area will revegetate from existing non-invasive vegetation without active work such as mulching, planting, or seeding; passive restoration is also assumed on road shoulders or other areas that do not require revegetation. Active restoration is proposed in certain site-specific instances and those are described in FSEIS Appendix A, Table A-3. Appendix E of the FSEIS provides guidelines for revegetation planning.

#### Monitoring

Monitoring for this project is defined by national policy and Forest Plan guidance. Forest Service policy requires annual reporting of treatment effectiveness in the Forest Activity Tracking System (FACTS) database. FACTS protocols require at least half of all treatment areas to be visited and treatment effectiveness and efficacy reported. This means that each site may be visited several times in the event that repeated treatments are needed.

The R6 2005 ROD Monitoring Framework (R6 2005 ROD Attachment 2) includes implementation / compliance and effectiveness monitoring components. Documentation regarding compliance may be reviewed as part of the regional framework. In addition, high risk projects may be monitored during operations. The Regional Monitoring Framework will be applied as directed by the Terms and Conditions listed in the Biological Opinions from the US Fish and Wildlife Service and the National Marine Fisheries Service, as described in the "Findings Required by Other Laws and Regulations" section of this ROD. Details of the Monitoring Framework are found in the 2005 R6 FEIS Chapter 2 and Appendix M, the R6 Invasive Plant Monitoring Plan (2011) and FSEIS Appendix F.

In addition, changes to upland and riparian native plant communities following treatment will be observed over time. Changes in plant non-target species composition and abundance will be specifically documented in Research Natural Areas treated under this decision.

Frequency and extent of monitoring would depend on annual funding, with the top priority issues and treatment sites being accomplished first. Monitoring required by this decision is included in current funding estimates described in Chapter 3.10.

---

## Forest Plan Amendment

We have decided to include a non-significant amendment to the Ochoco National Forest and Crooked River National Grassland LRMPs. The proposed amendment removes standards that were replaced by the management direction provided by the Pacific Northwest Region: Preventing and Managing Invasive Plants Record of Decision (2005). Removing these standards will allow, where appropriate, careful and targeted herbicide use as part of an integrated weed management program. The amendment also changes two standards and guidelines of the Ochoco National Forest and Crooked River Grassland LRMPs to allow, where appropriate, careful and targeted herbicide use to treat invasive plants as part of an integrated weed management program. The amendment aligns the LRMPs with the standards and guidelines adopted with the R6 Invasive Plant ROD (USFS 2005b). The specifics of this Forest Plan amendment will be discussed in the "Findings Required by Laws and Regulations" section of this Record of Decision.

## **DECISION RATIONALE**

This section of the Record of Decision presents the rationale behind our choice for Alternative 2 and our reasons for not selecting any of the other alternatives. We discuss our decision relative to purpose and need, environmental issues, and public comments to the project. In summary, we selected Alternative 2 because it allows for the most effective treatments that will reduce acreage of invasive plants. It is the most likely of all the alternatives to control invasive plants that are degrading areas on the Forests and Grassland and it provides the ability to quickly respond to newly discovered invasive plant sites. The Ochoco Forest Plan and Crooked River National Grassland Plan amendments will make these plans consistent with the 2005 FEIS. The FSEIS displays modeled results showing that under the selected alternative, upland target populations could be reduced by 40 percent and riparian target species reduced by 88 in the first five years of treatment (FSEIS pp. 111-117).

We selected Alternative 2 because it best meets the purpose of this project: control of invasive plants in a cost-effective manner that complies with environmental standards (relevant laws, policies, plans). Invasive plant treatments are needed to eradicate, control, contain, or suppress target species at approximately 1,892 invasive plant sites (14,500 acres) on the Forests and Grassland; without effective treatment, these sites would continue to expand as they have since 1995.

Alternative 1 was not selected because it would have provided too few options to manage invasive plants. With few effective control methods and the small acreage of sites that would have been approved for treatment under Alternative 1, invasive species would continue their spread across the Forests and Grassland at an estimated increase of 8 - 12% per year. Alternative 1 would minimize potential herbicide exposure to non-target plants and animals because fewer acres would be approved for herbicide use. However, threats to these plants and animals from invasive plants would not be abated. Under Alternative 1, approximately 13,640 acres of invasives would still be untreated five years from now. This is nearly twice as many as in the selected alternative. About 98 percent of the existing upland target populations and about 67 percent of the riparian target populations would not be effectively treated.

Alternative 1 would not control invasive plants in a cost-effective manner, nor would it comply with management direction for invasive plants. It would not take advantage of the advances made both in herbicide effectiveness and safety, because it would not allow the full suite of herbicides approved by the R6 Invasive Plant ROD (2005b). Alternative 1 is the least effective of the alternatives (FSEIS pp. 111-117). Invasive plants would have continued to spread within the Forests and Grassland as would the negative effects associated with them.

---

In response to public comments, we directed the interdisciplinary team to develop an alternative that would reduce the use of herbicides near water; this new alternative became Alternative 3. Alternative 3 was not selected because implementation under Alternative 3 would cost about \$500,000 more than under the Proposed Action<sup>1</sup> and would be less effective in controlling invasive plants on 260 acres of riparian areas. Alternative 3 would apply herbicide treatments to 260 fewer acres within 300 feet of water and would not permit broadcast spraying within 300 feet of water; it would apply no herbicides within 10 feet of water (see Table 16 in Chapter 2 of the FSEIS). Alternative 3 reduced the risk of potential impacts related to herbicide use by restricting what herbicides could be used near water and imposing a buffer where no herbicides could be used at all, but at the expense of reducing the effectiveness of invasive plant treatment on 260 acres of emergent invasive species such as reed canarygrass and ribbongrass; manual and mechanical methods may not be effective on the invasive plants that are growing within 10 feet of perennial water (FSEIS p. 117). Ribbongrass and canary reedgrass are rhizomatous species that are difficult to control by manual and/or mechanical methods; FSEIS model results predict that after 5 years, about half the current acreage of riparian target species would remain without using herbicide treatments (Table 26 on FSEIS p. 116). Ribbongrass and reed canarygrass are problematic in the riparian environment because they replace native vegetation and decrease the ability of riparian hardwoods to become established and thrive, which can reduce stream shade (FSEIS p. 142). LaVergne and Molofsky (2004) report that reed canarygrass invades quickly and its presence impacts the structure of natural habitats. Reed canarygrass can persist as floating mats, which then form numerous nodes with adventitious roots. Fragmentation at these nodes enhances the spread of the floating mat until it completely chokes water circulation in ponds and along shores. By growing vigorously on stream banks, reed canarygrass also increases sediment deposition, which further limits water circulation. Manual and mechanical methods to control ribbongrass may result in unwanted environmental effects including short-term (up to 6 months) contribution of sediment into the water and the downstream spread of the invasive plant as rhizomes may fall into the water and be carried to new sites (FSEIS p. 167).

Although the risk of herbicides entering the water is eliminated with Alternative 3, the tradeoff is a reduction in effectiveness of treatment and higher cost. The Proposed Action was designed to minimize potential adverse effects to the aquatic environment. The risk that herbicide treatments under Alternative 2 will affect riparian and aquatic systems is acceptably low, given the PDFs and buffers included in Alternative 2, while the risk that invasive plant populations in riparian areas will affect riparian and aquatic systems is unacceptably high. The added protection provided by additional buffers and restrictions of herbicide treatments in riparian areas under Alternative 3 does not outweigh the benefits of effective invasive plant reduction in riparian areas that will occur under Alternative 2.

The Invasive Plant Treatments FSEIS documents the analysis and conclusions upon which this decision is based.

### Treatment Effectiveness

Alternative 2 was selected because it offers the most effective suite of treatments for the situations known on the forests. The public and other agencies expressed a strong desire to see the Forest Service utilize the methods necessary to make substantial progress in effective treatment of invasive plant species. Some members of the public felt that herbicide treatments were the most effective and efficient treatment method. Treatment effectiveness was a key component in the development of the proposed action and is discussed in detail in Chapter 3.3.

Treatment effectiveness is increased as the number of possible tools increases (R6 2005 FEIS, 4-15), thus Alternatives 1 and 3 would be less effective than the Selected Alternative 2. This is because some species

---

<sup>1</sup> Alternative 2 is estimated to cost \$2,205,290 to treat all sites in the first year while Alternative 3 would cost \$2,724,590 (FSEIS Table 18).

---

(e.g. medusahead and ribbongrass) and some types of infestations (e.g. large and densely populated) are difficult to effectively treat without the use of herbicides, to the point that non-herbicide treatments become counter-productive or cost-prohibitive (FSEIS pp. 61, 62, 402). Herbicides are often the only known effective way to control, contain, or eradicate some species (FSEIS p. 106, Appendix B). The more herbicides available for each situation, the less likely repeated treatments on the Forest will lead to herbicide resistance (FSEIS Table 18 and p. 113, R6 2005 FEIS p. 3-93, 3-94).

In addition, by implementing effective treatments as early as possible, less treatment will eventually become necessary and we will reduce the amount of herbicides used over time at known sites (FSEIS pp. 123, 126). Together with applying invasive plant prevention practices to projects and activities on the Forests and Grassland, implementing the selected alternative will facilitate meeting Forest Plan Goal #1 for invasive plants: "Protect ecosystems from the impacts of invasive plants through an integrated approach that emphasizes prevention, early detection, and early treatment. All employees and users of the National Forest recognize that they play an important role in preventing and detecting invasive plants."

Some members of the public have questioned why herbicides are a part of both action alternatives, and why prevention practices are not prescribed for this project. As stated in the public comment responses, new invasive plant sites have continued to spread due to several factors: 1) the lengthy NEPA process, which allows invasive plants to increase in size making them more difficult to treat; 2) we have not had the ability to employ an Early Detection/Rapid Response strategy that allows rapid control of newly discovered sites while they are small and while treatment strategies would affect fewer acres; and 3) we currently have limited ability to use the most effective tools for each species and situation. The R6 2005 ROD amended Forest Plans in Region 6 to stipulate that prevention standards and local prevention guidelines be applied to land use projects in the planning and implementation stages. Examples of our prevention efforts include setting up vehicle washing stations for all large wildfires, requiring timber sale contractors to clean logging equipment before leaving roads, and requiring weed-free hay in wilderness areas (see FSEIS Appendix G for more detail on the Forests and Grassland invasive plant prevention practices). Prevention strategies have been employed but prevention alone has not been effective in solving the existing invasive plant problem. More effective and efficient treatments are necessary to eliminate existing invasive plant populations.

Actions that may be taken to prevent the spread of invasive plants relative to specific land uses are not connected actions to this project. This project would be needed regardless of decisions made regarding access and travel management and other activities. As shown in Table 4 of the FSEIS, about 70% of the project areas occur along roadsides, many miles of which are major thoroughfares such as State Highways 97, 58 and 26. Vehicles travelling through the Forests and vehicles used by forest visitors are a continuing vector of weed introduction and spread, and under all alternatives, the Forest Service will continue to use non-herbicide methods where they are cost-effective and prevention measures will be applied to land uses and activities according to forest plan standards (see FSEIS Appendix G).

#### Effects to Native Vegetation

Alternative 2 was selected because it minimizes adverse effects on native vegetation. The analysis in Chapter 3.4 concludes the selected alternative would provide the most options for effective and efficient treatment of invasive plants that are threatening sensitive plant populations and their habitat. PDFs minimize or eliminate effects from treatments to sensitive and survey and manage plant species (FSEIS pp. 52-53, 123-176; Table 34). More herbicide options provide an increased ability to select an herbicide that has a lower risk to non-target plants of concern.

When considering invasive plant treatments, particularly the use of herbicides, there is concern over what harm the non-target plants may incur. Culturally significant, sensitive, or survey and manage plants are of particular concern. Different herbicides have varying degrees of potency and selectivity, and application methods vary in the potential for off-target effects.

---

As invasive plants decrease, native plants will benefit from increased available habitat. Alternative 1 has less potential for negative impacts to non-target vegetation from herbicide treatments than does the selected alternative, as does Alternative 3, to a lesser degree; however, these alternatives would have a corresponding decrease in treatment effectiveness (FSEIS pp. 153, 165 and 172). We find that while there may be isolated impacts to non-target vegetation under the selected alternative, these effects would be short-term and would not affect native plant populations, while the benefits to native plant populations from reduction in invasive plants will be greater than the potential benefits under Alternatives 1 and 3. The benefits to the sustainability of native plant populations under the selected alternative outweigh the risk of isolated and short-term effects to non-target plants.

### Effects to Soil

Alternative 2 addresses concerns about soils. The selected alternative would not result in any negative effects to soil productivity. All three alternatives have a low risk of toxicity to soil microbes and effects to soil productivity. The selected alternative has a lower potential for soil erosion due to treatment methods than would either Alternative 1 or Alternative 3, because both Alternatives 1 and 3 would emphasize manual treatments that disturb soils, while the selected alternative includes staggered herbicide and follow-up treatments, with less soil disturbance (see FSEIS PDF #43-50, Table 18, and Soils discussion in Chapter 3.5).

### Water Quality & Aquatic Species

Alternative 2 addresses concerns about water quality and aquatic species. Members of the public are concerned the use of herbicides in riparian areas has the potential to contaminate water and cause mortality to fish and other aquatic species. They also expressed concern about contamination to drinking water. Non-herbicide treatment methods also have potential for impacting water quality, fish and other aquatic species by creating sediment, disturbing riparian structure, and removing vegetation along streams. To respond to this issue, the selected alternative includes PDFs that protect drinking water quality, aquatic organisms, and their habitats (see FSEIS Chapter 2.4). Domestic wells and municipal water intakes would be buffered and there would be coordination with water users in the event herbicides are needed.

In addition, herbicide treatment for existing sites as well as future treatment under EDRR will be subject to an annual limit in areas adjacent to water:

- In areas above bankfull but within the aquatic influence zone<sup>2</sup>, herbicide application is limited to 10 acres per year per 1.5 miles of stream within any 6<sup>th</sup>-field subwatershed.
- In areas below bankfull, herbicide application is limited to 1 acre per year within any 6<sup>th</sup>-field subwatershed.

The analysis demonstrated that in no case will the proposed application of any herbicide result in further degradation of waterbodies that are categorized as water-quality limited by the Oregon DEQ (303(d)-listed). PACFISH/INFISH and Northwest Forest Plan riparian management objectives, standards, and guidelines would be met. The FSEIS describes how the invasive plant treatments will restore riparian conditions where they have been degraded by invasive plant species (FSEIS pp. 209-256).

Alternative 3 would have reduced the amount of herbicide that would be used in riparian areas and therefore there would have been less potential herbicide exposure. Alternative 2 will allow herbicide treatment on 260 acres that would have been treated with non-herbicide methods under Alternative 3. There would have been additional limitations under Alternative 3 resulting in slightly less risk from

---

<sup>2</sup> The aquatic influence zone is defined as the inner half of a riparian reserve or riparian habitat conservation area on Class 1, 2, 3, and 4 streams, lakes and wetlands.

---

herbicide exposure, slightly greater risk from manual/mechanical treatments and less cost-effectiveness. On the whole, the increase of effectiveness (and better chance of riparian restoration) associated with Alternative 2 outweighs the slight increase in risk compared to Alternative 3. This is even more pronounced between Alternative 2 and Alternative 1, where riparian restoration would be unlikely, and the risk to riparian areas from herbicides would be nearly eliminated.

Consultation with the Fish and Wildlife Service (FWS) was completed for bull trout (federally listed Threatened species) and National Marine Fisheries Service (NMFS, also referred to as NOAA Fisheries) was completed for Mid-Columbia River steelhead trout (federally listed Threatened species). A Biological Assessment (BA) evaluating the selected alternative was sent to the FWS and NMFS (May 6, 2009). The BA provided analysis and rationale for the determination that the selected alternative may affect and is likely to adversely affect (LAA) bull trout and steelhead trout, due to possible disturbance, trampling, and reduction in cover from treatment of ribbongrass, reed canarygrass, and yellow iris on the Metolius River, as well as possible future treatments of emergent invasive plants along other waterways that are identified and treated under the EDRR process. The selected alternative may affect and is likely to adversely affect critical habitat for bull trout and steelhead and may adversely affect Essential Fish Habitat for Chinook and coho salmon due to short-term cover reduction on the Metolius, as well as possible future treatments of emergent invasive plants if they occur in these habitats and are treated under EDRR. All effects to listed fish species and their habitats were determined to be short-term, with a corresponding long-term beneficial effect associated with removing invasive species and encouraging the re-establishment of native vegetation (FSEIS pp. 302-304 and 310-320).

In response to the BA, FWS and NMFS each prepared a Biological Opinion; these documents and the associated Terms and Conditions are described under "Findings Required by Other Laws" later in this Record of Decision.

Between DSEIS and FSEIS, determinations regarding effects of Alternative 3 on bull trout and steelhead trout were changed to LAA, due to potential for increased disturbance from non-herbicide treatments in specific situations; the FSEIS indicates that manual treatments of emergent vegetation may cause greater effects to fish and habitat than chemical treatments, due to increased physical disturbance and risk of trampling (FSEIS p. 318).

#### Human Health—Exposure to Herbicides

Herbicide exposure in Alternative 2 (as well as Alternatives 1 and 3) is associated with low risk to human health. People continue to raise concerns about potential effects of herbicide use to human health, either through drinking contaminated water, eating contaminated food, direct contact with herbicides during their application or contact with vegetation that has been sprayed. This issue was largely addressed in the R6 2005 ROD, which approved only the use of low toxicity herbicides. PDFs additionally minimize herbicide exposure. Table 89 shows how the PDFs minimize the few exposure scenarios of concern identified in the R6 2005 FEIS (Appendix Q). Media postings, signing, or personal notification will inform the general public and special forest product collectors of when and where herbicide application will take place. We feel that the risks to human health and safety have essentially been eliminated and human health and safety will be maintained throughout all stages of implementation.

#### Effects to Wildlife

Alternative 2 would not adversely affect local wildlife species. The public expressed concern that the use of herbicides could harm wildlife species through direct contact or ingesting plants that have herbicide on them. There is potential for disturbance to wildlife during implementation. Conversely, invasive plants are causing impacts to wildlife habitat and to wildlife directly where they can cause injury or poisoning.

The wildlife analysis (FSEIS Chapter 3.9) is tiered to analysis in the R6 2005 FEIS (2005a), which included a Biological Assessment and SERA risk assessments; the 2005 FEIS thoroughly evaluated in detail the effects of invasive plant treatment methods to wildlife and concluded disturbance from manual

---

and mechanical treatment pose greater risks to terrestrial wildlife species of local interest than herbicide use (FEIS p. 312). PDFs place restrictions on how and where herbicides are applied, minimize disturbance, and prohibit use of certain surfactants in some habitats. Forest Plan standards and these PDFs ensure that no alternative will adversely affect any federally listed species, result in a trend toward listing of any sensitive species, nor adversely impact the habitat of management indicator species, landbirds, or Birds of Conservation Concern (FSEIS pp 425-426; 433-436).

Consultation with the Fish and Wildlife Service (FWS) has been completed for this project. A Biological Assessment (BA) evaluating the Proposed Action was sent to the FWS (May 6, 2009). The BA provided analysis and rationale for the determination that the Proposed Action may affect but is not likely to adversely affect the northern spotted owl (a federally-listed Threatened species), and would have no effect on designated critical habitat for spotted owls<sup>3</sup> (FSEIS p. 406). In a letter dated December 14, 2011, FWS described the informal consultation process by which the BA for spotted owls and critical habitat was reviewed, and expressed concurrence with the Forest Service. The FSEIS indicates that Alternative 3 would also have no effect on spotted owls and their critical habitat (FSEIS p. 406).

### Socio-Economic

Alternative 2 is the most cost-efficient alternative. The economic efficiency of the treatment methods are also a concern for members of the public. People are interested in the cost of the project, whether jobs would be created, and how effective treatments as well as early detection and rapid response would maximize efficiency in invasive plant management.

The FEIS described the expected costs of each treatment method (pp. 341-342). The methods vary in cost, which affects that amount of acreage that can be effectively treated each year. Early detection and rapid response would improve the Forests' ability to treat sites while they are small, which would lower costs. The difference in cost between the action alternatives is relatively small, particularly when compared to the negative effect invasive plants currently cause to the value of Oregon's resources (FEIS p. 341).

We acknowledge that Alternative 3 would have created more jobs – 112 as compared to 88 in the Selected Alternative and 32 under No Action. Alternative 3 would involve more labor because of a heavier reliance on manual treatment and/or hand application of herbicide near water, which are more labor-intensive methods. However, we have decided based upon the analysis in the FSEIS that the reduced effectiveness of manual treatments (as opposed to chemical treatments on some invasive species sites) as well as the increased risk of affects to riparian habitats from manual treatments of emergent invasive plants are concerns that outweigh the socio-economic benefit of 24 additional seasonal jobs (FSEIS pp. 439-444).

### Cultural

Both action alternatives include 14.3 acres of burning and mechanical treatments that may have the potential to expose historic or prehistoric resources. PDFs are in place to fully protect these cultural resources. There is no effective alternative to these integrated treatments in these sites.

Cultural plants may be affected by invasive plant treatments, however without treatment cultural plants may be adversely affected by invasives. Alternative 2 does the most to prevent spread of invasive plants into cultural plant gathering areas. PDFs are in place to protect non-target vegetation; PDF #41 addresses time of herbicide application in cultural plant areas. Under Alternative 3, manual methods would not be as effective in preventing invasive plant spread into cultural plant areas near streams.

### Recreation and Scenery

---

<sup>3</sup> The northern spotted owl occurs on the Deschutes National Forest, but not on the Ochoco NF nor the Crooked River National Grassland; designated critical habitat for the species is present on the Deschutes NF.

---

Under Alternative 2, there could be short term effects (1-2 growing seasons) of dead vegetation along access and transportation corridors. Short periods of interaction between recreationists and weed-control crews and temporary closures of recreation sites during herbicide application work are possible. These periods would have been slightly increased in Alternative 3 especially where manual treatments would have taken the place of herbicide treatments (e.g. on 260 acres within 10 feet of streams). However, under No Action, without effective treatments, invasive plants could alter the scenic pattern, form and texture of the landscape.

### Congressionally Designated Areas

**Wilderness:** There are three PAUs within or partly within designated Wilderness on the Ochoco National Forest (Mill Creek and Black Canyon Wilderness Areas); no PAUs are located within Wilderness on the Deschutes NF. Only manual treatments will be implemented within Wilderness boundaries; however, herbicide treatment will be used outside the Black Canyon Wilderness boundary at the trailhead. Additional herbicide and manual treatments will be implemented along roads that are parallel to Wilderness boundaries on the Deschutes and Ochoco National Forests. Due to the presence of invasive species along Wilderness trails and at a trailhead, as well as the proximity of additional populations near Wilderness areas, there is a risk of spread of invasives into Wilderness areas. Treatments implemented under the selected alternative will reduce this risk, as well as eradicate existing populations and preserve Wilderness values. A visitor's sense of solitude may be affected by the short-term presence of a person manually removing invasives within Wilderness; however, project design features will minimize this risk due to signage and implementing treatments outside of high-use periods. The same treatments would have been implemented under Alternative 3. The No Action alternative would preclude any treatments in Wilderness areas and most of the treatments outside and adjacent to Wilderness, except those approved in previous decisions use in wilderness; therefore, Alternative 1 would maintain existing populations and increase the risk of introduction (see FSEIS pp. 482-484).

**Oregon Cascades Recreation Area:** Cultural and manual methods will occur in the selected alternative to treat invasive plants, having short-term effects to the recreation experience from reed canarygrass solarization control techniques and resulting dead patches of vegetation. Alternative 3 would have been similar. Under No Action, reed canarygrass and other species would continue to spread within Big Marsh, and this alternative poses the greatest threat to the goals established for the area, and its unique values.

**Wild and Scenic Rivers:** Herbicide treatments may have short-term effects to scenic values, however Alternative 2 will have a long-term benefit to native plant communities and associated scenic values. Alternative 3 would have had slightly less benefit due to less effective treatments. No Action would have continued the risk of affecting the Outstanding and Remarkable Values (ORV) for all Wild and Scenic Rivers in the project area, from continued spread of invasive plants.

**Research Natural Areas:** Under both action alternatives, herbicide use would occur within the Ochoco Divide RNA. There would be minor, short-term effects to native vegetation from herbicide use and a long-term benefit to maintaining natural conditions by controlling weeds on adjacent roads, and by implementing EDRR. Under No Action, Research Natural Areas would continue to be at risk from spread of invasive plants.

**Newberry Crater Volcanic Monument:** Under both action alternatives, herbicide use is proposed along major access roads to the Monument and the 10-mile Sno-Park would have short-term visual effects.

## **PUBLIC INVOLVEMENT**

The NEPA scoping process (40 CFR 1501.7) was used to invite public participation, refine the scope of this project, and identify preliminary issues to be addressed. The Forest Service sought information, comments, and assistance from Federal, State, and local agencies, the tribes, and other groups and individuals interested in or affected by the Proposed Action. The scoping process began on February 23,

---

2004, with the *Federal Register* publication of a Notice of Intent to prepare an environmental impact statement. This Notice of Intent was updated on October 21, 2005 (Vol. 70, #203). A letter describing the purpose and need and the proposed action, dated August 19, 2005, was mailed to approximately 700 individuals, organizations, agencies, businesses, recreation residence owners, and local and Tribal governments. A comment form was provided that could be filled out and mailed back to the Forests.

The Forest Service received 28 responses to this initial scoping effort. The largest number of comments addressed treatment effectiveness, urging that the project go forward in a timely manner. Prevention and monitoring were suggested for long-term site goals. A large number of comments expressed concern for social and economic factors, stating that inter-agency as well as partnerships with private groups with the same goals be explored for the sake of saving time and money. Effects on human health and non-target species from herbicides were other concerns expressed during this process. Implementing herbicide application methods that reduce the threat to forest workers and those who use the forest, as well as the forest environment, including wildlife, soils, water, and aquatic biota were advised. Still others felt that herbicides should not be used at all. Issues generated from this public input facilitated project design development, alternative development, effects analysis of the alternatives, and selection of a preferred alternative.

Additional scoping activities were conducted to solicit public input. These activities included:

- A project website was maintained throughout the process so that project documents, maps, and information were available (<http://www.fs.fed.us/r6/invasiveplant-eis/site-specific/DES>).
- A description of the alternatives to be analyzed in the Draft EIS was mailed to approximately 700 individuals, organizations, and agencies on March 22, 2006.
- Various meetings were held with county and state noxious weed coordinators.
- Project updates were provided on two occasions to the Deschutes Provincial Advisory Committee.
- A meeting was held in the field with representatives of the Friends of the Metolius, Sierra Club, and Metolius Homeowners Association.
- The interdisciplinary team met with representatives of the Confederated Tribes of the Warm Springs Indian Reservation.
- The interdisciplinary team leader met with representatives of the Crook County Natural Resources Advisory Committee.

The Draft Environmental Impact Statement for Invasive Plant Treatments, Deschutes and Ochoco National Forests and Crooked River National Grassland was released to the public in February 2007. Approximately 100 individuals, organizations, and other agencies received the DEIS or notification of its availability. The Notice of Availability was published in the *Federal Register* on February 2, 2007. In addition, a legal notice appeared in *The Bulletin* (Bend, Oregon) and informational articles appeared in *The Bulletin* and *The Central Oregonian* (Prineville, Oregon).

During the 45 day comment period, we received comments from 17 individuals, organizations, and agencies through mail and email. All comments were reviewed and substantive comments received the focus during this comment analysis to determine whether to: 1) modify existing alternatives; 2) develop new alternatives; 3) supplement, improve, or modify the analysis; or 4) make factual corrections. Substantive comments and the Forest Service response to each were included in Appendix I of the 2008 FEIS.

A Final EIS and Record of Decision were released in January 2008. Following an administrative appeal, the ROD was withdrawn and the Forests began work on a Supplemental EIS. A Notice of Intent to prepare a Supplemental EIS was published in the *Federal Register* on October 21, 2008 (Vol. 73, No. 204, p. 62461). The Forest Service received one response to this second scoping effort.

---

The scoping input received on the original and supplement EIS was used to develop the alternatives and analysis elements that form the basis for the DSEIS. The DSEIS included additional analysis and sought to better explain the alternatives and analysis.

On June 10, 2009 a letter was sent to 89 individuals, organizations, tribes, and other agencies asking for comments on the DSEIS; Alternative 2 was identified as the preferred alternative. On June 26, 2009, the Notice of Availability (NOA) for the Draft Supplemental Environmental Impact Statement appeared in the Federal Register Volume 74, No. 122 on p. 30570; publication of the NOA initiated the 45-day comment period.

The results of the 45-day public comment period are described in Appendix J of this Final SEIS; the Forest Service received 19 responses. The majority of comments expressed concern for effects on human health and non-target species from toxicity of herbicides and the effectiveness of treatment methods. The comments expressed concern about impacts to forest workers; those who use the forest; and the forest environment, including wildlife, soils, water, and aquatic biota. Many comments focused on the types of herbicides and where to use them. Comments generated from this public input resulted in additional analysis in the FSEIS to clarify and augment the analysis disclosed in the DSEIS and additional restrictions on the use of particular herbicides on porous or shallow soils to better protect groundwater.

One individual wrote two comment letters expressing concern about glyphosate and other herbicides proposed. Many website and other citations were provided in the letters. The websites and reports were reviewed; generally they provided information that was consistent with information already included in the Invasive Plant Treatments analysis and provided no new information; for a more complete review of these websites and citations, see Appendix J in the FSEIS.

Another commenter expressed the opinion that herbicide use should be severely restricted and only used as a last resort, and not applied on National Forest System lands because they provide habitat for wildlife and fish. This alternative was considered as discussed in the FSEIS (p. 63). The commenter also expressed concern with the implementation plan and the ability of the Forest Service to adequately apply PDFs to site-specific situations so that impacts are minimized. Appendix F was modified in response to this comment to demonstrate how PDFs would be applied to a difficult and complex site-specific situation; a representative site was visited by the commenter and weed specialists from the Forest Service and state agencies.

An issue expressed by one commenter is the relationship between invasive plant prevention practices during land uses and actions needed to control invasive plants. Integrated invasive plant management includes invasive plant prevention practices (FSEIS Appendix G). Prevention is an important component of invasive plant management and integral to implementing successful treatments. The R6 2005 ROD amended Forest Plans in Region 6 and stipulated that prevention standards and local prevention guidelines be applied to land use projects in the planning and implementation stages. While some members of the public suggested that site specific application of prevention standards should be the focus of this EIS, these are not connected actions because they could occur regardless of the treatments proposed or approved (separate utility). Prevention activities are applied to land use activities considered in the cumulative effects analysis.

## **ALTERNATIVES CONSIDERED**

In addition to the selected alternative, I considered two other alternatives, which are discussed below. Alternative 2 is the environmentally preferred alternative. A more detailed comparison of these alternatives can be found in the FSEIS on pp. 66-74.

---

## **Alternative 1**

### Invasive Plant Treatment

Under the No Action alternative, the Forests and Grassland would continue to treat invasive plant species as authorized under existing NEPA documents, which is approximately 6% of currently inventoried invasive plant sites. Details on the areas treated each year are available from the Forests and Grassland Invasive Plant Program Manager.

Invasive plant treatments have been previously authorized under the following NEPA decisions:

- Ochoco National Forest and Crooked River National Grassland, Integrated Weed Management Environmental Assessment and Decision Notice (1995) allowed the Forest Service to treat 34 noxious weed sites with a mix of manual, biological, and herbicide treatments. It also amended the Ochoco/Grassland LRMP to include programmatic direction for Forest Plan desired future conditions, goals, objectives, and standards and guidelines for noxious weed management. Herbicides approved for use on the Ochoco National Forest and Crooked River National Grassland were dicamba, picloram, and glyphosate.
- Ochoco National Forest and Crooked River National Grassland, 1998 Integrated Noxious Weed Management Environmental Analysis and Decision Notice analyzed and authorized intensive weed management on 72 sites, with herbicide, manual, and/or biological control. Based on monitoring results of manual methods of weed sites treated under the 1995 EA, the 1998 expanded the area where herbicides could be used. Only dicamba, picloram, and glyphosate were proposed.
- Deschutes National Forest Noxious Weed Control Environmental Assessment and Decision Notice (USFS 1998a) authorized treatment at 98 noxious weed sites on 901 acres with manual treatment, 27 sites on 149 acres with biological agents, 1 site on 5 acres with prescribed burning, and 40 sites on 476 acres with herbicides. Only dicamba, picloram, glyphosate, and triclopyr were proposed.
- Turnpike Pit Medusahead Control, Environmental Assessment and Decision Notice (2005c) authorized herbicide treatment (glyphosate) of medusahead at the Turnpike Pit material source (used for the extraction of rock and gravel) and require monitoring of the site (Paulina Ranger District, Ochoco NF).
- Various Categorical Exclusions and Decision Memos authorizing manual methods of weed treatment across the two Forests and Grassland.

### Early Detection / Rapid Response

New detections or newly inventoried invasive species sites would not be treated effectively. A NEPA process to use herbicides on new sites would have to be initiated, taking several years.

### Site Restoration

Site restoration is not specifically prescribed in the No Action alternative.

---

### Monitoring

Ongoing monitoring under the Forest Plans would continue for projects under No Action.

### Forest Plan Amendment

There would be no Ochoco Forest Plan amendment. The current standards would remain unchanged.

### **Alternative 3**

#### Invasive Plant Treatment

This alternative would have modified the Proposed Action to reduce the amount, type, and method of application of herbicide used near water. No herbicides would be used within 10 feet of perennial waterbodies and no broadcast spraying would occur within 300 feet of perennial waterbodies. Within the current inventory, non-herbicide use would be required on approximately 260 acres within 10 feet of perennial streams. On the approximately 1,288 acres between 10 and 300 feet of streams, the use of herbicides would be restricted to hand or spot application. These buffers would also be applied to new detections found within 10 feet of streams and between 10 and 300 feet of streams. In addition, the use of certain herbicides (picloram, sethoxydim, and triclopyr) would not be allowed within 300 feet of streams.

#### Early Detection / Rapid Response

New detections or newly inventoried invasive species sites would have been treated using the EDRR strategy following the restrictions on treatments near water that are part of Alternative 3.

#### Site Restoration

Site restoration would have occurred similarly to Alternative 2.

#### Monitoring

Monitoring would have occurred similarly to Alternative 2.

#### Forest Plan Amendment

Alternative 3 would have amended the Ochoco National Forest plan similarly to Alternative 2.

### **Alternatives not Considered in Detail**

In addition to the alternatives described above, several alternatives were developed to address issues raised by the public (see FSEIS Chapter 2.5). The themes of these alternatives included:

- Emphasize methods other than herbicides.
- Use herbicides only as a "last resort."
- Do not use certain herbicides.
- No broadcast spraying of herbicides.
- Prohibit biological control.
- Maximize worker jobs by maximizing manual treatments.
- Maximize cost efficiency by maximizing herbicide use.
- Focus on education and prevention rather than treatment.

Chapter 2.5 of the FSEIS provides detailed explanation why these alternatives were not fully developed and analyzed. In most cases, the alternative did not effectively meet the purpose and need. For instance, prohibiting herbicides, restricting use of certain herbicides, precluding broadcast spraying, maximizing manual treatments and prohibiting biological control would reduce the tools available for effective and efficient treatment of existing and new invasive species infestations. Maximizing herbicide use rather than focusing herbicides on sites and situations where they would be most effective would reduce cost-efficiency as well as increase risk of undesirable environmental effects. Focusing on education and prevention while precluding treatment would be ineffective in reducing the established invasive plant

---

populations; prevention and education are important components of invasive plant management, however, and are ongoing on the Forests and the Grassland under Executive Order 13112 (1999), the R6 2005 ROD, and 2004 direction from the Regional Forester (see FSEIS Appendix G).

## **FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS**

This decision is consistent with all other current laws, regulations and policies guiding invasive plant programs and other management activities on National Forest System lands including, but not limited to: the National Forest Management Act; the Deschutes and Ochoco National Forest Plans and the Crooked River National Grassland Plan; the Clean Water Act and Safe Drinking Water Act; the Wilderness Act; the National Historic Preservation Act; and Executive Orders 11988, 11990 and 12898. After consideration of the discussion of environmental consequences (FSEIS Chapter 3), we have determined the Selected Alternative is consistent with the intent of the Forest Plans' long-term goals and objectives, as amended. Also, we have determined the Selected Alternative is consistent with other laws and regulations, as outlined in the FSEIS.

In April 2007, Northwest Coalition for Alternatives to Pesticides, the lead signer in the 1989 Mediated Agreement, agreed it was willing to dissolve the Mediated Agreement for purposes of controlling invasive plants in Region 6. The Portland Audubon Society (July 2, 2007) and the Oregon Environmental Council (October 15, 2007) have also agreed in writing to dissolve the Mediated Agreement for invasive plant control.

### **Consistency with National Forest Management Act/Forest Plans**

All proposed treatments of invasive plants will occur on National Forest System (NFS) lands under the Selected Alternative. All activities that will occur on NFS lands as described in this ROD and accompanying FSEIS are in compliance with the relevant management requirements set forth in the National Forest Management Act (36 CFR 219).

Alternative 2 is consistent with long term management objectives as discussed in the Deschutes and Ochoco National Forest Plans and the Crooked River National Grassland Land and Resource Management Plan, as amended, including PACFISH and INFISH. The applicable Forest Plan Standards and Guidelines are listed in FSEIS, Appendix C, including Forest-wide standards and Management Area standards related to the proposed activities. Except for the amendment to the Ochoco Forest and Crooked River National Grassland Plans (see below), the Selected Alternative is consistent with the goals and objectives for all Management Areas, including the standards and guidelines for the Northwest Forest Plan Record of Decision, including subsequent amendments (FSEIS p. 495).

### **Aquatic Conservation Strategy**

The Aquatic Conservation Strategy (ACS) objectives are discussed in the FSEIS, Chapter 3.6.3. We have considered relevant information from watershed analyses and we have also considered the existing conditions of riparian reserves, including the important physical and biological components of and the effects to riparian resources (Chapter 3.6 and 3.9). We find the Selected Alternative is consistent with the recommendations of the watershed analyses and the riparian reserve standards and guidelines, and will contribute to maintaining and restoring the watersheds over the long term. We also find that Alternative 2 is consistent with each of the ACS objectives and will not prevent attainment of ACS objectives; in fact, by effectively treating the most acreage of invasive plant infestations in riparian areas, Alternative 2 best contributes to attainment of the ACS objectives by controlling and/or eradicating invasive weed populations and fostering the return of native species habitat and the species that depend on this habitat (see FSEIS pp. 249-256).

---

## Survey and Manage Species

On December 17, 2009, the U.S. District Court for the Western District of Washington issued an order in *Conservation Northwest, et al. v. Sherman, et al.*, No. 08-1067-JCC (W.D. Wash.), granting Plaintiffs' motion for partial summary judgment and finding NEPA violations in the Final Supplemental to the 2004 Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines (USDA and USDI, June 2007). In response, parties entered into settlement negotiations in April 2010, and the Court filed approval of the resulting Settlement Agreement on July 6, 2011. Projects that are within the range of the northern spotted owl are subject to the survey and management standards and guidelines in the 2001 ROD, as modified by the 2011 Settlement Agreement.

We have reviewed the Environmental Impact Statement for the Invasive Plant Treatments Project and have determined it is consistent with the Deschutes National Forest Land and Resource Management Plan as amended by the 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (2001 ROD), as modified by the 2011 Settlement Agreement.

We have evaluated the scale, scope and intensity of proposed invasive plant treatments within the Northwest Forest Plan area and determined these treatments will not have a significant negative impact on habitat, life cycle, microclimate, or life support requirements for Survey & Manage species; therefore pre-disturbance/equivalent effort surveys are not required. This determination was made for the following reasons:

### Scale

- The Deschutes NF has 776,514 acres of land within the Northwest Forest Plan area. Herbicide treatments are proposed within 12,487 acres in Invasive Plant PAUs within the Northwest Forest Plan (invasive plants are actually mapped on 260 acres). Of these 12,487 acres, 10,714 acres are along roads and in rock quarries; these highly disturbed areas are not habitat for Survey & Manage lichens, bryophytes, fungi, vascular plants, Crater Lake tightcoil snails, or great gray owls. The remaining 1,773 acres (0.2% of the Northwest Forest Plan area) occur in forested areas or along streams, lakes and wetlands. A very small portion of Northwest Forest Plan area would be treated with herbicides; this would not constitute a significant habitat-disturbing activity to any of the Survey & Manage species.
- Of the 776, 514 acres of land within the Northwest Forest Plan area, biological control is proposed within 2,356 acres of PAUs (invasive plants actually occupy 77 acres). Of these 2,356 acres, the majority (1,968 acres) is road or rock quarry sites that are not habitat for Survey and Manage lichens, bryophytes, fungi, vascular plants, Crater Lake tightcoil snails, or great gray owls. The remaining 388 acres are general forest; a very small portion of the NWFP area would be within PAUs proposed for biological control (0.05%). Because biological control targets the invasive plant species and a very small area would be treated, this would not constitute a significant habitat-disturbing activity to any of the Survey & Manage species.
- Manual treatments, such as hand-pulling are proposed at many sites as a follow-up to herbicide spraying to get individual plants missed by the herbicide treatment, or as the only treatment where the invasive plant populations are small and the species can be effectively controlled manually. Manual treatments are proposed within 14,106 acres of PAUs in the NWFP area (invasive plants actually occupy 294 acres). Of these 14,106 acres, 10,714 acres are along roads and in rock quarries, which are not habitat for Survey and Manage lichens, bryophytes, fungi, vascular plants, Crater Lake tightcoil snails, or great gray owls. The remaining 3,392 acres of manual treatment would occur within a small portion of the NWFP area (0.4%); this would not constitute a significant habitat-disturbing activity to any of the Survey & Manage species.

---

## Scope

- On the Forest, invasive plants generally occur in open, disturbed areas that are not habitat for Survey & Manage species. Survey & Manage species are closely associated with late-successional or old-growth forests (USDA, USDI 2001). Invasive plants on the Forest most often occur where soils are disturbed and often highly compacted, such as road shoulders; these areas are not typical habitats occupied by Survey & Manage species. There are about 82,504 acres of old growth forests in the NWFP area on the Deschutes National Forest. Of these 82,504 acres, 1,899 acres of old growth are scattered across 48 Invasive Plant Project Area Units (invasive plants occupy 327 acres in these 48 PAUs). Invasive plant infestations within or adjacent to old-growth habitats are small, patchy and scattered and do not occur in large continuous blocks. Treatment of small patches is unlikely to disturb survey and manage species because of the low likelihood of overlap between small scattered patches of weeds and the presence of Survey and Manage species.
- Invasive plants do not provide the essential native habitat components that sustain Survey and Manage populations. Some invasive plants may harm or degrade habitat components needed by Survey and Manage species.
- Invasive plant treatments would not remove or degrade late-successional or old-growth forest habitats.

## Intensity

- Herbicide treatment caps further limit the scope and scale of treatments. There is a 16,000-acre yearly treatment cap for the entire project area (two Forests and the Grassland). Herbicide treatment (for existing sites as well as future treatment under EDRR) is further subject to an annual limit for areas adjacent to water: for treatments above bankfull, but still within the aquatic influence zone, herbicide application is limited to 10 acres per year per 1.5 miles of stream, within any 6<sup>th</sup>-field subwatershed. Treatments below bankfull would be restricted to 1 acre per year within any 6<sup>th</sup>-field subwatershed. The aquatic influence zone is defined as the inner half of a riparian reserve or riparian habitat conservation area on Class 1, 2, 3, and 4 streams and lakes and wetlands.
- Herbicide treatments are limited to hand application within 50 feet of water, which minimizes potential impacts to Survey and Manage species.
- Herbicide and manual treatments are often repeated in the same year to eradicate individual plants missed by earlier treatments. Herbicide treatments would likely be repeated several years in a row until the invasive plant population is controlled. The amount of herbicide used at each site each year would be reduced as the invasive plant population is controlled.
- Treatment of invasive plants would not be habitat-disturbing or likely to have a significant negative impact on the Crater Lake tightcoil, regardless of treatment method or alternative. The Crater Lake tightcoil may be found in perennially moist situations within 10 meters (m.) of open water. Riparian habitats in the Eastern Oregon Cascades that are suitable for this species are often much less than 10 m. from open water. Treatments of any type greater than 10 m. from surface or perennial water, including the broadcast application of herbicide would not be habitat-disturbing and would have no effect to the Crater Lake tightcoil. Invasive plants that are found in perennially wet areas include reed canary grass and ribbongrass. These species are located in areas that are seasonally flooded (spring run-off and high water events) and have large fluctuations in water level. These areas are unsuitable as habitat for the Crater Lake tightcoil. The other invasive plants to be treated within 10 m. of water are found in disturbed habitats that generally have lower soil moistures that also render these areas unsuitable for the Crater Lake

---

tightcoil. Invasive plant treatments will not remove or degrade the essential habitat components of uncompacted soil, litter, logs, and other woody debris, nor alter water levels. The invasive plant treatments proposed do not create habitat-disturbance or have a significant negative impact on the Crater Lake tightcoil's habitat, life cycle, microclimate, or life support requirements.

- Treatment of invasive plants would not be habitat-disturbing or likely to have a significant negative impact on the great gray owl, regardless of treatment method or alternative. None of the treatments proposed would affect the essential habitat components of the great gray owl or its prey. Invasive plant treatments would not modify or degrade nesting, roosting or foraging habitat of the great gray owl or cut potential nest trees. Invasive plants do not provide habitat for the great gray owl or their prey. The majority of treatments are along roadsides that do not provide great gray owl habitat or habitat of their prey. The treatment of invasive plants would not generate habitat-disturbance from noise or repetitive and continuous activity. Known nest sites would be protected from habitat-disturbance by project design feature #94 which seasonally restricts activities near nest sites. The invasive plant treatments proposed do not create habitat-disturbance or have a significant negative impact on the habitat, life cycle, microclimate, or life support requirements of the great gray owl.

#### **Additional Information**

- Multiple layers of caution<sup>4</sup> are integrated into herbicide use. Project design features and riparian buffers provide protection to non-target vegetation and Survey and Manage habitat, reducing potential effects to Survey and Manage lichens, bryophytes, fungi, vascular plant habitat and Crater Lake tightcoil habitat.
- Treating invasive plants is important for protecting native plant habitats.
  - Invasive plants create a host of adverse environmental effects that are harmful to native ecosystem processes (Sheley and Petroff 1999). Examples of these effects include: displacement of native plants; reduction in habitat and forage for wildlife and livestock; loss of threatened, endangered, and sensitive species; increased soil erosion and reduced water quality; reduced soil productivity; and changes in the intensity and frequency of fires. Invasive plants spread between National Forest and neighboring areas, affecting all land ownerships. The problem is so great that in 2006, the Chief of the Forest Service included invasive species as one of the "Four Threats to the Nation's Forests and Grasslands (<http://www.fs.fed.us/projects/four-threats/>).

Information concerning Survey and Manage Species is available in the FSEIS, Chapter 3.4 and 3.9 under rare and uncommon species.

#### **Forest Plan Amendment**

The invasives treatment project is utilizing new tools made available to the Region with the R6 2005 ROD. Two standards and guidelines in the Ochoco National Forest and Crooked River National Grassland Land and Resource Management Plans are not consistent with the R6 2005 ROD direction (Table 1). We are removing both of these standards with this decision.

---

<sup>4</sup> These layers include State and Federal laws, EPA label requirements, SERA Risk Assessments, and the Region 6 Toxicity Levels of Concern for Federally Listed anadromous fish; see FSEIS p. 176 for more information.

**Table 1. Forest Plan standards and guidelines removed with this Forest Plan amendment.**

Forest Plan	Scope	Deleted Standard and Guideline
Och/CRNG 1995 Weed EA/DN	Forest-wide Direction	Use chemical treatments only when other methods have proven ineffective or impractical.
Och/CRNG 1995 Weed EA/DN	Grassland- wide Direction	Use chemical treatments only when other methods would be ineffective or impractical.

The analysis in the FSEIS for the action alternatives assumed that these standards were removed, and the alternatives would be consistent with the R6 2005 ROD standards.

The purpose of the amendments is to reconcile the Ochoco National Forest and Crooked River National Grassland Plans with recent standards and guidelines established in the 2005 Invasive Plant Program Record of Decision (USFS 2005b). The proposed changes are described in the table above. These amendments will apply to the respective management areas throughout the Ochoco National Forest and Crooked River National Grassland.

This plan amendment is being prepared under the 2000 rule as amended with transition wording at 36 CFR 219.35 that allows the use of the 1982 rule procedures. (See 65 FR 67568, Nov. 9, 2000, as amended at 66 FR 1865, Jan. 10, 2001; 66 FR 27554, May 17, 2001; 67 FR 35434, May 20, 2002; 68 FR 53297, Sept. 10, 2003; 69 FR 58057, Sept. 29, 2004). The 1982 rule and the 2000 rule as amended are available online at [http://www.fs.fed.us/emc/nfma/2000\\_planning\\_rule.html](http://www.fs.fed.us/emc/nfma/2000_planning_rule.html).

The regulations state: "If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures" (36 CFR 219.10(f)). Additional guidance on amending Forest Plans is provided in the Forest Service Manual 1900-Planning: Section 1926.51 and 1926.52. The manual describes non-significant amendments as:

1. Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management;
2. Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management;
3. Minor changes in standards and guidelines; and/or
4. Opportunities for additional projects or activities that will contribute to achievement of the management prescriptions.

The manual describes significant amendments as:

- Changes that would significantly alter the long-term relationship between levels of multiple-use goods and services originally projected (36 CFR 219.10(e)); or
- Changes that may have an important effect on the entire forest plan or affect land and resources throughout a large portion of the planning area during the planning period.

---

After review of the FSEIS and project record, we have determined that no other factors or unique circumstances affecting the Forest Plan will occur from this amendment. This is a non-significant amendment to the Ochoco National Forest and Crooked River National Grassland Plans. Our rationale for this finding is based on the following:

- This amendment will not make changes in management area boundaries or prescriptions, but does represent minor changes in standards and guidelines and provides for additional management practices that could contribute to achieving management prescriptions.
- The minor changes to the standards and guidelines will not alter any of the multiple use goals or objectives outlined in the Land and Resource Management Plans for the Ochoco National Forest or Crooked River National Grasslands. To the extent that invasive plants may adversely affect the multiple use goals of these management areas, however, allowing for the appropriate use of herbicides to treat invasive plant populations in these areas could contribute to achieving multiple use goals.
- The minor changes to forest and grassland-wide standards do not change the overall intent of the standards. The standards as written could mean that methods other than herbicides need to be tried first on a weed site before herbicides could be used. In other words, they would be used only as a last resort when other methods fail. That would contradict the Regional Forester's direction in the R6 2005 Record of Decision for the Invasive Plant Program (USFS 2005b). The Record of Decision established that only allowing herbicides to be used as a method of last resort is inconsistent with integrated weed management principles (R6 2005 ROD, p. 27).

#### **The Endangered Species Act of 1973, as amended, and Magnuson-Stevens Fishery Conservation and Management Act**

Consultation with the Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS, also referred to as NOAA Fisheries) has been completed for this project. The Forest Service consulted with these agencies during the planning process. Biological Assessments (BAs) evaluating the Proposed Action identified actions that were determined both "not likely" and "likely" to adversely affect species listed or proposed for listing under the Endangered Species Act. In response to the BA(s), FWS and NMFS each prepared a letter of concurrence on the portions of the project they considered "not likely" to adversely affect the species and a Biological Opinion (BO) for portions of the project they considered "likely" to affect such species.

In their BO dated 12/14/2011, the FWS authorized incidental take of bull trout (FWS BO p. 55), and issued the following Reasonable and Prudent measures (FWS BO p. 57), which are incorporated into project design; the Forests and Grassland shall minimize incidental take of bull trout by:

1. Ensuring that treatment activities (from herbicides and manual/mechanical treatments) implement precautionary measures that minimize the spread of invasive plants, keep chemicals out of the water, and reduce erosion potential.
2. Reporting annual invasive plant control plans to the Service via the Level 1 Team by April 1, prior to the start of the spray season (2012 to 2027). The plans should include the treatment methods, herbicide application methods and rates, objectives of treatments, locations, maps of treatment areas, acreages, proposed start and stop dates, and special mitigation measures that will be applied.
3. Providing Project Consistency Evaluation Forms to the Service by January 31 on activities implemented during the 2012 to 2027 seasons and the results of Regional monitoring efforts. If no activities occur, a report of no action is still required by January 31, following each spray season.

The following terms and conditions are non-discretionary and are incorporated into project design (see FWS BO p. 68).

- 
1. The following terms and conditions are necessary for the implementation of RPM 1:
    - a. Ensure vehicles and equipment do not transport invasive plant materials.
    - b. Ensure that treatments below bankfull are conducted during the instream work window.
    - c. Do not use any products other than those products evaluated in this Biological Opinion.
    - d. Ensure that herbicide application methods are more restrictive in proximity to water.
    - e. Herbicide applicators will obtain a weather forecast for the area prior to applying herbicides to ensure no imminent precipitation or wind events are likely to occur during or immediately after spraying.
    - f. No broadcast of high aquatic risk herbicides on roads that have a high risk of delivery to water (generally roads in RHCAs). These herbicides are picloram, non-aquatic triclopyr (Garlon 4), non-aquatic glyphosate, and sethoxydim.
    - g. Ensure that foaming only be used on invasive plants that are further than 150 feet from streams and other water bodies.
  
  2. The following terms and conditions are necessary for the implementation of RPM 2:
    - a. Present annual invasive plant treatment plans with the Level 1 team, including treatment methods, herbicide application methods and rates, objectives of treatments, locations, maps of treatment areas, acreage, proposed start and completion dates, sensitive areas, and special mitigation for activities involving herbicides by April 1, prior to the spray season. We recognize that not all treatments under the EDRR program may be identified prior to April 1. Actions under EDRR should be submitted in the Project Consistency Evaluation Forms to the Forest Level 1 representatives by November 1, as stated in the biological assessment. PCEFs will be compiled and submitted to the Service by January 31st each year. The pre-project reporting requirement will commence prior to initiation of treatments in 2012; will follow for each subsequent spraying season on April 1; and will end for this consultation on December 31, 2027. The annual invasive plant treatment plans should contain the following information for projects planned in bull trout core area watersheds:
      - i. Location: 6th field HUC, 12 digit code, and name
      - ii. Timing: Anticipated project start and dates
      - iii. Treatment/Restoration Type: Identify all proposed activity types that apply.
      - iv. Project Description: Brief narrative of the project and objectives
      - v. Extent: Number of stream miles or acres of below-bankfull treatments, and number of riparian acres to be treated.
      - vi. Species Affected: Listed fish and or wildlife species or critical habitat effected by the project.
  
  3. The following terms and conditions are necessary for the implementation of RPM 3:
    - a. Using the format of the PCEF in Appendix E of the biological assessment, annually report to the Service by January 31, following the end of each spray season for the duration of this Opinion (2012 to 2027 spray seasons), the results of the project implementation and results of Regional monitoring efforts for projects implemented in bull trout core area watersheds:
      - i. Timing: Actual project start and end dates
      - ii. Deshutes/Ochoco NF contact information: Project lead name
      - iii. Post-project assessment: Report the results of monitoring efforts completed under the Regional Monitoring Framework. Send reports to the USFWS Bend Field Office, 63095 Deschutes Market Road, Bend, OR 97701.
      - iv. The National Marine Fisheries Service also completed an essential fish habitat (EFH) consultation, prepared in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801, et seq.) and implementing regulations at 50 CFR 600 (BIOP p. 58).
-

---

The NMFS found the conservation recommendations, plus terms and conditions 1-3 of the BIOP, are applicable to EFH conservation and recommended they be adopted as EFH conservation measures. As noted above, these measures, including the terms and conditions, have been incorporated in the project design.

In their BO dated 2/2/2012 (as updated by a letter dated 2/27/2012), NMFS authorized incidental take of juvenile Mid-Columbia River steelhead, and issued the following Reasonable and Prudent Measures and Terms and Conditions, which have been incorporated into project design (NMFS BO pp. 67 – 71; letter dated 2/27/2012).

### **Reasonable and Prudent Measures.**

The Forests and Grassland shall:

1. Minimize incidental take by following the proposed PDFs described in the BA.
2. Minimize incidental take by avoiding and minimizing adverse effects on aquatic and riparian habitats.
3. Minimize incidental take by ensuring completion of a monitoring and reporting program to confirm that the take exemption for the proposed action is not exceeded.

### **Terms and Conditions.**

1. To implement reasonable and prudent measure #1, the Forests shall:
  - a) Follow all PDFs for each programmatic category provided in the proposed action section of the BA and this Opinion.
2. To implement reasonable and prudent measure #2, the Forests shall:
  - a) Complete work within the active channel of streams occupied by MCR steelhead during the ODFW preferred in-water work period, as appropriate for the action area. Exceptions must receive NMFS' concurrence in writing prior to work being performed.
  - b) Not apply herbicides in riparian areas, perennial streams, intermittent stream channels, or ditches when soil is saturated, or when a precipitation event likely to produce direct runoff to steelhead-bearing waters from the treated area is forecasted by NOAA's National Weather Service or other similar forecasting service within 48 hours following application. This term and condition does not apply to the treatment of wetland and emergent plants as described in the proposed action.
  - c) Limit treatments within stream channels to 1 acre or less per year, per 6th field HUC subwatershed, for the duration of this Opinion.
3. To implement reasonable and prudent measure #3, the Forests shall:
  - a) Provide the following information in paper form to the NMFS Oregon State Habitat Office (OSHO) for all herbicide projects by May 1, prior to each annual spray season:
    - i. Location: For each 5th or 6th field HUC watershed (depending on site resolution), provide the 10-12 digit USGS code, and name of the watershed.
    - ii. Electronic maps of proposed treatment areas including distribution of MCR steelhead and their critical habitat.
    - iii. Anticipated treatment start and end dates
    - iv. Proposed herbicide treatments and mixtures, and any changes from mixtures identified in the EIS and BA for this action.
    - v. Number of treatment acres by 6th field HUC watershed, number of treatment acres in the aquatic influence zone, number of ditch miles to be treated, and number of stream miles to be treated.

- 
- b) Use the NMFS Public Consultation Tracking System - Consultation Initiation and Reporting System (CIRS), when this online system becomes available, and the Forests' staff have been trained to use it, to enter the information described in 3(a) above.
  - c) Require that site-specific information be recorded by each applicator for treatment sites that may affect MCR steelhead, including the following information:
    - i. GPS locations of treatment areas in riparian areas, streams, and roadside ditches that may affect MCR steelhead and their critical habitat. Include names and USGS codes of 6th field HUC(s) that are treated.
    - ii. The number of acres treated within the aquatic influence zone.
    - iii. The number of acres treated at or below bankfull elevation.
    - iv. The number of feet of wet or dry intermittent stream channels and roadside ditches treated with herbicide.
    - v. The GPS locations and sizes of emergent plant treatment areas.
    - vi. The product names and herbicide formulations used, including mixtures, adjuvants and surfactants.
    - vii. The herbicide application rate.
    - viii. The herbicide application method.
    - ix. Estimated wind speed at time of application.
    - x. Description of meteorological conditions.
  - d) Annually report to NMFS by February 28, following the end of each spray season for the duration of this Opinion (2012-2027 spray seasons), the results of the reporting requirements described in term and condition 3, and the following information:
    - i. A list of herbicide applications conducted over the reporting period, including information requested in 3(c) above.
    - ii. The results of the previous years' monitoring program.
    - iii. The annual report shall be sent to:  
National Marine Fisheries Service  
Oregon State Habitat Office  
Attn: 2009/03048  
1201 NE Lloyd Blvd., Suite 1100  
Portland, OR 97232
  - e) Comply with the requirements of the USFS Region 6 invasive plant monitoring plan. The Forests should conduct a data review of the pesticides that are proposed for use, or may be used, on the Forests each year. The review should include:
    - i. Any new scientific data regarding non-target fish species effects or environmental fate, including peer-reviewed studies and other forms of scientific evidence that may be relevant to Pacific salmon and steelhead.
    - ii. Any changes to EPA-approved pesticide labels (ESA-related and other).
    - iii. Any new legal findings relevant to the use of pesticides.

### **The National Historic Preservation Act**

State Historic Preservation Office consultation has been conducted under the Programmatic Agreement among the USDA Forest Service, Pacific Northwest Region, the Advisory Council on Historic Preservation, and the Oregon State Historic Preservation Office (SHPO) regarding Cultural Resources Management in the State of Oregon by the USDA Forest Service (2004). PDFs require avoidance of impacts to any historic properties or potential historic properties. The Oregon SHPO has received our determination of "no effect" for the action alternatives. Actions with the potential to impact heritage resources under EDRR will be reviewed for effects in accordance with the Programmatic Agreement.

---

### **Clean Water Act and Safe Drinking Water Act**

The selected alternative will protect beneficial uses and meet water quality standards (FSEIS Chapter 2.4). This determination was made because conditions of implementation greatly reduce the likelihood that proposed activities would be capable of exacerbating watershed conditions and affecting water quality:

1. PDFs were designed to minimize or eliminate negative effects, Chapter 2.4. Treatment methods, application rates, and buffers make it highly unlikely that herbicides would contaminate water at any measurable level.
2. Within Riparian Reserves and Riparian Habitat Conservation Areas, hundreds of acres are compromised by the presence of invasive plant species (Tables 45 and 46, Chapter 3.6, FSEIS). The proposed treatments will restore species composition and improve riparian conditions.
3. All planned activities within the Northwest Forest Plan area have been determined to meet or not prevent attainment of the Aquatic Conservation Strategy Objectives and comply with LRMP standards and guidelines (FSEIS pp. 249-256).

A National Pollutant Discharge Elimination System (NPDES) permit is required for herbicide use into water or adjacent conveyances with a hydrologic surface connection to water at the time of herbicide application. This applies to creeks, rivers, lakes, riparian areas, wetland, and other seasonally wet areas when water is present. Project design features and buffers are intended to minimize any pollution discharge to the extent practicable and this project is consistent with current requirements. This 2300-A general permit will be obtained before herbicide is used within 3 feet of waters of the state or flowing ditches that are connected to the waters (<http://www.deq.state.or.us/wq/wqpermit/indinfo.htm>). The information in the FSEIS is sufficient to support the permit application.

### **Executive Orders 11988 and 11990: Floodplains and Wetlands**

The selected alternative does not involve any construction of improvements in wetlands, nor destruction or modifications in wetlands. No floodplain will be occupied, developed or modified. The selected alternative is therefore consistent with these executive orders.

Invasive plant treatments will be implemented using the standards from the 2005 R6 Invasive Plant ROD and site-specific Project Design Features in Chapter 2.4 of the FSEIS.

Invasive plant treatments within riparian areas are discussed in the FSEIS, Chapter 3.6 and 3.7. The selected alternative will promote healthy, invasive species-free riparian areas, but has the highest potential for short-term water quality effects due to dripping of herbicides, localized reductions in shade, and exposed soils, while Alternative 3 has the highest potential for short-term water quality effects due to increased turbidity; effects would last less than six months and there will be no measurable long-term increase in sediment, turbidity, or water temperature, and no measurable change in chemistry (see Table 18, FSEIS). No adverse effects are anticipated to occur to wetlands and floodplains with any of the alternatives.

---

### **Civil Rights and Environmental Justice**

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, directs Federal agencies to address effects accruing in a disproportionate way to minority and low income populations. The FSEIS discusses the potential impacts of this project on these groups (FSEIS Chapter 3.8). With the implementation of either action alternative, there is the potential for some impact to Hispanic, Asian, and American Indian communities. Forestry workers, usually disproportionately Hispanic, will have more exposure to the proposed herbicides than the population at large. Also, harvesters of non-timber forest products tend to come from Asian, Hispanic, and American Indian communities. These groups could be exposed to herbicide treatments in areas available for picking or collecting their products, but the standards and guidelines and PDFs minimize potential impact to human health; increased risk to human health from this project is unlikely, based on the herbicide toxicology analysis in the SERA Risk Assessments, the R6 2005 FEIS, and the layers of caution added to the project.

### **Prime Farmland, Rangeland and Forestland**

No prime farmlands, rangelands, or forestlands exist within the project area. Therefore, there will be no direct, indirect, or cumulative effects to prime lands.

### **Other Laws and Regulations**

Our decision is consistent with all other laws, regulations, and policies guiding invasive plant programs and other management activities on National Forest System lands within the Deschutes and Ochoco National Forests and Crooked River National Grassland.

## **THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE**

Under the National Environmental Policy Act, the agency is required to identify the environmentally preferable alternative (40 CFR 1505.2(b)). This is interpreted to mean the alternative that would cause the least damage to the biological and physical components of the environment, and, which best protects, preserves, and enhances, historic, cultural, and natural resources (Council on Environmental Quality, *Forty Most Asked Question Concerning CEQ's National Environmental Policy Act Regulations*, 46 FR 18026). Factors considered in identifying this alternative include: (1) fulfilling the responsibility of this generation as trustee of the environment for future generations, (2) providing for a productive and aesthetically pleasing environment, (3) attaining the widest range of beneficial uses of the environment without degradation, (4) preserving important natural components of the environment, including biodiversity, (5) balancing population needs and resource use, and (6) enhancing the quality of renewable resources. An agency may discuss preferences among alternatives based on relevant factors, including economic and technical considerations and statutory missions. {40 CFR 1505.2(b)}.

In the case of the Invasive Plant Treatment Project, we have determined that the environmentally preferable alternative is the Proposed Action, Alternative 2. None of the alternatives would cause serious damage to the environment, but Alternative 2 best protects, preserves, and enhances the natural resources of National Forest System land by effectively treating existing invasive plant populations and establishing a strategy for treating newly discovered and newly inventoried invasive plants while the acreage is small.

---

Of the alternatives considered, Alternative 2 best balances NEPA's goals of: 1) attaining the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; and 2) preserving important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice. Our rationale for selecting the Proposed Action is as follows:

- Allows the most effective invasive plant treatments of the 1,892 invasive plant sites to remove and/or reduce invasive plant infestations and to allow the opportunity for native plants to revegetate the treatment areas;
- Permits the most effective invasive plant treatments of newly discovered/newly inventoried invasive plant infestations under the Early Detection/Rapid Response strategy (EDRR) which ensures that invasive plants can be treated quickly and efficiently in the future;
- Complies with the goals and objectives of the Deschutes & Ochoco Land and Resource Management Plans (Forest Plans) and the Crooked River National Grassland Land and Resource Management Plan; and,
- Reflects consideration of the comments expressed by the public agencies, state and local governments, Tribes, and members of the interdisciplinary team.

### **ADMINISTRATIVE REVIEW (APPEAL) OPPORTUNITIES**

This decision is subject to appeal pursuant to 36 CFR 215. The 45-day appeal period begins the day following the date the legal notice of this decision is published in The Bulletin, Bend, Oregon. Only individuals or organizations that submitted comments during the 45-day comment periods (beginning February 2, 2007 and June 10, 2009) may appeal. Notices of appeal must meet the requirements of 36 CFR 215.14. Appeals can be submitted in several forms, but must be received by the Appeal Deciding Officer, Regional Forester, within 45 days from the date of publication of notice of the decision in The Bulletin, Bend, OR. Appeals may be:

- 1) Mailed to: Appeal Deciding Officer, Pacific Northwest Region, USDA Forest Service, Attn. 1570 Appeals, PO Box 3623, Portland, OR 97208-3623;
- 2) Emailed to: [appeals-pacificnorthwest-regional-office@fs.fed.us](mailto:appeals-pacificnorthwest-regional-office@fs.fed.us). Please put APPEAL and the project name in the subject line. Electronic appeals must be submitted as part of an actual e-mail message, or as an attachment in Microsoft Word (.doc), rich text format (.rtf), or portable document format (.pdf) only. E-mails submitted to addresses other than the ones listed above or in formats other than those listed above or containing viruses will be rejected. It is the responsibility of the appellant to confirm receipt of appeals submitted by electronic mail. For electronically mailed appeals, the sender should normally receive an automated electronic acknowledgement from the agency as confirmation of receipt. If the sender does not receive an automated acknowledgement of the receipt of the appeal, it is the sender's responsibility to ensure timely receipt by other means;
- 3) Delivered to: Pacific Northwest Regional Office, 333 S.W. First Avenue, Robert Duncan Plaza Building, Portland, Oregon 97204-3440 between 7:45 AM and 4:30 PM, Monday through Friday except legal holidays; or
- 4) Faxed to: Regional Forester, Attn: 1570 APPEALS at (503) 808-2339.

### IMPLEMENTATION DATE

This project is expected to start in 2012 and run for fifteen years, depending on funding, environmental changes, and other factors. Minor changes may be needed during implementation to better meet on-site resource management and protection objectives. In determining whether and what kind of further NEPA action is required, the Responsible Official will consider the criteria for whether to supplement an existing Environmental Impact Statement in 40 CFR 1502.9(c) and FSH 1909.15, sec. 18, and in particular, whether the proposed change is a substantial change to the intent of the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

Appendix F of the FSEIS displays the implementation plan that will guide site-specific treatments covered under this decision.

### CONTACT

For additional information concerning the specific activities authorized with my decision, you may contact: Deb Mafera, (541)416-6500. Additional information is also available on the project website at: <http://fs.usda.gov/goto/centraloregon/invasive-plants-projects>.

  
\_\_\_\_\_  
John Allen  
Forest Supervisor  
Deschutes National Forest

*5-2-2012*  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Kate Klein  
Forest Supervisor  
Ochoco National Forest and Crooked River National Grassland

*5/2/12*  
\_\_\_\_\_  
Date

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

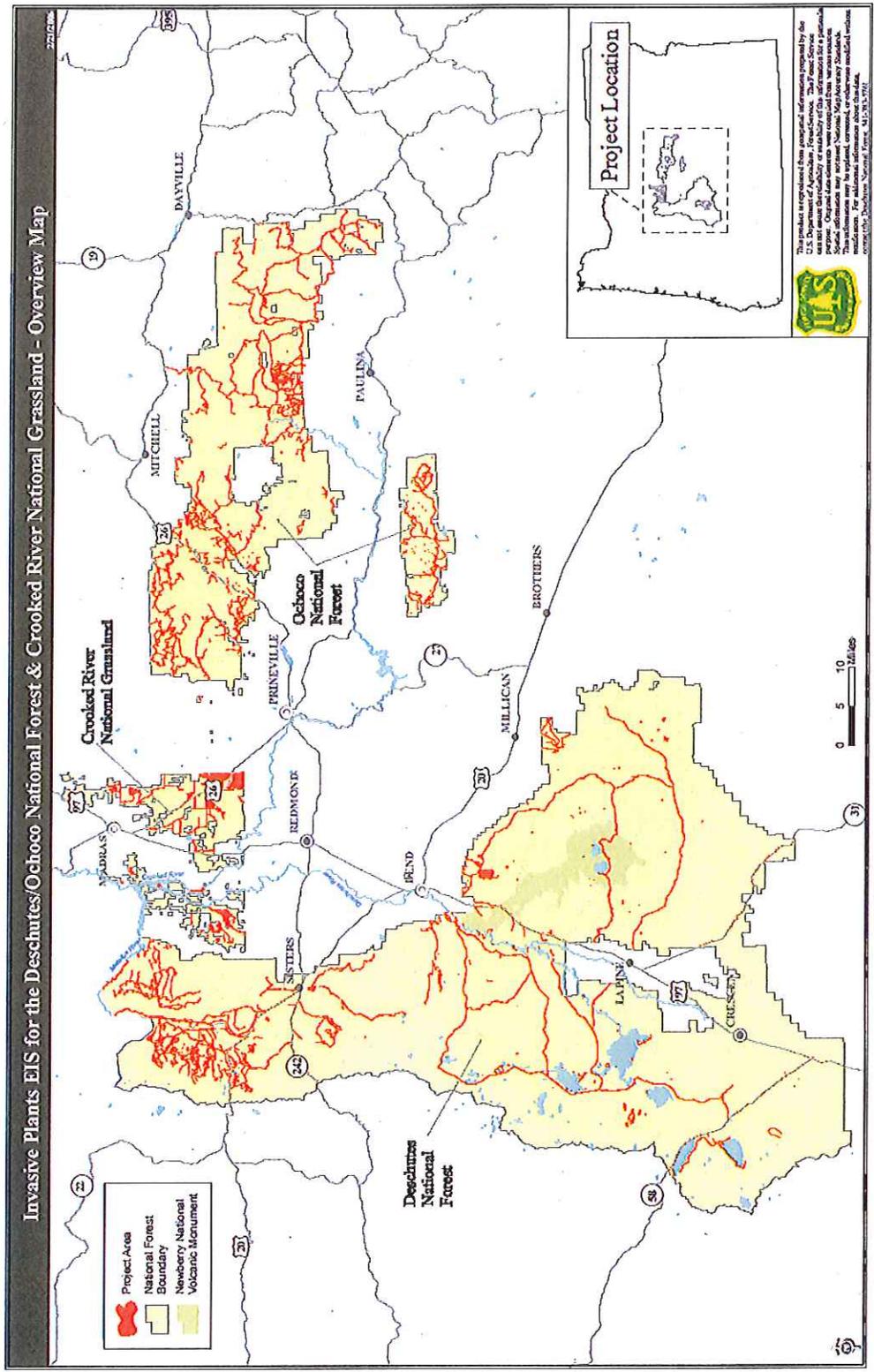


Figure 1. Locator map of the Invasive Plant Treatments project area.

---

## LITERATURE CITED

- Desser, R. 2008. Source and effectiveness of project design features/criteria for herbicide use in invasive plant treatment projects. Forest Service Region Six.
- LaVergne, S. and J. Molofsky. 2004. Reed canary grass (*Phalaris arundinacea*) as a biological model in the study of plant invasions. *Critical Reviews in Plant Sciences* 23(5):415-429.
- Mehta, S.V., R.G. Haight, F.R. Homans, S. Polasky, and R.C. Venette. 2007. Optimal detection and control strategies for invasive species management. *Ecol. Econ.* 61:237-245.
- USDA Forest Service. 2005a. Preventing and Managing Invasive Plants Final Environmental Impact Statement. Pacific Northwest Region Invasive Plant Program.
- USDA Forest Service. 2005b. Preventing and Managing Invasive Plants Final Environmental Impact Statement: Record of Decision. Northwest Region Invasive Plant Program.

## APPENDIX 1. PROJECT DESIGN FEATURES

Purpose	Project Design Feature	Source/Comments
<b>Pre-Project Planning – To ensure project is implemented appropriately</b>		
1.	The nature of invasive plant management requires ongoing project review and evaluation. The location of invasive plants in relation to various environmental components (i.e. plant species of local interest, special forest product gathering areas) is likely to change over the life of the project, thus animal species/habitats of concern, watershed and aquatic resources of concern (sensitive soils, streams, lakes, wetlands, high risk roadsides, municipal watersheds, domestic water sources), places where people gather, and range allotment conditions would be confirmed prior to treatment and appropriate design features would be applied. Apply PDFs (including Terms and Conditions from consultation with regulatory agencies) depending on site conditions.	This approach follows several previous NEPA documents. Implementation Planning discussed in Appendix F.
<b>To Prevent Spread of Invasives from Treatment Activities or Re-Introduction on a Treated Site</b>		
2.	Vehicles and equipment (including personal protective clothing) used for invasive plant treatment activities would be cleaned prior to entering National Forest land.	Deschutes & Ochoco Forest Plan Standard (standard #2 from 2005 R6 ROD)
3.	Where practical, thoroughly clean and inspect all equipment and clothing before moving off treatment areas.	This is a common measure used to prevent spread. (Appendix G)
4.	All invasive plants that are manually excavated after flower bud stage will be bagged and properly disposed of at an approved facility (e.g. landfill).	This is a common measure used to prevent spread.
5.	When applying herbicides, protect non-target vegetation whenever practical in order to minimize the creation of exposed ground and the potential for re-infestation. Minimize means reducing to the lowest level practical.	To reduce further invasive plant infestation at the treated site.
<b>Coordination with other Landowners, Agencies – to ensure neighboring landowners are fully informed about nearby herbicide use and to increase the effectiveness of treatments on multiple ownerships</b>		
6.	The Forest Service would work with owners and managers of neighboring lands to respond to invasive plants that infest multiple ownerships. Treatments within 100 feet of Forest boundaries, including lands over which the Forest has right-of-way easements, would be coordinated with adjacent landowners. Irrigation ditches will be treated like intermittent streams, buffer widths in Tables 15 and 16 will apply. 6.1 Cooperators within the National Forest System will be informed of any proposed treatments within their areas of interest (such as the PNW Research Station for treatments within or adjacent to Research Natural Areas).	To increase effectiveness of treatments on multiple ownerships and ensure neighbors are fully informed of nearby herbicide use.
7.	Herbicide use within 1000 feet (slope distance in source area) of known domestic surface water intakes for in-home use would be coordinated with known water user or manager.	1000 feet selected to respond to public concern. Herbicide use as proposed will not contaminate drinking water supplies.
8.	Municipal watershed agreements would be followed. Coordination with water boards, managing agencies or associations, would occur as required and herbicide use or application method may be excluded or limited in some areas.	See existing municipal agreements. Current agreements are in the project file.

Purpose	Project Design Feature	Source/Comments
<b>To Ensure Effective, Safe, and Proper use of Herbicides and to Limit Potential Adverse Effects on People and the Environment</b>		
<i>Field Operations / Worker Safety</i>		
9.	Herbicides would be used in accordance with label instructions, except where more restrictive measures are required as described below. Herbicide applications will only treat the minimum area necessary to meet site objectives. Herbicide formulations would be limited to those containing one or more of the following 10 active ingredients: chlorsulfuron, clopyralid, glyphosate, imazapic, imazapyr, metsulfuron methyl, picloram, sethoxydim, sulfometuron methyl, and triclopyr. Herbicide application methods include wicking, wiping, injection, spot, and broadcast, as permitted by the product label and these Project Design Features. The use of triclopyr is limited to spot and hand/selective methods. Herbicide carriers (diluent) added by the applicator are limited to water and/or specifically-labeled vegetable oil.	Deschutes & Ochoco LRMP Standard (standard #16 of 2005 R6 ROD); Pesticide Use Handbook 2109.14  Limits potential for adverse effects on people and the environment.
10.	Herbicide use would comply with standards in the <i>Pacific Northwest Regional Invasive Plant Program – Preventing and Managing Invasive Plants</i> ROD (2005), including standards on herbicide selection, restrictions on broadcast use of some herbicides, tank mixing, licensed applicators, and use of adjuvants, surfactants and other additives.	R6 2005 ROD Standards 15, 16, and 18.  Limits potential adverse effects on people and the environment.
11.	Workers will use appropriate personal protective clothing and equipment at all times during application. Traffic control and signing during invasive plant-treatment operations will be used as necessary to ensure safety of workers and the public.	Label and MSDS requirements. Reduces potential for workers to be exposed.
12.	Follow label advisory for effective rate. Lowest effective rates would be used. Additional limits on application rates are as follows: <b>Spot</b> herbicide applications would not exceed application rates for the following herbicide: <ul style="list-style-type: none"> <li>• Sulfometuron methyl would not exceed 0.2 lb a.i./ac.</li> </ul> <b>Broadcast</b> application would not exceed application rates for the following herbicides: <ul style="list-style-type: none"> <li>• Picloram at any rate higher than 0.5 lb. a.i./acre.</li> <li>• Sulfometuron methyl at any rate higher than 0.12 lb a.i. /acre.</li> <li>• NPE surfactant at any rate greater than 0.5 lb a.i./acre.</li> </ul>	Limiting the application rate for these active ingredients will ensure their use stays below levels of concern for workers, the public, fish, wildlife, and other aquatic organisms; these rates are based on results of the SERA Risk Assessments.
13.	Use selective spray techniques, or other targeted application techniques when practical and effective (cut stump, basal spray, etc.).	To further reduce the amount of herbicide applied per acre.
14.	Favor salt/acid formulation of triclopyr (Garlon 3A) over the ester formulation of triclopyr (Garlon 4) wherever equally or more effective.	Garlon 3A has less concern for human health
15.	Herbicide applications would occur when wind velocity is between two and eight miles per hour. The less than 2 mph standard is to avoid spraying during inversions. During application, weather conditions would be monitored periodically by trained personnel.	Typical measure to reduce drift so that herbicide use is avoided during inversions or windy conditions.

Purpose	Project Design Feature	Source/Comments
16.	Use low nozzle pressure, apply as a coarse spray, and use nozzles designed for herbicide application that do not produce a fine droplet spray, e.g., use a nozzle diameter to produce a median droplet diameter of 200-800 microns, with an objective of >500 microns.	Label advisory. These are typical measures to reduce drift. 500 microns minimum selected because this size is modeled to eliminate adverse effects to non-target vegetation 100 feet further from broadcast sites (see Ch. 3 for details).
17.	No spraying would occur if measurable precipitation is occurring or is predicted to occur within 24 hours within the given treatment area, or as label directs. Local conditions to be monitored by the licensed applicators.	Label instruction. Reduces potential for herbicide runoff and ensures effective treatment of target vegetation.
18.	Choose transportation routes with fewer stream crossings, less traffic, and fewer blind curves. Use a guide vehicle when more than one vehicle is traveling to the site, or when large quantities or other circumstances dictate.	To reduce likelihood of spills.
19.	A spill cleanup kit would be available whenever herbicides are transported or stored.	To contain any accidental spills. Source: FSH 2109.
20.	The licensed applicator is responsible for the immediate cleanup of all spills. An Herbicide Transportation and Handling Safety/Spill Response Plan would be the responsibility of the herbicide applicator. <i>At a minimum the plan would:</i>	Source: FSH 2109.14 Reduce likelihood of spills and to contain any spills. Reduce potential for adverse effects from accidental spills.
	<ul style="list-style-type: none"> <li>▪ Address spill prevention and containment.</li> <li>▪ Estimate and limit the daily quantity of herbicides to be transported to treatment sites.</li> <li>▪ Require that impervious material be placed beneath mixing areas in such a manner as to contain small spills associated with mixing/refilling.</li> <li>▪ Require a spill cleanup kit be readily available for herbicide transportation, storage and application (minimum FOSS Spill Tote Universal or equivalent).</li> <li>▪ Outline reporting procedures, including reporting spills to the appropriate regulatory agency.</li> <li>▪ Require that applicators are trained in safe handling and transportation procedures and spill cleanup.</li> <li>▪ Require that equipment used in herbicide storage, transportation and handling are maintained in a leak proof condition.</li> <li>▪ Address transportation routes so that traffic, domestic water sources, and blind curves are avoided to the extent possible.</li> <li>▪ Specify conditions under which guide vehicles would be required.</li> <li>▪ Specify mixing and loading locations away from water bodies so that accidental spills do not contaminate surface waters.</li> <li>▪ Require that spray tanks be mixed or washed further than 300 feet of surface water.</li> <li>▪ Require safe disposal of herbicide containers, following label instructions and State and local laws.</li> </ul>	

Purpose	Project Design Feature	Source/Comments
21.	Estimate and limit the daily quantity of herbicides to be transported to treatment sites.	To reduce potential for large spills.
22.	Spray equipment would be calibrated prior to seasonal start-up and periodically throughout the season to assure accuracy in applications.	To ensure proper application of herbicide.
23.	Minimize traffic in riparian reserves/RHCAs where appropriate.	To minimize trampling, protect riparian habitat, and prevent potential invasive plant spread in riparian areas. RR/RHCA widths incorporates the aquatic influence zone.
24.	Exact fueling sites will be identified prior to implementation of the project, and would be at least 150 feet from lakes, wetlands, or stream channels.	To minimize risk of fuel entering water. The 150' width incorporates the aquatic influence zone.
25.	<p>Some sites may only be reached by water or by crossing streams on foot. The following measures would be used to prevent a spill during water transport.</p> <ul style="list-style-type: none"> <li>• Herbicide would be carried in 1 gallon or smaller plastic containers. The containers would be wrapped in plastic bags and then sealed in a dry-bag. The dry bag would be secured to the watercraft.</li> <li>• Personnel applying herbicide by hand or with a backpack sprayer, or personnel manually pulling or grubbing invasive plants, would avoid, to the extent possible, standing or walking in wetted streams or other water bodies.</li> </ul>	To reduce potential for spill in water.
<i>Public Health / Public Notification</i>		
26.	The public would be notified about upcoming herbicide treatments via the local newspaper, Forest Service website, fliers, individual notification, or posting signs.	Standard #23, R6 2005 ROD. To ensure no inadvertent public contact with herbicides.
<i>Public Health / Municipal Watersheds</i>		
27.	Broadcast application of herbicides will not occur in municipal watersheds without consulting the water agency/association. Herbicide application will be to individual plants by spot spraying, stem injection, wicking or wiping. Invasive species treatments other than manual (hand pulling) and biological (insects) will be coordinated with the municipal department in charge of the water system.	To ensure neighbors are informed; meet requirements of existing municipal agreements.
28.	Herbicides will not be applied within 100 feet of the municipal water intake or within 100 feet of the stream for the first 600 feet above the intake.	To respond to public concern. Herbicide use as proposed for this project would not contaminate drinking water supplies.

Purpose	Project Design Feature	Source/Comments
<i>Public Health / Other Drinking Water Sources</i>		
29.	No herbicide will be applied within 100 feet of a known domestic wells or 200 feet of a domestic spring box. No broadcast application of herbicides or use of picloram or clopyralid will occur within 200 feet of a known domestic well.	To respond to public concern. Based on label advisories and other state drinking water regulations.
29.1	Well and spring box locations needing field verification will be delineated before herbicides are applied within 0.25 mile of approximate point of use. The no herbicide use area for springs may be adjusted to reflect the field verified recharge area.	To prevent accidental overspray of domestic wells and springs.
29.2	Invasive plant treatments would not occur adjacent to waterbodies during Public Health Advisory periods for blue-green algae.	To respond to public concern. Based on advisories and other state water regulations.
30.	The special use permit holder or agency department of record (e.g. recreation or facilities) responsible for the well or spring box will be notified prior to application of herbicides and will mark the diversion point so it can be avoided by the applicator and permittee can modify their use if so desired.	To ensure users are informed and implementation follows PDF #29.
<i>Public Health / Recreation or other High Use Sites</i>		
31.	High use areas, including administrative sites, developed campgrounds, visitor centers, and trailheads would be posted in advance of herbicide application or closed. Areas of potential conflict would be prominently marked on the ground or otherwise posted. Postings would indicate the date of treatments, the herbicide used, Forest Service contact information, and when the areas may be reentered.	Reduces conflicts and ensures no inadvertent public contact with herbicides.
32.	When possible and treatment will still be effective, timing of treatments within high use recreation sites will avoid the normal high use period between June 15 and September 15, (peak use is in July and August).	To reduce conflicts with forest users.
33.	For herbicide use within 100 feet of high-use recreation sites, selective application methods at typical or lower rates of application will be used.	To reduce drift in areas of high use.
34.	Gathering areas, campgrounds, and administrative sites may be closed during and immediately after triclopyr application to eliminate accidental exposures. Extent of closure would be dependent on nature of herbicide used.	To reduce conflicts with forest users.
35.	Limit the number of people, machineries, the number of entries, and by using light-weight machinery within 100 feet of recreation sites.	To reduce impacts to recreation areas by minimizing trampling and soil disturbance and visual impacts.

*Public Health / Special Forest Products Including Cultural Use Plants*

Purpose	Project Design Feature	Source/Comments
36.	Do not apply NPE surfactant at any rate greater than 0.5 lb a.i./acre in known areas of wild food collection. Favor other classes of surfactants wherever they are expected to be effective.	To protect public/worker health. Rate is below thresholds of concern for workers, the public, fish, and other aquatic organisms; rate based on results of USFS 2003 Risk Assessment.
37.	In areas of known special forest products or other wild foods collection application of triclopyr will be limited to direct application to target vegetation only; do not exceed FS typical rate (1.0 a.i./acre); favor salt/acid formulation of triclopyr over the ester formulation of triclopyr wherever it is expected to be effective.	To eliminate scenarios where people could be exposed to harmful doses of triclopyr.
38.	Peak seasons would be avoided when possible (PDF 41), and known cultural plant gathering sites, popular berry and mushroom picking areas would be posted or otherwise marked where treatment with herbicides is occurring during harvest season.	From Appendix Q of R6 2005 FEIS. Eliminates any scenario where people may be exposed to herbicide.
39.	Special forest product gathering areas may be closed for a period of time to minimize inadvertent public contact with herbicide.	To eliminate scenarios where people could be exposed.
40.	Special forest product gatherers would be notified about current herbicide treatment areas when applying for their permits. Such information would be provided in multi-lingual formats depending on the known clientele for the forest.	To ensure no inadvertent public contact with herbicide.
41.	Do not use herbicides where cultural use plants are present during their season of collection, where possible (mostly spring and early summer for root plants and late summer to fall for berries). Fiber and medicinal plants may have different harvest seasons. This measure applies to known collecting areas. Annually consult with Native American Indian tribes so members can be notified prior to gathering cultural plants. When plants are identified by tribes, buffer as for botanical special status species.	To ensure no inadvertent public contact with herbicide occurs and so that cultural use plants are fully protected.
<b>To Protect Soils, Water Quality, Fisheries and Aquatic Organisms</b>		
42.	Oregon Department of Fish and Wildlife (ODFW) Guidelines for Timing of In-Water Work Periods will be followed or negotiated with ODFW for pulling invasive plants located below the bankfull channel or ordinary high water mark. The ODFW in-water work timing guidelines can be found at: <a href="http://www.dfw.state.or.us/lands/inwater">http://www.dfw.state.or.us/lands/inwater</a> .	To reduce potential for causing negative impacts to fish and fish habitat. In-water work periods are designed to protect spawning fish or eggs incubating in the stream.

Purpose	Project Design Feature	Source/Comments
43.	<p>Use only aquatic formulations or low aquatic risk herbicides on saturated soils, or those with seasonally high water tables, where label restrictions allow. Land types in treatment areas identified as having a high water table during parts of or all of the year would be field-checked; treatment methods would be modified based on ground conditions.</p> <p>43.1 No broadcast spraying of picloram, non-aquatic triclopyr, non-aquatic glyphosate or sethoxydim on roads that have a high risk of delivery to water (generally roads within RHCAs).</p>	<p>Source: SERA Risk Assessments; R6 2005 FEIS (Chapter 4.72 &amp; 4.73) and Fisheries Biological Assessment &amp; Biological Opinion.</p> <p>To ensure herbicide is not delivered to streams in concentrations that exceed levels of concern.</p> <p>Compliance with 2011 Biological Opinion Terms &amp; Conditions.</p>
44.	<p>POEA and NPE surfactants would not be used in applications within 100 feet of surface water, wetlands or along roads with ditches that feed into streams.</p>	<p>Protects aquatic organisms. Width is more conservative than the effective buffer (45 feet) identified by Berg (2004).</p>
45.	<p>Do not use picloram, clopyralid or metsulfuron methyl on high porosity soils (texture class 3 or 4) particularly where the water table is shallow. Exceptions include heavily compacted sites located on artificially constructed road and dam structures. See PDF 43 for further restrictions.</p>	<p>Label advisory. To avoid excessive percolation to groundwater or spring sources.</p>
46.	<p>No more than one application of sulfometuron methyl would occur on a given area in a calendar year, except to treat areas missed during the initial application. No more than one application of picloram would occur on a given area every two years, except to treat areas missed during the initial application.</p>	<p>To reduce potential for accumulation in soil. Based on label restriction.</p>
47.	<p>Do not use chlorsulfuron, picloram, and/or sulfometuron methyl on shallow (&lt;12" depth), scabland, or high clay content (texture class 1 – fine texture, refer to Table 41 in Soil Section) soils with low infiltration rates where runoff from storm events could reach surface waters.</p>	<p>Label advisory. To avoid excessive herbicide runoff to reduce potential for entering surface or groundwater.</p>
48.	<p>Deleted due to redundancy with PDF 47.</p>	<p>Deleted.</p>
49.	<p>Ester formulation of triclopyr is not allowed within 150 feet of any perennial water body for Alternative 2, and 300 feet for Alternative 3. Outside of the 150 foot distance, the salt (aquatic) form of triclopyr is preferred over the ester form of triclopyr where it is effective.</p>	<p>Width based on aquatic influence zone. Lower risk herbicides are preferred where effective to protect aquatic organisms, fish, wildlife and human health.</p>
50.	<p>Apply erosion control measures (e.g. silt fences or shut down periods) and native revegetation (e.g., mulching, native grass seeding, planting) for manual treatment where detrimental soil disturbance or de-vegetation may result in the delivery of measurable levels of fine sediment to federally listed fish species' critical habitat.</p>	<p>Common measures to minimize sedimentation.</p>
51.	<p>Implement Mixture Analysis identified in Regional Fisheries Biological Assessment for tank mixtures proposed. The sum of Hazard Quotients (HQ) for tank mixtures shall not exceed 1, and no more than three herbicides may be mixed.</p>	<p>R6 2005 ROD (Standard 16) and Fisheries Biological Assessment</p>

Purpose	Project Design Feature	Source/Comments
52.	All herbicide storage, chemical mixing, refilling and post-application equipment cleaning is completed at least 300 feet from live water, domestic wells, or domestic spring boxes, and in such a manner as to prevent the potential contamination of any riparian area, perennial or intermittent waterway, ephemeral waterway, wetland, or drinking water.	To prevent water contamination. 300 feet includes Riparian Reserve /RHCAs. Incorporates Washington State wellhead protection protocol.
53.	Limit the number of workers and the number of entries in areas within 100 feet of streams.	To minimize trampling in riparian areas and fish habitat.
54.	Use of herbicides within 100 feet of perennial waterbodies only allowed up to the typical application rate (see Table 12 and associated text). Minimum distance to water is 10 feet for spot spraying herbicide. Within 10 feet, only hand application (e.g. wicking/wiping) is allowed in Alternative 2. See Table 14 for fisheries-specific Project Design Features concerning specific herbicides and use rates within certain watersheds.	Further protects aquatic organisms by reducing amounts of herbicide applied near waterbodies available to runoff.
55.	Hand pulling of invasive plants adjacent to streams known to contain spawning steelhead populations would be prohibited within the bankfull channel from February 15 <sup>th</sup> to July 15 <sup>th</sup> . Pulling of invasive plants adjacent to streams known to contain spawning bull trout populations would be prohibited within the bankfull channel from August 15 <sup>th</sup> to May 15 <sup>th</sup> .	To reduce disturbance to Threatened/Endangered fish during spawning.
56.	Use selected buffers and application methods from Tables 14 and 15 below for application of herbicides. Buffers can be increased on a site specific basis if analysis determines that characteristics such as soils, slope, groundwater depth, etc indicate high potential for the contamination of groundwater or surface waters. Forest Service personnel will identify any steps necessary to identify riparian areas prior to implementation of herbicide application. This may involve flagging, particularly in listed fish habitat. Forest Service specialists will work closely with herbicide applicators to ensure project design features are implemented.	Based on label advisories and SERA risk assessments. Buffers correspond to herbicide characteristics. Complies with Standards #19 and 20 from the R6 2005 ROD. To reduce likelihood that herbicides will enter surface waters in concentrations of concern.

**To Ensure the Protection of Threatened, Endangered, Sensitive (TES) or Survey and Manage Plants**

57.	Surveys will be conducted for Threatened, Endangered, Sensitive plants prior to invasive plant treatments if: 1) the area has not already been surveyed for these species; and 2) if the area contains likely habitat for any of these species; and 3) if the proposed treatments are likely to have a negative impact to individual plants. Surveys will be conducted in the area within 100 ft. from where broadcast application of herbicides is planned and within 35 ft. for all other treatment types (herbicide spot spray, manual, etc.).	Forest Service Manual 2670; 35 foot distance more conservative than Marrs et al (1989). To ensure sensitive species are protected and surveys are conducted when appropriate. 2001 Survey & Manage ROD as modified by 2011 Settlement Agreement.
-----	---	--

Purpose	Project Design Feature	Source/Comments
58.	Within TES and Survey and Manage plant populations, prior to herbicide treatments where there are potential effects from the herbicide, a USDA Forest Service Botanist will identify the steps that need to be taken to protect these plants. This may involve avoiding these plant populations or individuals (i.e., identify/map areas around TES plant populations that must be avoided, or flag individual plants), and/or altering treatments (e.g., switching from herbicide to manual treatments within and adjacent to a TES plant population). Forest Service Botanists will work closely with herbicide applicators to ensure project design features are implemented, will monitor and document the results, and use adaptive management to refine treatments as needed to adequately protect TES and Survey and Manage plants.	Standard practice by Deschutes & Ochoco botanists for managing rare plants per Forest Service Manual 2620. To ensure appropriate steps are taken during implementation to protect sensitive plants.
59.	For manual treatments within TES and Survey and Manage plant populations, a Forest Service Botanist will instruct workers in the proper identification of plant species to be avoided and will monitor the manual treatments to ensure that individual TES plants are protected.	Involvement of professional botanists to ensure that TES and other rare plants are not pulled or otherwise damaged during manual treatments. Standard practice on the Forests.
60.	Forest Service Botanists will determine if buffers are needed to protect TES and Survey and Manage plant species from herbicide spraying. The need for buffers will depend on the species to be protected, the invasive plant species to be treated, and the type of treatment that would be used. If buffers are determined to be needed, the buffer widths in PDF 67 will be employed.	Standard practice on the Forests. To ensure protection of TES and Survey and Manage plants.
61.	<p>Protection buffer widths for TES and Survey and Manage plant species:</p> <p><i>Greater than 100 feet:</i> All treatments permitted. All herbicides are permitted.</p> <p><i>100 to 35 feet:</i> No herbicide broadcast spraying. Spot spray and other selective herbicide techniques can be used.</p> <p><i>Between 35 and 0 feet:</i> No use of chlorsulfuron, imazapic, imazapyr, metsulfuron methyl, picloram, and sulfometuron methyl permitted. Clopyralid, sethoxydim, and triclopyr may be utilized if plant is not susceptible to these selective herbicides. Spot spray of glyphosate may be used if conducted when a rare plant is shielded or covered.</p> <p>For herbicide treatment, use protective measures such as low-pressure spot-spray, directed spray applications, backpack applications, and/or protective barrier to prevent herbicide residues from impacting these species.</p>	<p>Minimize likelihood of herbicides inadvertently reaching TES and Survey and Manage plants.</p> <p>Buffer distances based on Thistle (2006) and Marrs et al. (1989).</p>
62.	In order to protect TES and Survey and Manage plants in saturated or wet soils at the time of application, do not use picloram or imazapyr due to their mobility.	Label advisories to reduce potential for runoff and effects to non-targets.
63.	Use of sulfonylurea herbicides (chlorsulfuron, sulfometuron methyl, metsulfuron methyl) will require soils, adjacent vegetation, and site conditions to be evaluated prior to treatment. Use spot spray or wick method for 1-2 years after a severe disturbance (eg wildfire) or until the area is revegetated. Do not use herbicides when exposed soils are powdery and dry and rainfall is likely to be of high intensity.	To reduce potential for wind and water transport, providing protection to non-target plants.

Purpose	Project Design Feature	Source/Comments
64.	Do not apply imazapic to areas treated within the previous 18 months with chlorsulfuron, metsulfuron methyl, sulfometuron methyl, or imazapyr in areas where reseeding of susceptible species is to occur.	To avoid damage to non-target plants. Label caution states "for the previous year". 18 months provides higher level of protection.
65.	When using sulfonyleurea herbicides (chlorsulfuron, metsulfuron methyl, and sulfometuron methyl), use lowest application rates that will still be effective and do not use within 50 feet of known Sensitive, Survey and Manage species, and other unique plant species identified by Forest Service botanists for protection.	To protect non-target vegetation from drift effects including wind erosion. More conservative than Mars et al (1989).
<b>To Ensure Protection of Heritage Resources</b>		
66.	Do not use harrowing or discing methods in eligible or unevaluated archaeological sites. Refer to implementation plan for avoidance measures in specific Project Area Units.	To protect cultural resources.
67.	Do not use prescribed burning where unevaluated or known significant historic materials are present.	To protect cultural resources.
<b>To Ensure Protection of Range Resources</b>		
68.	Permittees will be made aware of annual treatment actions at the permittee annual operating plan meetings and/or if requested, notified in advance of spray dates.	The range label restrictions are included in herbicide info table (Appendix D to the R6 FEIS).
69.	Protection Buffer Widths apply to permanent water sources used for livestock watering, such as water troughs associated with spring developments, reservoirs, trick tanks, and other sources developed for range use and listed as a range improvement. Temporary watering developments such as watersets will have no restrictions except when in use and as needed to follow label restrictions. <b>Greater than 100 feet:</b> All treatments permitted. <b>100 to 10 feet:</b> All treatments, except broadcast spraying permitted. For herbicide treatment, use protective measures such as low-pressure spot-spray, directed spray applications, backpack applications, and/or protective barrier to prevent herbicide residues from impacting these areas. <b>Less than 10 feet:</b> Use selective hand application methods such as wiping and wicking.	The measure will also protect wildlife that may use stock watering sources.
70.	Some of the approved herbicides have use restrictions associated with domestic livestock that will be followed on public rangelands as listed in Grazing Restrictions Table, Appendix D	Label restrictions.

**Purpose****Project Design Feature****Source/Comments****To Protect Wildlife***Northern Spotted Owl*

71. Disturbing work activities (i.e. chainsaw, heavy equipment, etc) will not take place within 1/4 mile of the nest site or activity center of all known pairs or resident singles between March 1 and September 30. If activities occur within the nesting period, further consultation is required. The boundary of the 1/4-mile area may be modified by the District Wildlife Biologist based on topographic breaks or other site-specific information (generally, a 125-acre area will be protected). This condition may be waived in a particular year if nesting or reproductive success surveys reveal that spotted owls are non-nesting or that no young are present that year. Waivers are valid only until March 1 of the following year.

To minimize or eliminate disturbance as required by the Programmatic BA (USFS 2010); distance is known to reduce sound levels and therefore disturbance.

Source: Livezey 2003, USFS 2010.

*Please note: there is no seasonal restriction on the use of roadside broadcast sprayers, as they fall within ambient noise levels.*

Disturbance/disruption distances for Northern spotted owls during the breeding period (March 1 – September 30):

Activity	Disturbance distance	Disruption Distances	
	Breeding period (March 1 – September 30)	Spotted owl critical breeding period (March 1 – July 15)	Remainder of the spotted owl breeding period (July 16 – September 30)
Use of Chainsaws	440 yards (0.25 mile)	65 yards	0 yards
Use of heavy equipment	440 yards (0.25 mile)	35 yards	0 yards

*Northern Bald Eagle*

72. Invasive plant treatment activities that cause disturbance in excess of base levels that were occurring in 2001 will not take place within 1/4 mile non line-of-sight or 1/2 mile line-of-sight of known bald eagle nests between January 1 and August 31. This condition may be waived in a particular year if nesting or reproductive success surveys reveal that bald eagles are non-nesting or that no young are present that year. Waivers are valid only until January 1 of the following year.
73. Project activities that have potential to disturb bald eagle winter roosts, shall be restricted within 1200 ft of the roosting area from November 1 to April 30th.

To minimize or eliminate disturbance as required by Programmatic BA (USFS 2006f) and National Bald Eagle Guidelines (USFWS 2007).

To minimize or eliminate disturbance. Source: Programmatic BA (USFS 2006f).

*Greater Sage Grouse*

74. Do not use glyphosate or NPE-based surfactants in areas where sage grouse may forage (consult with District wildlife biologist). Limit the application rate of glyphosate to the typical rate of 2 lbs a.i./acre

To eliminate risk of exposure. Biologist consult is to determine areas where grouse forage. Source: BE for Des/Och Invasive Plant FSEIS

Purpose	Project Design Feature	Source/Comments
75.	Human activities within 0.3 mile of leks will be prohibited from the period of one hour before sunrise until four hours after sunrise and one hour before sunset until one hour after sunset from February 15 – May 15.	To avoid disturbance that may interrupt males while they are strutting on leks. Source: USFS 2003, Connelly et al. 2000.
76.	Do not conduct any vegetation treatments or improvement project in breeding habitats from February 15 – June 30.	To avoid disturbance during breeding season. Source: USFWS 2003, Connelly et al. 2000.
<i>Oregon and Columbia Spotted Frog</i>		
77.	Do not broadcast spray POEA or NPE-based surfactants, in or within 100 feet of occupied spotted frog habitat or suitable wetland habitat. Coordinate treatment methods, timing, and location with local Biologist prior to implementation.	To minimize or eliminate risk of exposure. Source: BE for Deschutes/Ochoco Invasive Plant FSEIS.
<i>American Peregrine Falcon</i>		
78.	All invasive plant treatments would be seasonally prohibited within 0.5 miles of peregrine nest sites (primary nest zone). Invasive plant treatments involving motorized equipment and/or vehicles would be seasonally prohibited within 1.5 miles of known nest sites (secondary nest zones). This may include activities such as mulching, chainsaws, vehicles (with or without boom spray equipment) or other mechanically-based invasive plant treatment. Non-mechanized or low disturbance invasive plant activities (such as spot spray, hand pull, etc.) may occur within the secondary nest zone, but would be coordinated with the wildlife biologist on a case-by-case basis to determine potential disturbance to nesting falcons and identify mitigating measures, if necessary.	To minimize or eliminate disturbance during breeding season. Source: J. Pagel, unpublished data.
79.	Seasonal restrictions would be waived within primary and secondary nest zones if the site is unoccupied or if nesting efforts fail and monitoring indicates no further nesting behavior.	Source: J. Pagel, unpublished data.
80.	Season restrictions would apply during the periods listed below based on the following elevations: Low elevation sites (1000-2000 ft)      01 Jan – 01 July Medium elevation sites (2001 – 4000 ft)      15 Jan – 31 July Upper elevation sites (4001 + ft)      01 Feb – 15 Aug Seasonal restrictions would be extended if monitoring indicates late season nesting, asynchronous hatching leading to late fledging, or recycle behavior which indicates that late nesting and fledging would occur.	Source: J. Pagel, unpublished data.
81.	Protection of nest sites shall be provided until at least two weeks after all young have fledged.	To protect fledglings. Source: J. Pagel, published data.
82.	Clopyralid would not be used within 1.5 miles of peregrine nest more than once per year. Picloram would not be used more than once every two years.	To minimize risk of exposure to hexachlorobenzene (HCB). Source: J. Pagel, unpublished data.
<i>Wetland Habitat (yellow rail, tricolored blackbird, and waterfowl)</i>		
83.	Do not broadcast or spot spray NPE-based surfactants in or adjacent to suitable habitat. Do not exceed typical application rates of glyphosate (2 lbs a.i./acre).	To eliminate risk of exposure. Source: BE for Des/Och Invasive Plant FSEIS.

---

**Purpose**

**Project Design Feature**

**Source/Comments**

*Yellow Rail*

84. At known breeding sites, no disturbance between May 15 and September 15, unless local biologist evaluates sites to modify permitted disturbance dates. To avoid disturbing nesting birds of crushing nests or eggs. Source: Popper & Stern 2000; J. Kittrell, pers. comm.
85. Do not use NPE-based surfactants in known breeding or foraging areas. To eliminate risk of exposure. Source: BE for Des/Och Invasive Plant FSEIS.

*Pygmy Rabbit*

86. Activities in suitable burrowing habitat for pygmy rabbits will be restricted to one or two persons within suspected burrow areas, no heavy equipment, and manual or herbicide techniques only. To minimize chances of burrow collapse from individuals walking in burrow areas. Source: professional judgment.
87. Do not use NPE-based surfactants in areas where pygmy rabbits may forage. (Consult District Wildlife Biologist) To eliminate risk of exposure. Source: BE for Des/Och Invasive Plant FSEIS.

*Raptors and Great Blue Heron*

88. Active nest sites should be protected from disturbance above ambient levels during the dates specified. Local biologist will determine appropriate distances for planned operations prior to implementation. To minimize or eliminate disturbance to nesting raptors and herons. Source: Deschutes LRMP.
- Golden eagle February 1 – August 15
  - Osprey April 1 – August 31
  - Red-tail hawk March 1 – August 31
  - Northern goshawk March 1 – August 31
  - Cooper's hawk April 15 – August 31
  - Sharp-shinned hawk April 15 – August 31
  - Prairie falcon March 1 – August 1
  - Great gray owl March 1 – June 30
  - Great blue heron March 1 – August 31

**To Protect Air Quality**

89. All prescribed burning operations would be coordinated with the Oregon State Department of Environmental Quality and the Oregon State Department of Forestry through the State of Oregon smoke management program. State requirement
90. Burn areas adjacent to private land would be patrolled following ignition and daily thereafter until the prescribed fire manager determines there is no threat to private land. Standard precaution for prescribed burning
91. Site-specific information (including fuels loads) about all prescribed burning units would be entered into the State of Oregon's regional smoke management database, along with observations of environmental conditions taken during burn implementation. This information would be used to determine the amount of emissions produced, and ensure compliance with Oregon smoke management guidelines and the annual limitation on emissions entered into with the other Oregon Blue Mountain Forests. State requirement