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Record of Decision

Site-Specific Invasive Plant Treatments for Mt. Hood National Forest and Columbia River Gorge National Scenic Area in Oregon, including Forest Plan Amendment #16

**Mt. Hood National Forest and Columbia River Gorge
National Scenic Area**

Clackamas, Hood River, Multnomah, and Wasco Counties



**Site-Specific Invasive Plant Treatments for
Mt. Hood National Forest and
Columbia River Gorge National Scenic Area in Oregon,
Including Forest Plan Amendment #16**

RECORD OF DECISION
and Finding of Non-Significant Forest Plan Amendment

USDA Forest Service
Mt. Hood National Forest and Columbia River Gorge National Scenic Area in Oregon
Clackamas, Hood River, Multnomah, and Wasco counties

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<http://www.fs.fed.us/r6/invasiveplant-eis/site-specific/MTH/>

RECORD OF DECISION
and
FINDING OF NON-SIGNIFICANT FOREST PLAN AMENDMENT

for the

Site-Specific Invasive Plant Treatments for
Mt. Hood National Forest and
Columbia River Gorge National Scenic Area in Oregon,
including Forest Plan Amendment #16

USDA Forest Service
Mt. Hood National Forest and
Columbia River Gorge National Scenic Area in Oregon
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1.0 INTRODUCTION

The Final Environmental Impact Statement (FEIS) for site-specific invasive plant treatments applies to the entirety of the Mt. Hood National Forest (Forest) and the Columbia River Gorge National Scenic Area in Oregon (Scenic Area). The majority of the project area is located in Multnomah, Clackamas, Hood River, and Wasco counties. Small portions adjacent to the Willamette National Forest are in Marion and Jefferson counties. The lands of the Forest total a little more than one million acres, with more acreage on the westside of the Cascade Mountain Range. The National Forest System lands within the Scenic Area total 71,000 acres, with approximately 39,000 acres in Oregon.

This FEIS proposes to treat approximately 13,000 acres at 208 treatment areas, using integrated weed management methods. See Appendix 1 for maps of the proposed treatment areas¹. The methods include a combination of manual (e.g., hand pulling, cutting), mechanical (e.g., mowing, brushing, weed eating), cultural (goat grazing), and herbicide (e.g., broadcast spraying, spot spraying) treatments. The site-specific treatments address inventoried invasive plant species as well as additional invasive plant species that may be treated under the Early Detection / Rapid Response strategy (EDRR). The invasive plant inventory on the Forest and Scenic Area analyzed in this EIS was completed in November 2004.

¹ Individual treatment areas may be difficult to determined on the printed maps in the appendix. Treatment areas can be seen at a larger scale on the project website: <http://www.fs.fed.us/r6/invasiveplant-eis/site-specific/MTH/>.

Throughout all phases of this project, the interdisciplinary team (IDT) followed a set of guiding principles that we established. The guiding principles follow.

- In treating invasive plants, our highest priority will be to minimize risks to human health; drinking water; and botanical, wildlife or aquatic species.
- Herbicide treatments will be used when necessary and in combination with non-herbicide methods to increase treatment and cost effectiveness.
- We will notify the public prior to using herbicides through announcements in local newspapers and by posting treatment areas at access points.
- This decision does not authorize aerial application of herbicides.
- Only herbicides analyzed in this Environmental Impact Statement (EIS) will be used.
- We will employ rapid response to new invaders using treatment methods and guidelines established within this EIS.
- Site restoration will be considered in invasive plant treatment prescriptions.

All invasive plant treatments proposed will be implemented in conjunction with on-going invasive plant management efforts, including prevention practices. The *Pacific Northwest Region Invasive Plant Program – Preventing and Managing Invasive Plants Record of Decision* (Invasive Plant ROD [USDA Forest Service, 2005b]) provides new prevention standards for the Forest and Scenic Area. These prevention practices include cleaning heavy equipment, using weed-free straw and mulch, using palletized or certified weed free feed, and inspecting active gravel, fill, sand stockpiles, quarry sites, and borrow material (See FEIS, Appendix A). In addition, the Forest and Scenic Area have local practices to prevent the invasion and/or spread of invasive plants. These standards incorporating prevention into planning, contracts and permits; utilizing weed-free plant material; distributing information; preventing invasive in areas with soil disturbance; and inspecting stockpiled gravel or rock (See FEIS, Appendix D).

2.0 DECISION

After careful review and consideration of the public comments and analyses disclosed in the *Site-Specific Invasive Plant Treatments for Mt. Hood National Forest and Columbia River Gorge National Scenic Area in Oregon, including Forest Plan Amendment #16* Final Environmental Impact Statement (FEIS) and project file, we have decided to select the Proposed Action (Alternative 2) as described in the FEIS, Chapter 2, Section 2.1.3 as our Selected Alternative. Our decision also includes a non-significant Forest Plan Amendment, which amends six standards within the Mt. Hood Forest Land and Resource Management Plan (FW-076, A2-082, A12-031, B5-041, B7-070, Amendment #7) to allow for careful and targeted herbicide use to treat the invasive plants identified, in conjunction with the required Project Design Criteria and according to the standards from the Invasive Plant ROD (2005b).

As part of our decision, we will implement the Project Design Criteria (PDC), including the Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources (see FEIS, Appendix M) in order to minimize or eliminate the effects of the invasive plant treatments. See Appendix 2 for a list of the PDC. Also, we will implement monitoring measures (see FEIS, Chapter 2, Section 2.3) to ensure our decision is carefully tracked during implementation. Finally, our decision includes an adaptive management approach to alter proposed invasive plant treatments and to treat invasive plant sites not yet discovered. This adaptive management approach, the Early Detection / Rapid Response strategy (EDRR), is summarized in FEIS, Chapter 1, Section 1.3, Figure 1-4.

The following table summarizes the main components and outcomes of the decision.

Table 1: Summary of the Select Alternative

Treatment acres of known inventoried areas	12,964 acres
Broadcast (boom) herbicide treatments	10,220 acres (79%)
Hand/selective herbicide treatments only	2,694 acres (21%)
Non-herbicide treatment methods only	50 acres (1%)
Estimated effectiveness of proposed treatments	80%
Overall treatment cap, including known inventory and EDRR acres	30,000 acres over 15 years
Annual treatment cap	13,000 acres
Annual fifth field watershed treatment cap	3% per year per fifth field watershed
Riparian reserve treatment cap	40% of the total area treated in each fifth field watershed
Overall riparian reserve treatment cap	5,000 acres per year
Acres of restoration to native plant communities	12,964 acres
Active restoration	7,256 acres
Passive restoration	5,708 acres
Cost of treatments	\$4.3 million
Number of full-time jobs created (\$20,000 per year)	94 jobs
Acres of herbicide treatment in riparian reserves	5,026 acres
Acres of herbicide treatment within aquatic influence zone	2,114 acres
Number of treatment sites with higher risk of effects to aquatic organisms	14 sites
Acres of treatment in late-successional reserves	2,373 acres
Number of sites with higher risk of effects to special status plant species	13 sites
Number of sites with higher risk to culturally significant plant species	8 sites
Acres of treatment in designated Wilderness Areas	15 acres
Acres of herbicide treatment in Wild & Scenic River Corridors	1,465 acres
Forest Plan Amendment for Herbicide Use	Yes

3.0 REASONS FOR THE DECISION

We carefully considered the issues and concerns raised by those who participated and commented in this planning process. We considered the eight alternatives; three were analyzed in detail and five were considered but eliminated from detailed study for reasons stated in FEIS, Chapter 2, Section 2.5. The following narrative presents why we selected the Proposed Action (Alternative 2), and why we did not select the No Action Alternative (Alternative 1) or the Restricted Herbicide Use Alternative (Alternative 3). Also, we discuss how our decision responds to the purpose and need, layers of caution in herbicide use, and monitoring framework, as well as how we considered the issues most relevant to us in making the decision.

The basis for the decision is the ability to meet the purpose and need for action with acceptable impacts as analyzed in FEIS, Chapter 3. The purpose this project is to eradicate, control and contain invasive plant infestations, to reverse the negative impacts caused by the invasive plants, and to restore healthy, native plant communities and function at the impacted sites in a cost-effective manner that meets current management direction. There is an underlying need on the Forest and Scenic Area for:

1. Reduction of invasive plant species at the 208 known sites on the Forest and Scenic Area by utilizing the treatment strategies of eradicate, control, contain, and suppress, and
2. Timely treatment of new/additional invasive plant sites that may be identified in the future through an Early Detection / Rapid Response strategy.

Restoration of healthy, native communities and functions at sites impacted by invasive plants will occur as a connected action.

3.1. Reasons for Not Selecting the No Action Alternative (Alternative 1)

We considered, but did not select the No Action Alternative (Alternative 1) which maintains current management direction. This alternative does not meet the purpose and need. Under the current management direction, the invasive plant infestations have expanded on the Forest and Scenic Area creating the need to treat the 208 known sites. Without additional treatments, invasive plant populations will continue to spread on the Forest and Scenic Area compromising our ability to manage the Forest and Scenic Area for healthy native plant communities and ecosystems, and contributing to the spread of invasive plants to neighboring lands. The spread of invasive plants to neighboring lands can have a significant economic impact to adjacent landowners (see FEIS, Chapter 3, Section 3.7.1). In addition, under Alternative 1, only manual and mechanical methods can be used to treat new/additional invasive plant sites. These methods often are ineffective as explained in Chapter 3, Section 3.6. Overall, the current treatment methods are very limited and do not include herbicide treatments, in most circumstances, which results in ineffective treatments and continued threats to healthy, native communities and functions as demonstrated by the analysis contained in FEIS, Chapter 3.

3.2. Reasons for Not Selecting Restricted Herbicide Use Alternative (Alternative 3)

We considered, but did not select the Restrict Herbicide Use Alternative (Alternative 3) which emphasizes manual and mechanical treatments with limited herbicide use because it is not as responsive to the need to reduce the invasive plant species at the 208 known sites or to treat new/additional invasive plant sites. Also, in many cases, manual and mechanical treatments will not enable us to meet the proposed treatment strategies of eradicate, control, contain, and suppress. Without effective treatments, the ability to restore healthy, native communities and functions at sites impacted by invasive plants will be compromised.

Both Alternative 2 and 3 included Project Design Criteria (PDC) which are a set of required, implementation design criteria applied to projects to ensure that the project is done according to environmental standards and adverse effects are eliminated or minimized. As such, both alternatives allow for the treatment of invasive plants while protecting human health and the environment. We recognize that Alternative 3 reduces the amount of herbicide that is introduced to the Forest and Scenic Area, including to recreationalists and forest workers. The analysis contained in FEIS, Chapter 3 demonstrates that under no alternative is human health threatened or compromised. This is of the utmost importance to us and can not be compromised. Regarding the environment, the analysis contained in FEIS, Chapter 3, demonstrates that the impacts are limited under both Alternatives 2 and 3. Given the increased treatment effectiveness and benefit to native plant communities, we feel the level of risk in Alternative 2 is acceptable and that the reduced herbicide amounts presented in Alternative 3 are unnecessary.

3.3. Reasons for Selecting the Proposed Action (Alternative 2)

3.3.1. Context for Herbicide Use

Alternatives 2 and 3 incorporate a risk reduction framework to ensure the safe and effective use of herbicides. Figure 1 displays the layers of caution that are integrated into risk reduction framework for herbicide use in the USDA Forest Service, Pacific Northwest Region. First, label requirements, federal and state laws, and the EPA approval process provide an initial level of caution regarding herbicide use. Next, the SERA Risk Assessments (2001b, 2003a, 2003b, 2003c, 2004a, 2004b, 2004c, 2004d, 2004e, 2004f) disclosed hazards associated with worst-case herbicide conditions (maximum exposure allowed by the label). The Invasive Plant FEIS (2005a) included an additional margin of safety by reducing the level herbicide exposure considered to be of concern to fish and wildlife. The Invasive Plant ROD (2005b) adopted standards to minimize or eliminate risks to people and the environment. This EIS is designed to comply with the Invasive Plant ROD standards (2005b; FEIS, Appendix A). Finally, the PDC further reduce the risks associated with herbicide treatments by eliminating or minimizing as much as possible the impacts to the environment (FEIS, Chapter 2, Section 2.2). This risk reduction framework ensures that the effects from using herbicides are minimized and that herbicide use is chosen carefully. We believe the safe and effective use of herbicides is paramount. As such,+ this framework is a key component of the Selected Alternative.

Figure 1: Layers of Caution Integrated Into Herbicide Use.



In addition to the risk reduction framework, invasive plant treatments will be implemented in conjunction with existing prevention practices. Many public comments focused on the importance and necessity of preventing the introduction and spread of invasive plants. Prevention is an important component of invasive plant management and integral to implementing successful treatments. The Forest and Scenic Area have a set of prevention standards that are incorporated into management activities on both units (See FEIS, Appendix D). In addition, both the Forest and Scenic Area are implementing new prevention standards and guidelines through the adoption of the Invasive Plant ROD (2005b), which includes goals, objectives, and standards emphasizing prevention and early detection. Goal 1 in the Invasive Plant ROD (2005b) states: “Protect ecosystems from the impacts of invasive plants through an integrated approach that emphasizes prevention, early detection, and early treatment.” Goal 2 states: “Minimize the creation of conditions that favor invasive plant introduction, establishment and spread during land management actions and land use activities. Continually review and adjust land management practices to help reduce the creation of conditions that favor invasive plant communities.”

The risk reduction framework and prevention standards form the foundation of the proposed site-specific invasive plant treatments, including proposed herbicide treatments, which are described in the alternative discussion that follows.

3.3.2. Purpose and Need for Action

The majority of people agreed with the goals of the desired future condition: to retain healthy native plant communities that are diverse and resilient; to restore ecosystems that are being damaged; and to reduce the need of invasive plant treatment efforts. Some people felt strongly about limiting the use of herbicide in the treatment of invasive plants, while others felt that the proposed treatments were not aggressive enough and encouraged additional use of herbicides. Many people were concerned about the effects of herbicide treatments to human health and the environment. We have heard and considered these strongly held viewpoints. We believe that we have chosen the best course of action to meet the needs identified for land management while addressing many of the public concerns. Based on the considerations discussed below, we believe the decision affirmatively addresses and fulfills the purpose and need for action.

- Reduction of invasive plant species at the 208 known sites on the Forest and Scenic Area by utilizing the treatment strategies of eradicate, control, contain, and suppress.

This decision authorizes the integrated weed management (IWM) of 208 sites on the Forest and Scenic Area. IWM is a process by which one selects and applies a combination of treatment methods (manual, mechanical, cultural [goat grazing] and herbicide) that, together, will control a particular invasive plant species or infestation efficiently and effectively with minimum adverse impacts to non-target organisms.

Our decision firmly addresses the need to effectively reduce the invasive plant species at the 208 known sites while achieving the treatment strategies. Approximately 5,400 acres (85 sites) have a treatment strategy of eradicate, meaning to attempt to totally eliminate an invasive plant species from the Forest and Scenic Area; and approximately 7,700 acres (123 sites) have a treatments strategy of control, meaning to reduce the infestation over time.

As the analysis in FEIS, Chapter 3 demonstrates herbicide treatments are necessary to eradicate some invasive plant species (e.g., knotweed species). Inaction or delay of implementing these invasive plant treatments increases the number and extent of invasive plant infestations, which in turn reduces the extent of healthy, native plant communities and impacts to other resources on the Forest and Scenic Area. Also, inaction or delay of implementing may lead to the spread of invasive plants from National Forest System lands to other land ownerships, which in turn impacts the economic benefits received from the lands and transfers the problem and expense of treating the invasive plants to our neighbors. We intend to treat the known invasive plant sites as soon as practicable to maximize the effectiveness of treatment and minimize the expenses associated with treatment.

- Timely treatment of new/additional invasive plant sites that may be identified in the future through the EDRR strategy.

Both Alternatives 2 and 3 contain an EDRR, a process by which new infestations are identified, characterized, evaluated, and by which an effective treatment that is analyzed in the FEIS is implemented. The EDRR is based on the premise that the impacts of similar treatments are predictable, even though the precise location or timing of the treatment may be unpredictable. This strategy is needed because:

1) the precise location of individual target plants is subject to rapid and/or unpredictable change; and 2) infestations may grow during the time it typically takes to prepare NEPA documentation from start to finish (6 to 12 months). Invasive plant sites that are discovered subsequent to the last invasive plant inventory, completed in November 2004, will require evaluation to determine that the invasive plants treatments and environmental impacts are consistent with those analyzed in the FEIS. If the sites and impacts are found to be consistent, then these new infestations can be treated under this NEPA decision. Consistency will be determined using the model presented in FEIS, Chapter 1, Figure 1-4; approved by us as the responsible officials (Forest Supervisor or Area Manager); and reported to the public as required in FEIS, Chapter 2, PDC D.3 and D.4.

The EDRR included in Alternative 2 allows for more herbicide treatments compared to the EDRR included in Alternative 3. We believe that the EDRR under Alternative 2 will more effectively meet the stated need by incorporating a wider variety of treatment options. Implementing an effective EDRR is critical to treating and halting the spread of invasive plants when the infestations are small and manageable. More treatment options exist when the infestations are small and treatment methods often are more effective and efficient. The benefits of the EDRR are greater in Alternative 2 because it allows us to fully utilize all treatment methods, as appropriate.

- Restoration of healthy, native communities and functions at sites impacted by invasive plants will occur as a connected action.

Restoring the native plant communities and functions after treating invasive plants is critical to help ensure that treatment areas are not re-infested with invasive plants. Ecological restoration is the process of assisting the recovery and management of ecological integrity. Ecological integrity includes variability in an area's biodiversity and ecological processes considered from both regional and historical perspectives. When ecological integrity of an area is functioning and resilient, then it can support a variety of sustainable practices and uses.

We believe that restoring native plant communities is the most effective treatment against invasive plant establishment and will ultimately reduce the amounts of herbicides applied to the Forest and Scenic Area. Although every invasive plant can not be eradicate from the Forest and Scenic Area, restoration will enable us to implement the most effective treatment methods possible. While requiring more financial outlays initially, restorations offers long term cost savings. We feel this expensive will enable us to achieve the purpose and need for action and enable effective treatments on-the-ground.

Restoration is a critical component to allow us to achieve the overarching goals associated with this project. These goals include retaining healthy native plant communities that are diverse and resilient, restoring ecosystems that are being damaged, and reducing the need of invasive plant treatment efforts.

3.3.3. Issues

Both individuals and groups raised issues and concerns during the development of this project, which we have considered them to help make this decision. The issues were used to develop the Proposed Action (Alternative 2), including the PDC, as well as alternatives to the Proposed Action. More detailed information concerning the issues considered can be found in FEIS, Chapter 1, Section 1.8 and detailed information on the issues can be found in Chapter 3 of the FEIS.

A. Human Health and Safety

Members of the public were concerned about the potential negative impacts that herbicides will have to human health. The public expressed particular concern about human health effects related to the toxicity of herbicides and drinking water contamination. We share these concerns and selected an alternative with PDC that minimize human exposure to herbicides (see PDC B.1, B.2, D.1, D.2, D.3, D.4, D.5, D.6, D.7).

By fully implementing the PDC, no individual worker or the public will be exposed to herbicides at a concentration or over time to pose a human health concern (as predicted in Alternatives 2 or 3. The analysis in FEIS, Chapter 3, Section 3.5.4 considered forest worker exposure as well as public exposure; the public exposure considered direct contact, contact or eating special forest products, and drinking water. The effects are fully consistent with State and Federal laws, EPA label requirements, and Invasive Plant ROD standards (2005b; FEIS, Appendix A). Through implementation of the PDC the risks to human health and safety have essentially been eliminated, to the extent practicable, from all action alternatives..

B. Treatment Effectiveness

Members of the public felt that non-herbicide treatments can be as effective at treating invasive plants as herbicide treatments, while other members of the public felt that herbicide treatments were the most effective and efficient treatment method. The proposed alternatives and treatment methods vary in how well they enable the effective treatment of invasive species and protect natural resources, including water quality, fish, wildlife, soil productivity, and native plant communities. Treatment effectiveness was a key component in the design of the alternatives: treatment effectiveness is discussed in the FEIS, Chapter 3, Section 3.6.

As demonstrated in Chapter 3, we believe that manual and mechanical treatments are ineffective and often highly difficult for moderate to large infestations of invasive plants that can reproduce vegetatively by stolons (e.g., hawkweed species), rhizomes (e.g., hawkweed species), or root fragments (e.g., invasive knotweed species). Herbicides often are the only known effective way to control, contain or eradicate invasive plant species that can reproduce from vegetative fragments. We believe treatment effectiveness, including restoration activities, is essential to meeting the purpose and need for action and thus to successfully implementing the project. Alternative 2 allows the greatest use of all the possible invasive plant treatments. As such, we believe, based on the analysis, that this alternative offers the most treatment effectiveness.

Invasive plants can create a host of environmental and other effects, most of which are harmful to native ecosystem processes, including: displacement of native plants; reduction in functionality of habitat and forage for wildlife and livestock; increased potential for soil erosion and reduced water quality; alteration of physical and biological properties of soil; loss of long-term riparian area function; loss of habitat for culturally significant plants; high cost (dollars spent) of controlling invasive plants; and increased cost to maintaining transportation systems and recreational sites. Therefore, by effectively treating invasive plants, the negative impacts associated with invasive plants will be reduced or avoided.

C. Water Quality and Aquatic Organisms

Members of the public are concerned that the application of herbicides in riparian areas has the potential to contaminate water and cause mortality to fish and other aquatic species. Herbicides can negatively impact the water quality in streams and groundwater serving as public water supply sources. Fish and other aquatic organisms also may be impacted by manual and mechanical treatments, which may change dissolved oxygen levels, nutrients, water temperature, turbidity, fine sediment, and riparian structure.

Both action alternatives include PDC that protect drinking water quality as well as aquatic organisms and their habitat (see PDC A.3, B.6, B.7, B.8, B.9, C.2, C.3, F.1, F.2, F.3, F.4, J.6). When PDC are implemented, the impacts to water quality are estimated to be insignificant (see FEIS, Chapter 3, Section 3.9). The amount of herbicide reaching surface water by spray drift will be minimal given that broadcast spraying is restricted within 100-feet of surface water and at wind speeds in excess of two miles per hour (see FEIS, PDC C.1) The potential for herbicides entering surface water through surface runoff are minimized because targeted spot spraying techniques will be used to apply herbicide within 100-feet of surface water. Lastly, the potential for direct application of herbicide to surface water is very low since hand/selective and spot spraying herbicide techniques will be used to apply herbicides directly to plants within at least 15-feet of the water's edge. FEIS, Section 3.9, Table 3-25 illustrates that the effects to water quality including the potential long-term beneficial effects from restoring a native plant community.

The analysis for aquatic organisms and their habitat demonstrated that in no case will the proposed application of any herbicide result in direct mortality of any aquatic organism and the potential amount of herbicide reaching water to a level that is not biologically relevant (see FEIS, Chapter 3, Section 3.10). Biologically relevant is defined as an action or result of an action that significantly impairs or disrupts essential behavioral patterns such as breeding, feeding or sheltering. If individual fish are impacted, the effects will be sub-lethal due to the very small amounts of herbicide, far below the lethal levels, that might reach the waters where fish reside. Sub-lethal effects to fish resulting from herbicides have been documented in several studies. Based on the available information the concentration of herbicides expected in the Forest and Scenic Area water bodies are less (in most case far less) than concentrations that resulted in observed sub-lethal effects.

The potential negative impacts to water quality as well as aquatic organisms and habitat from herbicide treatments is decreased in Alternative 3 through less herbicide use, while the beneficial effects are reduced since the treatment effectiveness decreases. The Selected Alternative minimizes or eliminates the effects through the PDC. The Selected Alternative is consistent with requirements of the Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, Clean Water Act, and Safe Drinking Water Act (see Section 6.0). Based on this information, we accept the trade-off of invasive plant treatments to better meet the purpose and need knowing that adequate PDC are in place to address these issues and protect the resources.

D. Native Plant Communities

Members of the public were concerned that invasive plant treatments, especially herbicides, may harm non-target plants, including culturally significant and special status species. Different herbicides have varying degrees of potency and selectivity (e.g., some herbicides affect certain plant families more than others) and application methods vary in the potential for off-site drift. Herbicides may impact plants through overspray or drift from herbicide applications, root translocation or surface runoff. Also, manual, mechanical and cultural treatments entail some risk to native plants and plant communities.

Short-term adverse effects to non-target plants will be largely offset by long-term benefits of invasive plant treatments and the associated restoration activities. The adverse effects will be minimized by properly implementing the Invasive Plant ROD standards (2005b; FEIS, Appendix A) and PDC (FEIS, Chapter 2, Section 2.2). PDC sub-section E (see PDC E.1, E.2, E.3, E.4, E.5, E.6) focus on botany resources including special status species and culturally significant species. For example, where an invasive plant species is to be treated within five feet of a special status plant, the invasive plant should be either manually treated or herbicide application will be applied by hand (e.g., wiping, wicking, painting, injection). Without treatment, however, invasive plant infestations will increase and spread, displacing native plants and plant communities. In the case of highly invasive plant species (e.g., knotweeds, hawkweeds, garlic mustard), the impacts can be ecologically far-reaching because of their potential to radically alter native plant communities and ecosystem structure and functions (e.g., energy flow, distribution of biomass, plant-animal interactions, decomposition, nutrient cycling, mycorrhizal associations, hydrology, etc.).

Similar to water quality and aquatic organisms, the potential negative impacts to non-target communities, including special status species and culturally significant species, from herbicide treatments is decreased in Alternative 3 through less herbicide use, while the beneficial effects are reduced since the treatment effectiveness decreases. The Selected Alternative minimizes or eliminates the effects through the PDC. Based on this information, we accept the potential trade-off of invasive plant treatments to better meet the purpose and need knowing that adequate PDC are in place to address these issues and protect native plant communities to the extent practicable.

E. Wildlife Species

Members of the public are concerned that use of herbicides to treat invasive plants, if used in the certain habitats, can harm a variety of wildlife species. Late successional, wetland, talus, and aquatic habitats have special status species that may be affected by herbicides. Certain herbicides have the potential, for example, to affect the vital organs of some wildlife species, change body weight, reduce the number of healthy offspring, increase susceptibility to predation, or cause direct mortality.

The wildlife analysis (FEIS, Chapter 3, Section 3.11) demonstrated that all of the alternatives are associated with plausible scenarios that exceed the toxicity indices for: 1) birds and mammals that eat grass or insects; 2) acres treated by herbicide that result in exposures exceeding a LOAEL (Lowest Observed Adverse Effect Level) for some species; and 3) herbicides that may adversely affect amphibians. The number of acres treated at one time within one treatment area is likely to influence the likelihood of exposure to herbicides for wildlife. Also, indirect mortality is possible from sub-lethal effects that can increase susceptibility to predation. Indirect effects to wildlife from cumulative herbicide exposure also are possible. For example, if a sub-lethal exposure affects an internal organ and the effect is not quickly reversed, then subsequent exposure can cause cumulative damage.

Short-term adverse effects to individual terrestrial species will be largely offset by long-term benefits to the habitat improvements resulting from treatment. All the herbicides in the FEIS are excreted rapidly (often within 24 to 48 hours) and do not accumulate up the food chain. This reduces, but does not eliminate, the potential for these types of adverse effects. By properly implementing the Invasive Plant ROD standards (2005b; FEIS, Appendix A) and PDC (FEIS, Chapter 2, Section 2.2), these effects are further reduced. Wildlife is addressed specifically in sub-section H of the PDC (see PDC H.1, H.2, H.3).

Similar to the resource areas previously discussed, the potential negative impacts to wildlife species, including special status species, from herbicide treatments is decreased in Alternative 3 through less herbicide use while the beneficial effects are reduced since the treatment effectiveness decreases. The Selected Alternative minimizes or eliminates the effects through the implementation of PDC. The Biological Evaluation and Biological Assessment for Wildlife Species concluded that there will be no effect to listed wildlife species with the Selected Alternative. Based on this information, we accept the trade-off of invasive plant treatments to better meet the purpose and need knowing that adequate PDC are in place to address these issues and protect wildlife species.

F. Soil Productivity

Some members of the public are concerned that invasive plant treatments (herbicide, manual, and mechanical) will negatively impact soil properties. The effect of an herbicide treatment on the soil depends on the particular characteristics of the herbicide used, how it is applied, and soil physical, chemical and biological conditions. Factors that determine the fate of herbicides in soil include herbicide mobility and degradation. Herbicide degradation over time is a result of physical and chemical processes in soil and water. Manual and mechanical treatments also may cause soil disturbance (see FEIS, Chapter 3, Section 3.8).

Invasive plants can have negative effects on soil properties (see FEIS, Chapter 3, Section 3.8). Invasive plants may increase the proportion of bare ground, increase or decrease the amount of organic matter in the soil, deplete the soil of nutrients or enrich the soil with certain nutrients, and produce toxic substances that affect soil organisms. Some of these changes may be difficult to reverse and can lead to long-term soil degradation and difficulty in reestablishing native vegetation. Therefore, the short-term adverse effects to soil properties that result from herbicide treatments will be largely offset by long-term benefits of restoring a native plant community.

Again, the potential negative impacts to soil resources associated with herbicide treatment, particularly soil organisms, are decreased in Alternative 3 through less herbicide use while the beneficial effects are reduced since the treatment effectiveness decreases. The Selected Alternative minimizes or eliminates the effects through the PDC. Soil resources are addressed specifically in sub-section G of the PDC (see PDC G.1, G.2, G.3, G.4, G.5, G.6). Based on this information, we accept the trade-off of invasive plant treatments to better meet the purpose and need knowing that adequate PDC are in place to maintain soil productivity.

G. Economic Efficiency

Members of the public felt that the most cost effective methods of treatment should be chosen, while others thought that cost-efficiency should be balanced with the number of jobs created. Invasive plant treatments vary in cost, which affects the acreage that can be effectively treated each year given a set budget.

The economic analysis (FEIS, Chapter 3, Section 3.5) demonstrated that the management of invasive plants is costly. Increased operating costs due to expanded invasive plant management may result in direct or indirect increases in costs to users of National Forest System lands. The Selected Alternative will have an average annual per acre cost of \$324; while Alternative 3 will have an average annual per acre cost of \$541. As such, the overall treatment cost for the Selected Alternative is \$4.3 million, while the overall treatment cost for Alternative 3 is \$7.3 million. We believe the Selected Alternative will enable us to implement the most treatments, in part because of its cost efficiency and increased long-term effectiveness.

Although the Selected Alternative is more cost efficient, this alternative creates less full-time jobs (94 jobs) compared to Alternative 3 (159 jobs). We believe the difference in the number of jobs created (63 jobs) is relatively small when considering the total economy in the State of Oregon. As such, the jobs created analysis was informative, but did not create a compelling reason to choose against the Selected Alternative.

H. Public Notification

The application of herbicides raises many public concerns, as demonstrated in the previous discussions; informing the public of invasive plant treatments will help alleviate some concerns. Information regarding location, time, and treatment method/type should be provided before treatments begin. We believe this issue is fully addressed through the implementation of the PDC. Specifically, PDC D.2, D.3, D.4, D.5, D.6 and D.7 address public notification. Given the importance of public notification and support for this project, we would like to repeat the public notification PDC here for emphasis.

- D.1. Signs notifying the public of herbicide treatments would be placed at access points to treatment areas prior to initiating treatment, a minimum of one week in advance of herbicide treatment. Signs would be removed no sooner than two weeks following application. Signs would list herbicides to be used, application dates, and name and phone number of a local contact.
- D.2. Public announcement of proposed annual program of herbicide applications would be published in the local papers at least one month in advance of herbicide application (See Appendix L – Sample Public Notifications). Notifications would categorize treatment sites by those identified in this analysis and those identified under the Early Detection / Rapid Response strategy (EDRR).
- D.3. All treatment sites would be posted on the Mt. Hood National Forest (<http://www.fs.fed.us/r6/mthood/>) and Columbia River Gorge National Scenic Area (<http://www.fs.fed.us/r6/columbia/forest/>) websites. The treatment sites would be categorized by those identified in this analysis and those identified under the EDRR. The websites also would include the consistency review documentation for sites identified under EDRR or information on how to obtain the documentation
- D.4. Applicants of special forest products would receive notification of areas to be treated with triclopyr at the time of permit issuance.
- D.5. Pertinent administrative sites and developed campgrounds would be posted, barricaded with use caution tape, or closed in advance of herbicide application (normally 15 days) to ensure that no inadvertent public contact with herbicide occurs.
- D.6. Avoid any herbicide application within 600-feet of a drinking water intake on surface water. Notification of a landowner or other pertinent water district personnel would take place when herbicides are used within 1000-feet (slope distance) of a known water intake. Herbicides would not be applied within 100-feet of the eight mapped springs that are used for drinking water on the Clackamas River Ranger District.

3.3.4. Monitoring Framework

The Forest and Scenic Area are required to implement the Inventory and Monitoring Framework as amended by the Regional Forester that is presented in the Invasive Plant ROD (2005b) and included as Appendix N in the FEIS. This framework describes the monitoring needed to assure the desired future condition and treatment strategies are achieved. The framework includes implementation / compliance and effectiveness monitoring components. This monitoring requirements will be accomplished using skilled USDA Forest Service employees or through partnership with the herbicide applicators, such as the counties and/or Oregon Department of Agriculture. Currently, the herbicide applicators complete an herbicide treatment and monitoring record that documents the site treated, treatment methods, herbicide used, and method of application as well as a monitoring record. The monitoring records require a follow-up visit and an assessment of effects on non-target species. Similar records will be developed in the future to meet the monitoring needs.

Monitoring identified as “essential” will occur throughout the project. The essential monitoring will be identified during the implementation phase. Other monitoring will be completed as funding permits. Implementation oversight will be increased if implementation or effectiveness problems result.

4.0 PUBLIC INVOLVEMENT

In accordance with the National Environmental Policy Act (NEPA) and USDA Forest Service policy, public and other government agency involvement was initiated early in the environmental analysis process and continued throughout the completion of this EIS.

4.1 Scoping Process

Scoping is an integral part of the environmental analysis process. Scoping includes refining the Proposed Action, identifying the preliminary issues, and identifying interested and affected persons. The results of scoping are used to: 1) identify public involvement methods; 2) refine the issues; and, 3) explore alternatives to the Proposed Action and their potential effects.

The scoping process began on February 23, 2004 with the publication of a Notice of Intent in the Federal Register. This Notice of Intent was updated on April 29, 2005. The Notice of Intent was followed by a scoping letter and map which was mailed to approximately 1,200 individuals, organizations, agencies, businesses, recreation residence owners, and local and Tribal governments.

Eighty responses were received during the public scoping periods, and an additional sixteen people called and expressed interest in the project. All issues identified through the scoping process were divided into three categories: key issues, resolved issues or tracking issues. Key issues are those that are within the scope of the Proposed Action and suggest the need to consider different alternatives or Project Design Criteria. Resolved issues are significant issues identified by the public that have been fully mitigated through the development of alternatives or PDC. Tracking issues are those that have been determined to be relevant, but are not used to formulate alternatives. These issues are discussed in the FEIS, Chapter 1, Section 1.8.

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

- Creating a project website (<http://www.fs.fed.us/r6/invasiveplant-eis/site-specific/MTH/>) to disseminate information to the public;
- Publishing and updating the project in the Forest and Scenic Area’s Schedule of Proposed Actions (PALS);
- Mailing an update letter to 150 interested parties, including respondents to scoping letter and county noxious weed coordinators; and,

- Meeting with governmental agencies, tribes, and organizations upon request, including Hood River County, Oregon Department of Agriculture, and Confederated Tribes of Warm Springs.

4.2 Draft Environmental Impact Statement and Public Meetings

Issues identified from the scoping process were used to guide the completion of the *Draft Environmental Impact Statement for Site-Specific Invasive Plant Treatments for Mt. Hood National Forest and Columbia River Gorge National Scenic Area in Oregon, including Forest Plan Amendment #16*. The full DEIS or a short summary was distributed to approximately 1,200 individuals, organizations, and other agencies on May 30, 2006. All recreational residence permittees, approximately 550 people, received a summary or CD announcing the project. The Notice of Availability of the DEIS was published in the Federal Register on May 26, 2006 and initiated a 45 day public comment period that ended on July 13, 2006. There were 26 comment letters received.

In addition to the mailing, the USDA Forest Service hosted two open houses on June 8, 2006 in Hood River and June 19, 2006 in Sandy. Press releases announcing these meetings were distributed to local newspapers on May 26, June 6, and June 14, 2006. Announcements of the meetings appeared in the *Sandy Post*, *Hood River News*, and *The Oregonian*.

The Forest Service reviewed and analyzed all public comments received to determine whether to: 1) modify existing alternatives; 2) develop new alternatives; 3) supplement, improve or modify the analysis; or 4) make factual corrections. All substantive comments that were received and the USDA Forest Service response to each comment are included in FEIS, Appendix Z. All changes or modifications to the DEIS resulting from public comments have been included in the FEIS. All public comment letters are available in the project record located in the Mt. Hood National Forest Headquarters Office in Sandy, Oregon.

5.0 ALTERNATIVES CONSIDERED

The FEIS considered eight alternatives, three were analyzed in detail and five were considered, but eliminated from detailed study for the reasons stated in FEIS, Chapter 2, Section 2.5. A detailed description of the three alternatives analyzed in detail can be found in the FEIS, Chapter 2, Section 2.1.2-No Action Alternative, Section 2.1.3-The Proposed Action, and Section 2.1.4-Reduced Herbicide Use Alternative. The action alternatives (Proposed Action and Reduced Herbicide Use Alternatives) were developed and analyzed within the risk reduction framework described in Section 3.3.1 of this document. A comparison of these alternatives by treatment methods, purpose and need, desired future condition, and issues can be found in the FEIS, Chapter 2, Section 2.4. The three alternatives considered in detail are summarized below.

5.1 Alternative 1 – No Action Alternative

The No Action Alternative maintains the current direction for management of invasive plants. Management of invasive plants occurs through individual NEPA documents tiered to the 1988 Environmental Impact Statement and Record of Decision for Competing and Unwanted Vegetation and the associated 1989 Mediated Agreement. These individual NEPA documents include: the Environmental Assessment for the Management of Noxious Weeds, Mt. Hood National Forest (1993a); the Environmental Assessment for the Control and Management of Noxious Weeds and Blackberries on Selected Lands within the Columbia River Gorge National Scenic Area (1996c); the Environmental Assessment for the Application of Herbicides for the Control and Management of Noxious Weeds on the Barlow Ranger District, Mt. Hood National Forest (1998b); and the Big Eddy-Ostrander Transmission Corridor Supplemental Analysis to Transmission System Vegetation Management Program, Final Environmental Impact Statement Bonneville Power Administration (BPA) (2001). As approved by these NEPA decisions, invasive plants can be treated through a variety of methods on a total of 2,250 acres; 650 acres on the Forest and 1,600 acres on the Scenic Area.

Under the No Action Alternative, the Forest and Scenic Area will continue to treat invasive plant species as authorized under these existing NEPA documents. Approximately 1,235 acres were treated in fiscal year 2003, including 600 acres of herbicide treatments; 450 acres on the Forest and 150 acres on the Scenic Area. The remaining 635 acres were treated with manual and mechanical treatment methods.

5.2 Alternative 2 – The Proposed Action and Selected Alternative

Invasive Plant Treatments: The action proposed by the USDA Forest Service to meet the first part of the purpose and need is to treat the 208 treatment areas (13,000 acres) with integrated weed management methods. The treatments on a total of 12,963 acres are proposed to include herbicide treatment methods in combination with non-herbicide treatment methods (manual, mechanical and cultural). See FEIS, Chapter 2, Section 2.1.3 for a description of the proposed treatments; FEIS, Appendix F for site-specific treatment proposals; and FEIS, Appendix G for common control measures used to treat invasive plants. Treatments are designed to reduce the adverse effects to fish, wildlife, and sensitive plant species by implementing PDC (FEIS, Chapter 2, Section 2.2) while maximizing the reduction of the invasive plants targeted.

Early Detection / Rapid Response Strategy: The action proposed by the USDA Forest Service to meet the second part of the purpose and need includes an EDRR that will be used to treat newly inventoried invasive plant sites that are unknown at this time and/or new infestations that become established in the future. Sites that are discovered subsequent to the last invasive plant inventory, completed in November 2004, will require evaluation to determine if the invasive plant treatments and environmental impacts are consistent with those analyzed in the FEIS.

Overall, treatment will not exceed 30,000 acres of the project area over 15 years for both known and future infestations. Several treatment caps (limitations) are established to ensure that the treatment does not exceed the impacts analyzed in Chapter 3 of the FEIS. These caps include annual (13,000 acres), fifth field watershed (3 percent per watershed per year), and riparian reserve (40 percent of the total area treated in each fifth field watershed; 5,000 acres total per year) limitations. In addition, triggers and thresholds are designed to prescribe the potential treatment methods that will be effective and ensure that treatments will be consistent with those analyzed in the FEIS. If the proposed treatments are outside these triggers and thresholds, new NEPA analysis and disclosure will be required (See Appendix 3 for the Invasive Plant Decision Key). In addition, the EDRR is described in FEIS, Chapter 1, Section 1.3 and FEIS, Chapter 2, Sections 2.1.3 and 2.1.4.

Site Restoration: Each treatment area 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. The restoration objectives may either be passive or active restoration. Passive restoration assumes the treatment area will revegetate from existing native vegetation without mulching, planting or seeding. Active restoration is site-specific and may include seeding, planting and/or mulching. See FEIS, Chapter 2, Section 2.1.3 for more details and FEIS, Appendix F for specific restoration prescriptions.

Forest Plan Amendments: Alternative 2 includes one Forest Plan Amendment that is described in detail in the FEIS, Chapter 2, Section 2.1.3. Six standards and guidelines will be amended to allow, where appropriate, careful and targeted herbicide use to treat invasive plants according to the standards in the Invasive Plant ROD (2005b). This will be Amendment #16 to the Mt. Hood Land and Resource Management Plan (Forest Plan). The specific language of the Forest Plan Amendment is listed in Table 2 below.

Table 2: Proposed Amendment to the Forest Plan under the Proposed Action. Suggested changes are *italic* or ~~strikethrough~~ print.

Standard & Guideline	Page # in Forest Plan
Water (FW-076a): Potentially detrimental materials associated with management activities (e.g., pesticides, fertilizers, and road surface treatments) shall be prevented from entering water or other areas not intended for treatment, <i>except for invasive plant treatments as specified in Standard FW-076b.</i>	4-57
Water (FW-076b): Potentially detrimental materials associated with <i>invasive plant treatments should</i> management activities (e.g., pesticides, fertilizers, and road surface treatments) shall be prevented from entering water or other areas not intended for treatment, <i>according to standards in the Pacific Northwest Region: Preventing and Managing Invasive Plants Record of Decision (2005).</i>	4-57
Wilderness (A2-082): Pesticides use shall be prohibited, <i>except for herbicides used to treat invasive plants according to standards in the Pacific Northwest Region: Preventing and Managing Invasive Plants Record of Decision (2005).</i>	4-142
Outdoor Education Areas (A12-031): Herbicides should not be applied outside of roads rights-of-way, <i>except for herbicides used to treat invasive plants according to standards in the Pacific Northwest Region: Preventing and Managing Invasive Plants Record of Decision (2005).</i>	4-200
Pileated Woodpecker/Pine Marten Habitat (B5-041): Herbicides should not be permitted outside of road rights-of-way, <i>except for herbicides used to treat invasive plants according to standards in the Pacific Northwest Region: Preventing and Managing Invasive Plants Record of Decision (2005).</i>	4-244
General Riparian Area (B7-070): Application of herbicides shall be discouraged, <i>except for herbicides used to treat invasive plants according to standards in the Pacific Northwest Region: Preventing and Managing Invasive Plants Record of Decision (2005).</i>	4-260
Vegetation Management (A1-WR-064): Chemicals shall not be used to control noxious weeds in riparian areas, <i>except for herbicides used to treat invasive plants according to standards in the Pacific Northwest Region: Preventing and Managing Invasive Plants Record of Decision (2005).</i>	Amendment #7

5.3 Alternative 3 – Restricted Herbicide Use Alternative

Invasive Plant Treatments: This alternative modifies the Proposed Action to reduce the amount of herbicides applied. Only 4,047 acres (43 treatment sites) will be treated using herbicide treatments under this alternative, compared to approximately 13,000 acres under Alternative 2. Only three treatment areas (2,028 acres) have broadcast herbicide application methods prescribed: Sandy River Delta restoration site, Lolo Pass utility corridor and road, and the BPA power line. These treatment areas were chosen because they are the highest priority sites (see FEIS, Chapter 2, Table 2-8). Highest priority sites emphasize the eradication of new species, new infestations, or active restoration sites. Currently, the Forest and Scenic Area are focusing on the eradication of 5 new species: orange hawkweed, common hawkweed, meadow hawkweed, butter and eggs, and Japanese knotweed. These high priority species are most effectively treated with herbicides, as discussed in FEIS, Chapter 3, Section 3.6-Botany and Treatment Effectiveness.

Early Detection / Rapid Response Strategy: The premise and intent of the EDRR remains the same under Alternative 3. All treatment caps remain the same as Alternative 2. Under Alternative 3, herbicide treatments will be limited to the highest priority sites as outlined in FEIS, Chapter 2, Table 2-8. As a result, significantly less herbicide will be used under the EDRR for Alternative 3. All other sites will be treated using manual, mechanical and cultural (goat grazing) methods.

Site Restoration: Similar to Alternative 2, each treatment area 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. Active restoration will not begin until the invasive plants have been significantly reduced, thus the number of acres that are actively restored will be less in this alternative since the treatment effectiveness is lower than the Selected Alternative. The restoration objectives may either be passive or active restoration. See FEIS, Appendix F for specific restoration prescriptions.

Forest Plan Amendments: Alternative 3 includes the same Forest Plan Amendment that is proposed in Alternative 2. See Table 2 for the specific language of the Forest Plan Amendment.

6.0 FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

After consideration of the discussion of environmental consequences (FEIS, Chapter 3), we have determined that the Selected Alternative is consistent with the intent of the Forest Plan's and Columbia River Gorge National Scenic Area Management Plan's (Management Plan) long term goals and objectives. Also, we have determined that the Selected Alternative is consistent with other laws and regulations, as outlined in the FEIS. Discussion of the laws and regulations are provided in the FEIS, Chapter 3, Section 3.15 as well as FEIS, Appendices B and C.

6.1 Consistency with National Forest Management Act

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 FEIS are in compliance with the relevant management requirements set forth in the National Forest Management Act (36 CFR 219).

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.

6.1.1. Consistency with Forest Plan Direction

The treatment of invasive plants on NFS lands under the Selected Alternative is consistent with the Mt. Hood National Forest Land and Resource Management Plan Final Environmental Impact Statement (USDA Forest Service, 1990a), Record of Decision (USDA Forest Service, 1990c), and the accompanying Land and Resource Management Plan (USDA Forest Service, 1990b), as amended. The applicable Forest Plan Standards and Guidelines are listed in FEIS, Appendix B: these include forest wide standards as well as standards for Management Areas A2 (Wilderness),

A12 (Outdoor Education Area), B1 (Designated Wild, Scenic, and Recreational River), B2 (Scenic Viewshed), B5 (Pileated Woodpecker/Pine Marten Habitat Area), B6 (Special Emphasis Watershed), B7 (General Riparian Areas), and D (Bull Run Management Area). In addition to these Management Areas, invasive plant treatment can occur in any area or land allocation under the EDRR. The Selected Alternative is fully consistent with the goals and objectives for all Management Areas. For more information, see FEIS, Appendix B.

6.1.2. Finding of Non-Significant Amendment

The Forest Plan amendment was developed consistent with procedural requirements of the National Forest Management Act (NFMA) (36 CFR 219). This decision is a non-significant amendment to the Mt. Hood National Forest Land and Resource Management Plan. The Forest Service Manual (FSM 1926.51 and 1922.52) provide specific direction for determining the significance of a forest plan amendment.

The proposed amendment does not propose changes in management area boundaries or prescriptions, but does represent minor changes in standards and guidelines and provides for additional management practices that can contribute to achieving management prescriptions. The proposed minor changes to the standards and guidelines (A2-082, A12-031, B5-041, B7-070 and A1-WR-064) will not alter any of the multiple use goals or objectives outlined in the Forest Plan for Wilderness Areas (A2), Outdoor Recreation Areas (A12), Pileated Woodpecker/Pine Martin Habitat (B5), General Riparian Areas (B7), or Wild and Scenic Rivers (A1). The minor change to forestwide standard (FW-076) clarifies that the standard does not prohibit the use of herbicides; therefore, there will be no change in the multiple use goal of protecting water resources forestwide.

This amendment will take place as of the signing of this Decision and will apply to invasive plant treatments across the Forest and Scenic Area. These amended standards and guidelines will be applicable to proposed and future invasive plant treatments.

We believe this decision to authorize a Forest Plan amendment to allow herbicide use in the specified areas is consistent with the intent of the Forest Plan. Based on our review of the Forest Plan and the analysis disclosed in the FEIS (Chapter 3, Section 3.16), we have determined that this is a non-significant Forest Plan amendment under NFMA on the basis of the criteria outlined in FSM 1926.51-Changes to the Forest Plan That Are Not Significant. We believe that the use of herbicides will help achieve the multiple use goals and objectives by eradicating or reducing the presence of invasive plant species and restoring native plants.

6.1.3. Northwest Forest Plan Consistency

We have determined that the Selected Alternative is consistent with the Standards and Guidelines for the Northwest Forest Plan (NWFP) Record of Decision (USDA and USDI, 1994), including the subsequent decisions regarding Survey and Manage Species and the Aquatic Conservation Strategy.

The project is consistent with the Aquatic Conservation Strategy objectives, as described in the 1994 NWFP Record of Decision on page B-10. Also, we have considered the existing condition of riparian reserves, including the important physical and biological components of the fifth-field watersheds and the effects to riparian resources. The relevant information from the watershed analysis, which are listed in FEIS, Chapter 2, Table 2-9 and summarized in the project file located in the Mt. Hood National Forest Headquarters Office in Sandy, Oregon. I find that the selected alternative is consistent with riparian reserve standards and guidelines, and will contribute to maintaining or restoring the fifth-field watersheds over the long term (see FEIS, Chapter 3, Sections 3.9 and 3.10).

We have reviewed the Survey and Manage information and recommendations provided by resource specialists and concur with their findings. Information concerning Survey and Manage Species is available in FEIS, Chapter 3, Section 3.6-Botany and Treatment Effectiveness; Section 3.10-Aquatic Organisms and Habitat; and Section 3.11-Wildlife.

6.2 Consistency with National Scenic Area Act

The Selected Alternative is consistent with the Columbia River Gorge National Scenic Area Management Plan (Columbia River Gorge Commission and USDA Forest Service, 1993 and 2004). The basis for this conclusion is the finding of consistency with the applicable Management Plan standards and guidelines contained in FEIS, Appendix C. The Selected Alternative, as described in FEIS, Chapter 2, Section 2.1.3, meets all applicable guidelines.

Management Plan policy requires that projects on NFS lands also be consistent with the Land and Resource Management Plans of the adjacent National Forests. The USDA Forest Service applies the more protective standard of either the Management Plan or the Land and Resource Management Plan. For this project, the applicable plan is the Mt. Hood National Forest Land and Resource Management Plan (Forest Plan). Consistency with the Forest Plan is discussed above, and the applicable standards and guidelines are listed in FEIS, Appendix B.

6.3 Consistency with National Environmental Policy Act

Regulations for NEPA (40 CFR 1500 to 1508; FSH 1909.15) were followed in preparing this EIS. The range of alternatives was adequate to understand and analyze significant public issues. The Selected Alternative adopts all practical means to avoid and/or minimize adverse effects to the environment. The PDC, as described in FEIS, Chapter 2, Section 2.2, describes the measures the USDA Forest Service expects to take to further reduce the risk of adverse effects during future implementation.

We are choosing the Selected Alternative given the consideration of cumulative effects addressed throughout FEIS Chapter 3. FEIS, Chapter 3, Section 3.4 specifically addressed the basis for cumulative effects analysis and its relevance to the choice between alternatives. The effects of herbicide use are of greatest concern to the public and are the focus of cumulative effects analysis in the FEIS. This is consistent with the Guidance on Consideration of Past Actions in Cumulative Effects Analysis provided by the Council on Environmental Quality (June 24, 2005).

In general, the USDA Forest Service contribution to overall herbicide use is very small and the effects of herbicide use that complies with the Selected Alternative are limited both spatially and temporally. Thus, there is low potential for significant cumulative effects to be triggered by this decision.

6.4 Consistency with Endangered Species Act, as amended and Magnuson-Stevens Fishery Conservation and Management Act

Details regarding the species found within the invasive plant treatment areas and overall project area, and the potential effects of the proposed activities on those species and their habitats are discussed in FEIS, Chapter 3, Section 3.10-Aquatic Organisms and Habitat and Section 3.11-Wildlife. All alternatives are consistent with the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the requirements of the USDA Forest Service Pacific Northwest Region Sensitive Species list.

A Biological Evaluation (BE) / Biological Assessment (BA) was prepared for wildlife impacts and is available in the project file located at the Mt. Hood National Forest headquarters in Sandy, Oregon or on-line at <http://www.fs.fed.us/r6/mthood/projects/>. The wildlife BE/BA determined that there will be “No Effect” to threatened or endangered wildlife species. A letter informing the U.S. Fish and Wildlife Service of the project and the effects determination was sent on August 29, 2006.

A BE and BA also was prepared assessing impacts to listed fish species and designated critical habitat. Both are available in the project file located at the Mt. Hood National Forest headquarters in Sandy, Oregon or on-line at <http://www.fs.fed.us/r6/mthood/projects/>. The fisheries BE/BA determined that invasive plant treatments “May Affect, Not Likely to Adversely Affect” threatened or endangered fish species and habitat. Informal consultation on the Selected Alternative has been conducted and completed with the U.S. Fish and Wildlife Service (FWS) for threatened bull trout and their designated critical habitat. On June 5, 2007, the FWS concurred with the “May Affect, Not Likely to Adversely Affect” findings of the BA (TAILS #13420-2007-I-0107).

The Forest Service initiated informal consultation on the Selected Alternative with the National Marine Fisheries Service (NMFS). NMFS did not concur with the “May Affect, Not Likely to Adversely Affect” findings in the BA for threatened and endangered anadromous fish species and designated critical habitat. NMFS issued a letter of nonconcurrence and request for additional information on April 23, 2007. On June 6, 2007, the Forest Service responded with the additional information and requested formal consultation with NMFS. On January 9, 2008 the NMFS completed a Biological Opinion which determined the Selected Alternative resulted in a “May Affect, Likely to Adversely Affect” finding, but was not likely to jeopardize the continued existence of any listed anadromous fish species or result in the destruction or adverse modification of designated critical habitat. The NMFS also determined the Selected Alternative would have adverse effects on essential fish habitat for coho and Chinook salmon. NMFS also determined that “the Proposed Action is likely to benefit ESA-listed species and their habitat by restoring native vegetation, preventing future weed infestation, and restoring ecosystem and riparian function, and have other beneficial effects as well (page 61).”

Included in the Biological Opinion was a take statement and nondiscretionary terms and conditions that must be followed to meet Endangered Species Act Requirements. The terms and conditions included a variety of treatment and reporting requirements in addition to those included as part of the Selected Alternative, including:

- Additional treatment stipulations in riparian areas designed to further minimize potential effects to listed anadromous fish species and habitat.
- A list of approved additives (i.e. adjuvants) for use in riparian zones.
- Specific field treatment monitoring and application tracking requirements.
- Annual reporting requirements.

The full title and reference number for the Biological Opinion are: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Mount Hood National Forest and Columbia River Gorge National Scenic Area Invasive Plant Treatments Project, Clackamas County, Oregon (reference number 2007/01524).

6.5 Consistency with Other Laws and Regulations

Our decision is consistent with all other current laws, regulations and policies guiding invasive plant programs and other management activities on National Forest System lands within the Forest and Scenic Area. This includes, but is not limited to: Safe Drinking Water Act; Clean Water Act; Wild and Scenic River Act; Wilderness Act; National Historic Preservation Act; and Executive Orders 11988, 11990 and 12898. Specific findings and rationales required by law follow.

6.5.1. The National Historic Preservation Action

State Historic Preservation Office consultation has been conducted under the Programmatic Agreement among the USDA Forest Service, Pacific Northwest Region (Region 6), the Advisory Council on Historic Preservation and the Oregon State Historical Preservation Office regarding Cultural Resources Management in the State of Oregon by the USDA Forest Service (2003). As required by the PDC, the annual treatment and restoration plan will be reviewed for heritage resource interests, including but not limited to review by appropriate Tribal Governments, to determine if there is any new information that should be considered prior to treatment to protect heritage resources and culturally significant sites. Since heritage resource will not be affected by proposed activities under the Selected Alternative, there will be no effect to any historic property listed in or eligible to the National Register of Historic Places. Also required, the Forest and Scenic Area will ensure that archaeological sites are not impacted by any proposal to utilize a weed wrench under the EDRR. See FEIS, Chapter 3, Section 3.15 for more details.

6.5.2. Clean Water Act and Safe Drinking Water Act

The Selected Alternative will meet and conform to the Clean Water Act as amended in 1982 and Safe Drinking Water Act as amended in 1996 (FEIS, Chapter 3, Section 3.9). The Clean Water Act requires States to set water quality standards to support the beneficial uses of water. The Act also requires States to identify the status of all waters and prioritize water bodies whose water quality is limited or impaired. For Oregon, the Oregon Department of Environmental Quality (DEQ) develops water quality standards and lists water quality limited waters. Under the Safe Drinking Water Act, the DEQ and Oregon Health Division is required to delineate the groundwater and surface water source areas which supply public water systems, inventory each of those areas to determine potential sources of contamination, and determine the most susceptible areas at risk for contamination. This project will meet and conform to these Acts through the implementation of the PDC (FEIS, Chapter 2, Section 2.2) and Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources (FEIS, Appendix M).

6.5.3. Executive Orders 11988 and 11990: Flood Plains and Wetlands

These orders are applicable to riparian areas found within the project area. Proposed invasive plant treatments within riparian areas are discussed in FEIS, Chapter 3, Sections 3.9-Water Quality and 3.10-Aquatic Organisms and Habitat. The environmental effects are consistent with the standards and guidelines for the Mt. Hood National Forest Land and Resource Management Plan, as amended and Columbia River Gorge National Scenic Area Management Plan (see FEIS, Appendices B and C). In addition, the proposed invasive plant treatments will be implemented using the standards from the Invasive Plant ROD (2005b) and PDC (FEIS, Chapter 2, Section 2.2). No adverse effects are anticipated to occur to wetlands and floodplains with any alternatives, including the Selected Alternative.

6.5.4. Executive Order 12898: 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. FEIS, Chapter 3, Section 3.14-Tribal Relations, Civil Rights and Environmental Justice discusses the potential impacts of this project on these groups. With the implementation of any 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 will be affected by herbicide treatments in areas available for picking their products. Although these groups will be exposed to the herbicide treatments, the Invasive Plant ROD standards (2005b; FEIS, Appendix A) and PDC (FEIS, Chapter 2, Section 2.2) eliminate any potential impact to human health.

6.5.5. Secretary of Agriculture Memorandum of 1827: Prime Farmland, Rangeland, Forestland and Parkland

No prime farmlands, rangelands, forestlands or parklands exist within the project area. Since none of these lands exist, there will be no direct, indirect or cumulative effects.

7.0 ENVIRONMENTAL PREFERRED ALTERNATIVE

In accordance with Council on Environmental Quality (CEQ) regulations, we are required to identify the alternative or alternatives that can be considered environmentally preferable (40 CFR Part 1505.2 (b)). The environmentally preferable alternative is defined by CEQ as the alternative that promotes national environmental policy as expressed in NEPA Section 101. The environmental preferable alternative is not necessarily the alternative that will be implemented, but is ordinarily the alternative that causes the least damage to the physical and biological environment, and best protects, preserves, and enhances historical, cultural, and natural resources.

Based upon the description of alternatives and associated analysis detailed in the FEIS, we believe that the Proposed Action (the Selected Alternative) is the environmentally preferable alternative. Of the alternatives considered, the Proposed Action 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 208 treatment areas to remove and/or reduce invasive plant infestations and to allow the opportunity for native plants to revegetate the treatment areas;
- Authorizes the greatest amount of active restoration of native plant communities to ensure that invasive plants do not re-infest the treatment areas and to reduce the need for herbicide treatments in the future;
- Permits the most effective invasive plant treatments of newly discovered 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 Mt. Hood Land and Resource Management Plan (Forest Plan) and the Columbia River Gorge National Scenic Area Management Plan; and,
- Reflects consideration of the viewpoints expressed by the public and members of the interdisciplinary team.

8.0 IMPLEMENTATION

If no appeals are filed, implementation of this decision will occur no sooner than 45 days, plus five (5) business days, after publication of the Notice of Availability of this ROD in *The Oregonian*, Portland, Oregon (the official newspaper of record). If an appeal is received, the project may not be implemented for 15 days after the appeal decision. Implementation will be carried out as described in the preceding sections.

9.0 APPEAL PROCESS AND RIGHTS

This decision is subject to administrative review (appeal) pursuant to 36 CFR Part 215. Only individuals or organizations who submitted comments or expressed an interest in the project during the comment period may appeal. Any appeal of this decision must be in writing and fully consistent with the content requirements described in 36 CFR 215.14. A written appeal must be postmarked or received by the Appeal Reviewing Officer (the Regional Forester) within 45 days of the date of publication of the legal notice regarding this decision in *The Oregonian* newspaper.

Send appeals to:

Linda Goodman, Regional Forester
USDA Forest Service
ATTN: 1570 Appeals
P.O. Box 3623
Portland, OR 97208-3623

Street location for those submitting hand-delivered appeals is 333 SW First Avenue, Portland OR. The office hours are: 8:00 AM to 4:30 PM Monday through Friday, excluding holidays. Appeals may be e-mailed to: appeals-pacificnorthwest-regional-office@fs.fed.us. Electronic appeals must be submitted as part of an actual e-mail message, or as an attachment in plain text (.txt), rich text format (.rtf), or Microsoft Word (.doc) only. E-mails submitted to e-mail addresses other than the one listed above, or in formats other than those listed, or containing viruses will be reject. In cases where no identifiable name is attached to an electronic message, a verification of identity will be required. A scanned signature is one way to provide verification. Any written appeal, including attachments must be postmarked or received (via regular mail, fax, e-mail, hand-delivery, express delivery, or messenger service) within 45 days of the date of the publication of the legal notice. The public date of the legal notices in *The Oregonian* newspaper is the exclusive means for calculating the time to file an appeal (§215.15(a)). Those wishing to appeal should not rely upon dates or timeframe information provided by any other source.

For further information regarding these appeal procedures, contact the Mt. Hood National Forest, Environmental Coordinator, Mike Redmond at (503) 668-1776 or mredmond@fs.fed.us.

1.0 CONTACT PERSON

For additional information concerning this decision, contact Jennie O'Connor, Invasive Plant EIS Team Leader, Hood River Ranger District, 6780 Highway 35, Parkdale OR 97041; (541) 352-6002 x634 (phone); jmoconnor@fs.fed.us. Additional information also is available on the project website at: <http://www.fs.fed.us/r6/invasiveplant-eis/site-specific/MTH/>.



GARY L. LARSEN
Forest Supervisor
Mt. Hood National Forest

2/29/08
[DATE]



DANIEL T. HARKENRIDER
Area Manager
Columbia River Gorge National Scenic Area

2-26-08
[DATE]

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APPENDIX 1 – MAPS OF PROPOSED TREATMENT AREAS

Figure A1-1. Map of Proposed Treatment Areas for the Proposed Action.



This GIS product was compiled from various sources and may be corrected, updated, modified, or replaced at any time. For more information contact Mt. Hood National Forest Supervisor's Office, 16400 Champion Way, Sandy, OR 97055. The USDA is an equal opportunity provider and employer.

Figure A1-2 Proposed Action Map for Columbia River Gorge National Scenic Area

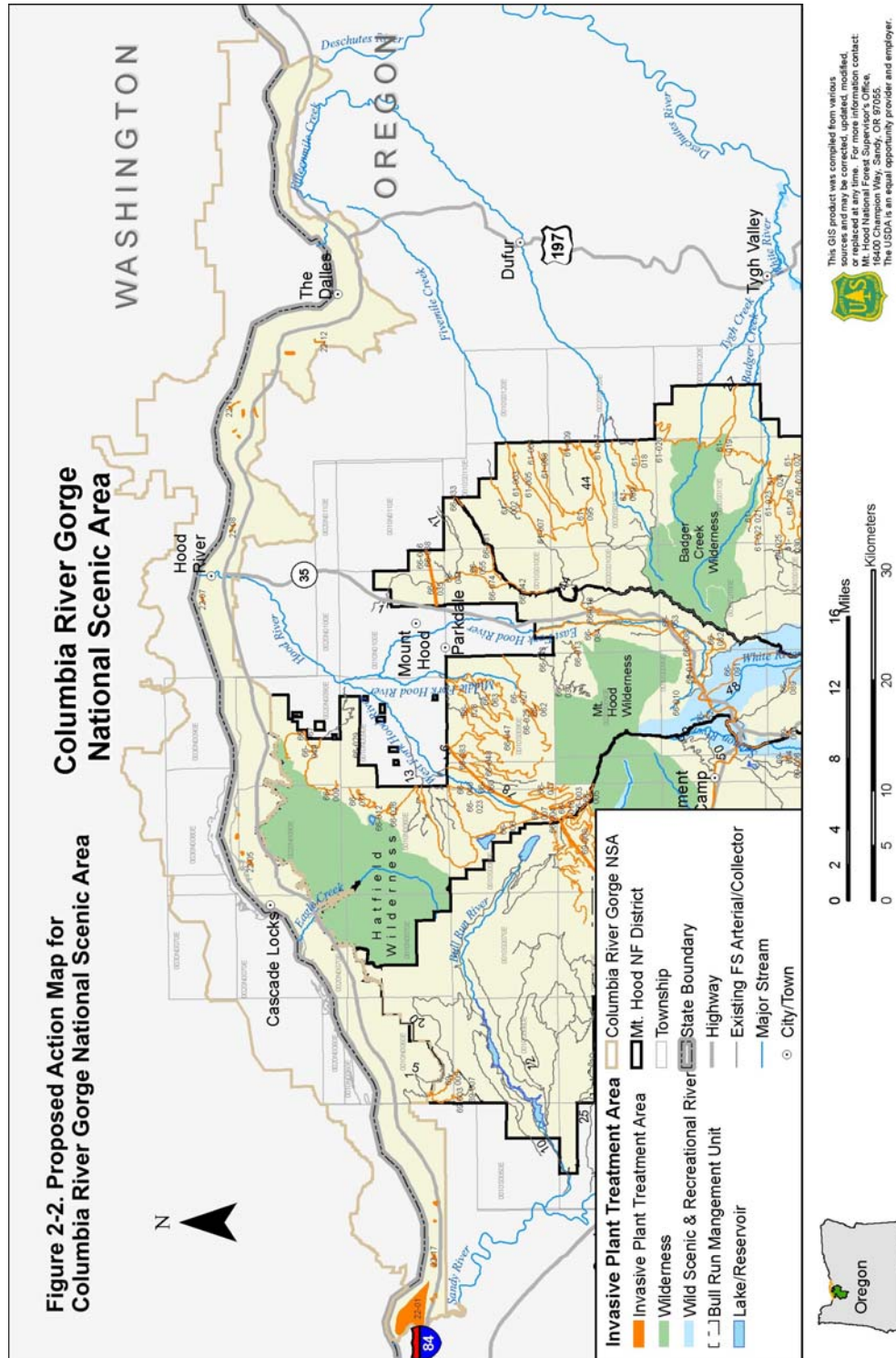
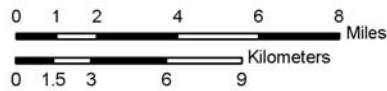


Figure A1-3. Proposed Action Map for Barlow Ranger District, Mt. Hood National Forest

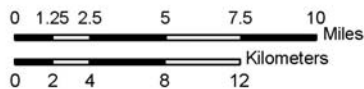
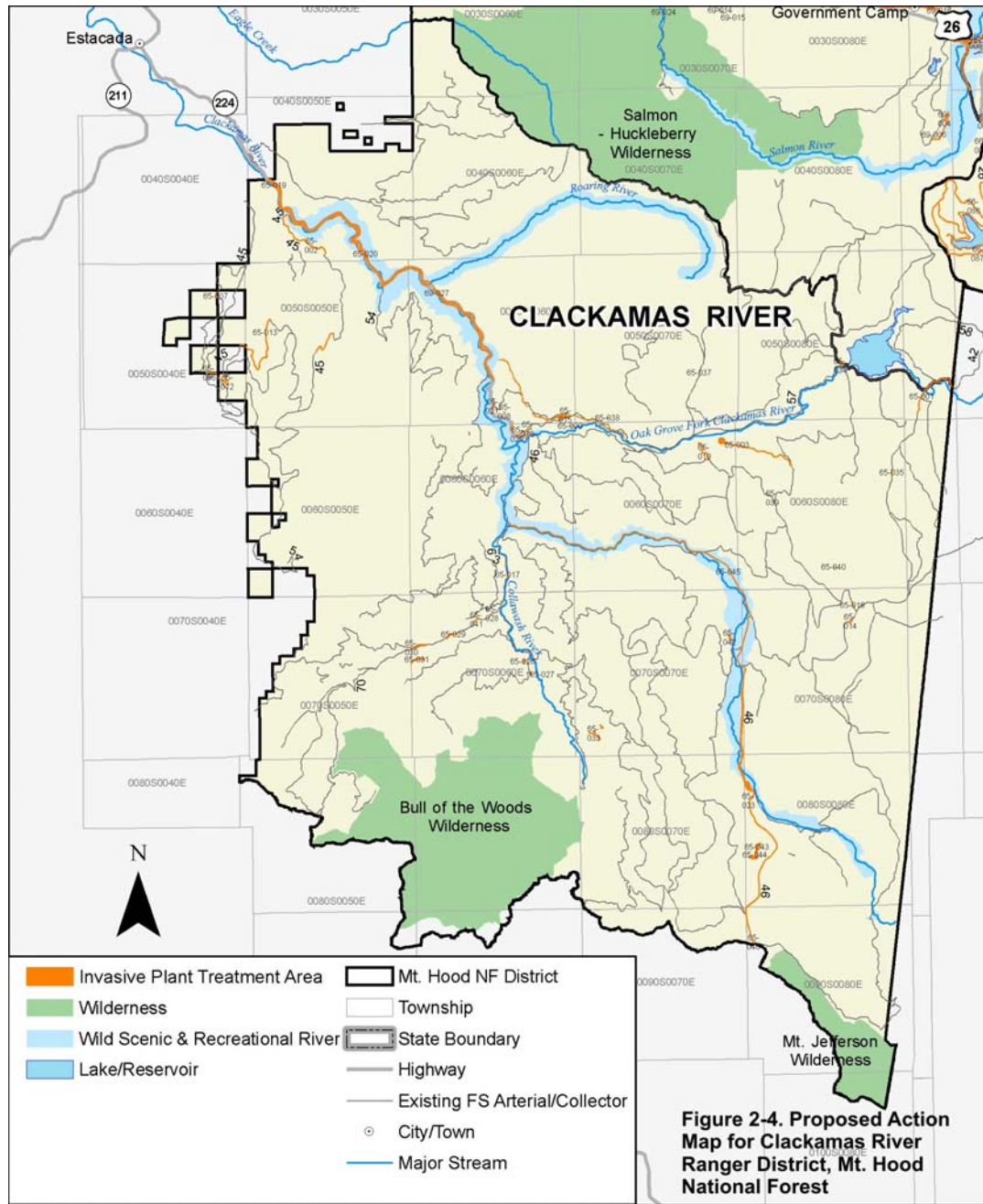


Figure 2-3. Proposed Action Map for Barlow Ranger District, Mt. Hood National Forest



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Figure A1-4. Proposed Action Map for Clackamas River Ranger District, Mt. Hood National Forest



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Figure A1-5. Proposed Action Map for Hood River Ranger District, Mt. Hood National Forest

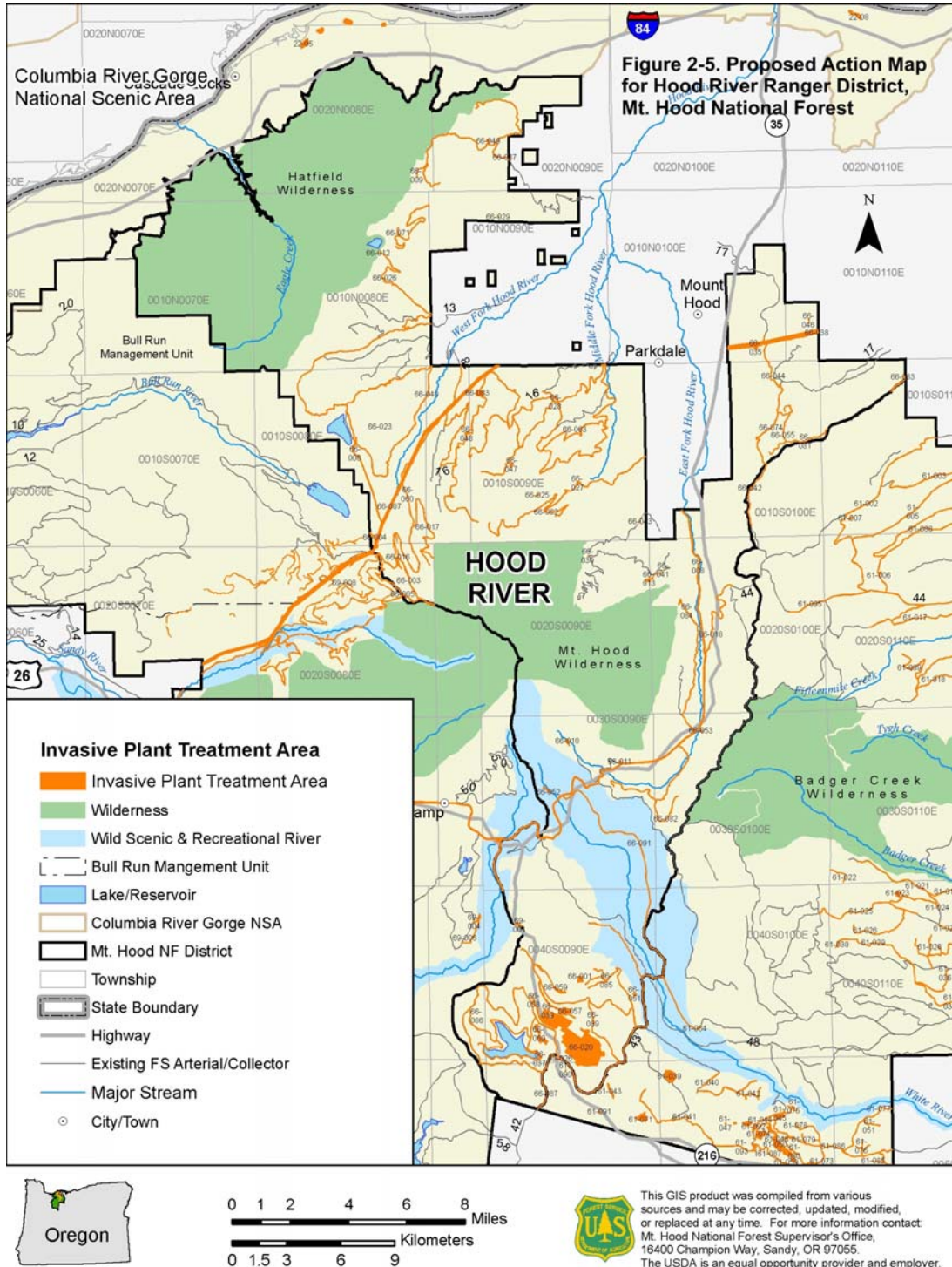


Figure A1-6. Proposed Action Map for Zigzag Ranger District, Mt. Hood National Forest

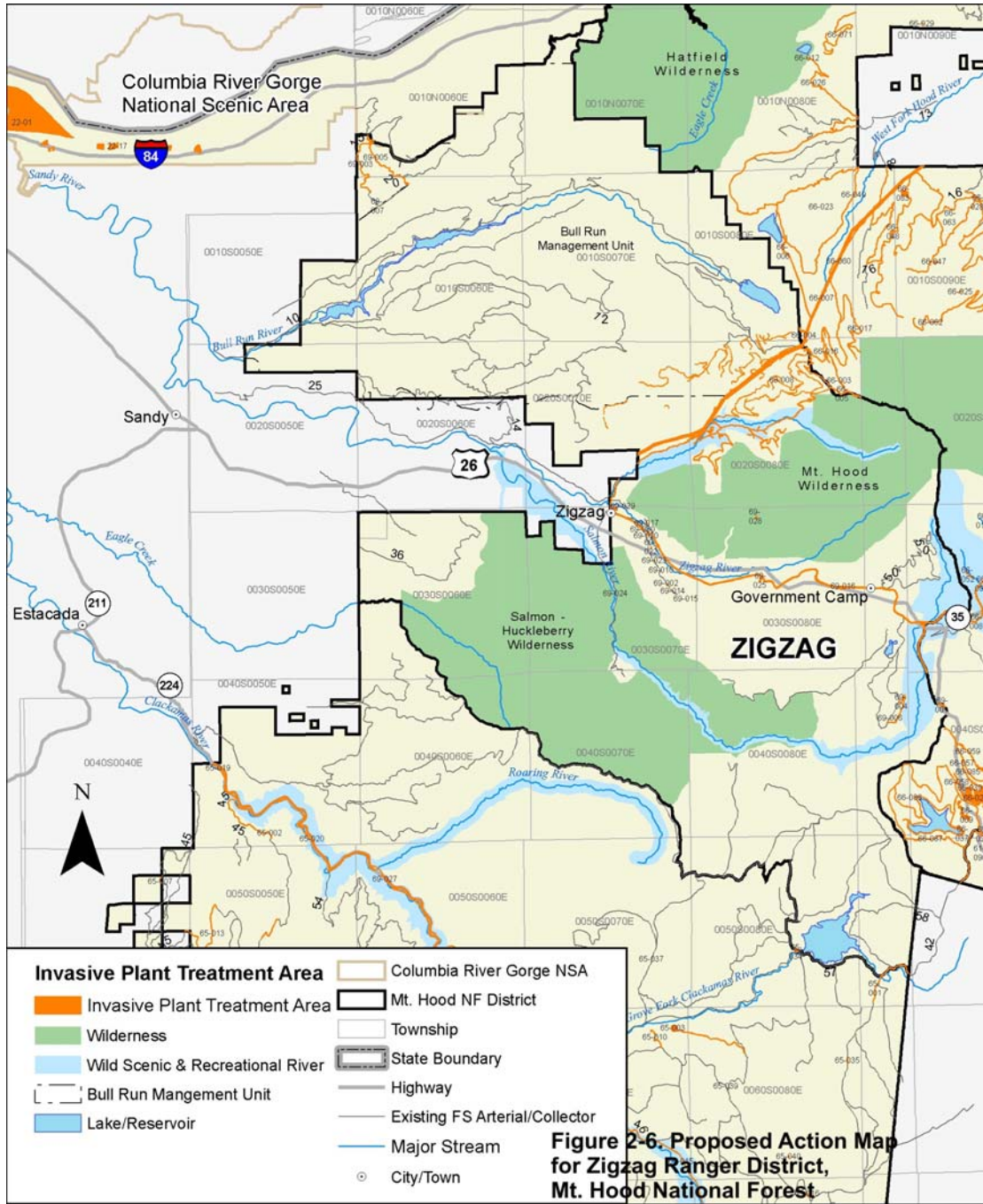
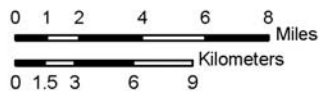


Figure 2-6. Proposed Action Map for Zigzag Ranger District, Mt. Hood National Forest



This GIS product was compiled from various sources and may be corrected, updated, modified, or replaced at any time. For more information contact: Mt. Hood National Forest Supervisor's Office, 16400 Champion Way, Sandy, OR 97055. The USDA is an equal opportunity provider and employer.

APPENDIX 2: PROJECT DESIGN CRITERIA

Project design criteria (PDC) were developed to reduce or eliminate potential impacts the various treatments may cause. PDC define a set of conditions or requirements that an activity must meet to avoid or minimize potential effects on sensitive resources. All PDC are required for both Alternatives 2 and 3. PDC are not optional and are incorporated in the effects analysis.²

A. Herbicide Applications

- A.1. Herbicides would be used in accordance with label instructions, except where more restrictive measures are required as described below.
- A.2. Herbicide use would comply with standards in the *Pacific Northwest Regional Invasive Plant Program – Preventing and Managing Invasive Plants* FEIS (2005a), including standards on herbicide selection, broadcast use of some herbicides, tank mixing, licensed applicators, and use of adjuvants, surfactants and other additives. All the standards are included in Appendix A.
- A.3. Spray equipment would be calibrated prior to seasonal start-up and periodically throughout the season to assure accuracy in applications. Spray tanks would not be washed or rinsed within 150-feet of any live water. All herbicide containers and rinse water would be disposed of in a manner that would not cause contamination of waters.
- A.4. No more than daily use quantities of herbicides would be transported to the project site.
- A.5. Equipment used for transportation, storage, or application of herbicides would be maintained in a leak-proof condition.
- A.6. Favor transportation routes with less traffic and are not adjacent to water.
- A.7. Mixtures of herbicide formulations containing 3 or less active ingredients may be applied where the sum of all individual Hazard Quotients (HQ) for the relevant application scenarios is less than 1.0. No herbicide mixing would be allowed within 150-feet of any live waters. Impervious material, such as a bucket, would be placed beneath mixing areas in such a manner as to contain any spills associated with mixing/refilling.
- A.8. Herbicide applications would not exceed the typical application rates specified in Table 2-7.

² Some of the requirements from the herbicide labels and standards in the Invasive Plant ROD (2005b) are repeated in the PDC for emphasis. All labels and Invasive Plant ROD standards need to be consulted before invasive plant treatments occur.

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- A.9. Broadcast spray with NPE surfactant would be applied at a rate not to exceed 0.5 lb ai/acre.

B. Field Operations

- B.1. A pre-operations briefing would be required annually prior to treatment between a USDA Forest Service project coordinator knowledgeable about invasive plant treatments and the lead contractor or employee who would be implementing the treatment. This session would be documented, and would serve to brief spray personnel on the location of sensitive resources (streams, lakes, wetlands, sensitive plants) and to review all operational details. The briefing would include safety issues, location, timing, treatment method, herbicides approved for use, PDC, and other pertinent topics. More briefings would be conducted as necessary to ensure that the invasive plant treatments and all PDC are implemented correctly.
- B.2. Applicators would have an Herbicide Transportation, Handling, and Emergency Spill Response Plan, approved by the USDA Forest Service, on-site during treatments. The plan would identify reporting procedures, project safety planning, methods to clean up accidental spills, including reporting spills to the appropriate regulatory agency, and information regarding a spill kit contents and location.
- B.3. Off-road vehicles used for treatment of invasive plants would remain on roadways, trails, parking areas, or authorized areas to prevent damage to vegetation and/or soil, and potential degradation of water quality and aquatic habitat.
- B.4. No motor vehicles, motorized equipment, or any form of mechanical transport would be used in a designated Wilderness area to treat or monitor invasive plants. No equipment would be cached within a designated Wilderness area.
- B.5. Equipment used in off-road operations for invasive plant treatment activities would be properly cleaned prior to entering National Forest System land and upon leaving infested sites.
- B.6. For small quantities (5 gallons or less) fueling of gas-powered machinery would not occur within 25-feet of any live waters to maintain water quality. All other fueling must occur a minimum of 150-feet from any live waters. All specific details regarding this item would be contained in a spill plan that would be approved by the USDA Forest Service prior to yearly herbicide application.
- B.7. Spray tanks would not be washed or rinsed within 150-feet of any running or standing water. All herbicide containers and rinse water would be disposed of in a manner that would not cause contamination to water.
- B.8. Some sites may only be reached by water travel. Typically, an inflatable kayak would be used, but rubber rafts or drift boats may occasionally be used. The following measures would be used to prevent a spill during water transport.

B.8.a. No more than 2.5 gallons of herbicide would be transported per kayak, and typically it would be one gallon or less. If a raft is used, no more than 5 gallons would be transported on the raft.

B.8.b. 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.

B.9. 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 areas of running water.

C. Requirements for Wind Speeds, Drift and Precipitation

C.1. No herbicide applications would occur when wind velocity is greater than 10 mph. Broadcast application would not occur at wind speeds less than 2 mph. For picloram, the maximum wind velocity is 8 mph.

C.2. To minimize herbicide application drift, use low nozzle pressure, apply as a coarse spray, and use nozzles designed for herbicide application that do not produce a fine droplet spray.

C.3. No herbicide application would occur if precipitation is occurring or is imminent within 24 hours.

D. Public Health and Safety

D.7. Workers would use appropriate personal protective clothing and equipment at all times during application. Traffic control and signing during invasive plant treatment operations would be used as necessary to ensure safety of workers and the public.

D.8. Signs notifying the public of herbicide treatments would be placed at access points to treatment areas prior to initiating treatment, a minimum of one week in advance of herbicide treatment. Signs would be removed no sooner than two weeks following application. Signs would list herbicides to be used, application dates, and name and phone number of a local contact.

D.9. Public announcement of proposed annual program of herbicide applications would be published in the local papers at least one month in advance of herbicide application (See Appendix L – Sample Public Notifications). Notifications would categorize treatment sites by those identified in this analysis and those identified under the Early Detection / Rapid Response strategy (EDRR).

- D.10. All treatment sites would be posted on the Mt. Hood National Forest (<http://www.fs.fed.us/r6/mthood/>) and Columbia River Gorge National Scenic Area (<http://www.fs.fed.us/r6/columbia/forest/>) websites. The treatment sites would be categorized by those identified in this analysis and those identified under the EDRR. The websites also would include the consistency review documentation for sites identified under EDRR or information on how to obtain the documentation
- D.11. Applicants of special forest products would receive notification of areas to be treated with triclopyr at the time of permit issuance.
- D.12. Pertinent administrative sites and developed campgrounds would be posted, barricaded with use caution tape, or closed in advance of herbicide application (normally 15 days) to ensure that no inadvertent public contact with herbicide occurs.
- D.13. Avoid any herbicide application within 600-feet of a drinking water intake on surface water. Notification of a landowner or other pertinent water district personnel would take place when herbicides are used within 1000-feet (slope distance) of a known water intake. Herbicides would not be applied within 100-feet of the eight mapped springs that are used for drinking water on the Clackamas River Ranger District.
- E. Special Status Plants (federally listed or proposed species, USDA Forest Service Pacific Northwest Region sensitive species, Survey and Manage species, and endemic species, including vascular plants, bryophytes, lichens, and fungi)
 - E.1. Protection buffer widths for special status plant species are given below in Table A2-1. Treatments would be stipulated as shown in the table. Whenever possible herbicide would be applied that are selective for invasive plants in treatment areas containing special status species.

Table A2-1. Protection Buffer Widths for Special Status Plant Species

Greater than 100 ft.	100 ft to 10 ft.	Less than 10 ft.
<ul style="list-style-type: none"> All treatments are permitted 	<ul style="list-style-type: none"> All treatments, except broadcast spraying, are permitted. Broadcast spraying is permitted when special status plant species are shielded with a protective barrier. 	<ul style="list-style-type: none"> No broadcast spraying Spot treatment is permitted when special status plant species are shielded with protective barrier. Spot treatment includes backpack spray and hand application of herbicides. Hand application of herbicide and/or manual treatment permitted without protective shielding. Under saturated or wet soil conditions are present at the time of treatment, only hand application of herbicide is permitted.

Note: For treatment sites with the epiphytic special-status species, such as the lichen *Methuselah's Beard*, within 10-feet of an invasive plant, application of herbicides by hand/selective treatment methods is advised, unless invasive plant populations in the area are simply too large to treat effectively by hand. Epiphytic lichen and bryophyte species cannot be shielded from herbicide spray or mist as can terrestrial species. Also, these species are more vulnerable since they absorb moisture and nutrients directly from the atmosphere.

E.2. For Areas where broadcast application of herbicides is to occur, surveys would be completed for the area within 100-feet from the treatment area prior to broadcast application, if (1) the area has not already been surveyed for special status plant species and (2) the area contains likely habitat for any of these species.

E.3. For all other treatments (e.g., spot spray, manual, mechanical) surveys would be completed to identify all special status plant species within 10-feet of the treatment areas.

E.4. Adaptive management would be used to refine (extend or reduce) buffer sizes in order to adequately protect special status plant species from herbicide treatments.

E.5. When applying herbicides, reduce further invasive plant infestation at the treated site by protecting non-target vegetation, whenever possible, in order to minimize the creation of exposed ground and the potential for re-infestation.

E.6. Only a portion (e.g., less than one third) of each of the seven identified treatment areas containing pale blue-eyed grass, adder’s-tongue, Watson’s desert-parsley and Methuselah’s Beard should be treated each year during the first one to three treatment years in order to assess treatment effectiveness and survival of these special status plant species. If it is determined that these special status plant species are harmed or killed resulting in concerns about the survival of the population, then treatments would need to be reassessed and modified or an alternate treatment plan devised.

F. Water Quality and Aquatic Organisms

F.1. Comply with herbicide application buffers in Table A2-2. For road ditch lines hydrologically connected (ditch line flows directly into surface water) to water bodies:

F.1.a. Spot or hand application is required in sections of wet ditch lines (water is present in ditch line or ditch line is moist).

F.1.b. For dry ditch lines, use only clopyralid, metsulfuron methyl, aquatic glyphosate, aquatic triclopyr, and aquatic imazapyr.

Table A2-2. Water Protection Measures. Aquatic influence zones for all related herbicide applications. Distances shown in the table represent the closest horizontal distance in feet (measured from bankfull flow for streams and waters edge for lakes, ponds, and wetlands) that a particular herbicide or application method can be used next to specific water bodies.

Herbicide	Perennial Stream or “Live Stream”			Intermittent Stream or “Dry Stream”			Lake, Pond or Wetland		
	Broadcast Spray (feet)	Spot Spray (feet)	Hand Application (feet)	Broadcast Spray (feet)	Spot Spray (feet)	Hand Application (feet)	Broadcast Spray (feet)	Spot Spray (feet)	Hand Application (feet)
Clopyralid	100	15	BF	50	BF	BF	100	15	WE
Chlorsulfuron	100	15	BF	50	15	BF	100	15	WE
Aquatic glyphosate	100	BF	0* WE	50	BF	0* BF	100	WE	0* WE
Glyphosate	100	50	50	100	50	50	100	50	50
Imazapic	100	15	BF	50	15	BF	100	15	WE
Aquatic imazapyr	100	BF	0*,WE	50	BF	0* BF	100	WE	0* WE
Imazapyr	100	15	BF	50	15	BF	100	15	WE
Metsulfuron methyl	100	15	BF	50	BF	BF	100	WE	WE
Picloram	100	50	50	100	50	50	100	50	50
Sethoxydim	100	50	50	100	50	50	100	50	50
Sulfometuron methyl	100	15	BF	50	15	BF	100	15	WE
Aquatic triclopyr-TEA ²	N/A ³	15	0*,WE	N/A ³	15	0* BF	N/A ³	15	0* WE
Triclopyr-BEE ²	N/A ³	150	150	N/A ³	150	150	N/A ³	150	150

¹ BF = Bankfull, WE = Water’s edge, 0* = Hand application of this herbicide is allowed within the wetted perimeter for treatment of knotweed species only

² Triclopyr-TEA in active ingredient in Garlon 3A. Triclopyr-BEE is active ingredient in Garlon 4.

³ Broadcast spraying of Triclopyr is not being considered in this EIS as a result of the impacts detailed in the Regional Invasive Plant EIS

- F.2. Do not use NPE surfactant types within 25-feet of perennial streams, wetlands, lakes, ponds or in road ditches that are hydrologically connected to water bodies. The NPE surfactant 'R-11' is not permitted in any circumstances.
- F.3. All wetland treatments (manual, mechanical, cultural, and/or herbicide) should occur during times of the year when soils are driest. If herbicide treatment is necessary when soils are wet, use aquatic formulations or low aquatic risk herbicides (clopyralid, imazapic, metsulfuron methyl, aquatic triclopyr, aquatic imazapyr, aquatic glyphosate, chlorsulfuron, imazapyr, or sulfometuron methyl).
- F.4. Follow Oregon Department of Fish and Wildlife Guidelines for Timing of In-Water Work Periods (Appendix M) that applies to portions of the project that falls below the ordinary high water mark (e.g., bankfull).

G. Soils

- G.1. Use only aquatic formulations or low aquatic risk herbicides where there is a high water table.
- G.2. Do not use chlorsulfuron on soils with high clay content.
- G.3. Do not use picloram or sulfometuron methyl on soils with high clay content (pH greater than 6.9), or coarse (texture coarser than loam and/or coarse fragment content greater than 20 percent) on shallow, unproductive or acidic soils.
- G.4. No more than one application of picloram or sulfometuron methyl would occur on a given area in a calendar year to reduce potential for accumulation in soil, except to treat areas missed during the initial application.
- G.5. Ground-based mechanized equipment would not be allowed within 25-feet of streams, ponds, or wetlands, except where existing trails/roads cross streams and the trail/roadside is the treatment area.
- G.6. Use erosion control measures (e.g., silt fence, native grass seeding) where de-vegetation may result in delivery of sediment to adjacent surface water. The Forest and Scenic Area would utilize appropriately skilled and knowledgeable individuals to assist in evaluation of sites to determine if erosion control treatment is necessary and the type of treatment needed to stabilize soils.

H. Wildlife

- H.1. Treatment of areas within 0.25-mile, or 0.50-mile line-of-sight of a bald eagle nest site would be timed to occur outside the nesting season of January 1 to August 31, unless treatment activity is within ambient noise levels and levels of human presence. Ambient noise levels would be defined as less than 92 decibels measured from the noise source to a quarter mile.
- H.2. No areas within 100-feet of a spring or seep would be sprayed with an herbicide without appropriate surveys conducted for sensitive salamanders or mollusks by qualified, knowledgeable individuals.
- H.3. No broadcast spraying within 100-yards of rocky or talus areas from June 1 to September 30 without surveying for Larch Mountain Salamanders (LMS). During unusually dry periods, this season may be extended if a specialist knowledgeable of LMS requirements feels that it is too dry for LMS to be above ground. During dry periods, LMS live underground and would not come into direct contact with herbicides.

I. Site Restoration

- I.1. Treatment areas would be assessed to determine if restoration is necessary and by what materials. Restoration would be considered for any site within the treatment area with soil disturbance or vegetative density low enough to allow re-infestation or introduction of other invasive plants, to control erosion, and/or to provide rooting strength for slope stability.
- I.2. Revegetation seed mixes would be designed on a site-specific basis to consider objectives and conditions at each potential revegetation site. Native species would be used in seed mixes, unless unavailable, and shall be in compliance with Regional, Forest, and Scenic Area native plant policies. Desirable non-native species may be used when: 1) needed in emergency conditions to protect basic resource values (e.g., soil stability, water quality and to help prevent the establishment of invasive species); and 2) as an interim, non-persistent measure designed to aid in the re-establishment of native plants. All plant species used on the National Forest System lands would comply with USDA Forest Service policy regarding source and type of plant materials used in seeding projects. Under no circumstances would undesirable plants be used.

J. Implementation

- J.1. Develop an annual treatment and restoration plan that identifies treatment sites. The treatment sites would include known and undiscovered invasive plant infestations. The plan would be developed through an interdisciplinary approach by individuals skilled in natural resource sciences and approved by the appropriate responsible official(s).

- J.2. The annual treatment and restoration plan would be reviewed for heritage resources interests, including but not limited to review by appropriate Tribal Governments depending on the treatment site locations. The review would determine if there is any new information that should be considered prior to application to protect heritage resources and culturally significant sites. The Forest and Scenic Area would ensure that archaeological sites are not impacted by any proposal to utilize a weed wrench.
- J.3. Should any historic or prehistoric cultural resources be uncovered during project activities, the applicant shall cease work and immediately notify the Forest Service. The Forest Service will follow-up with the appropriate federal, state, local, and tribal government offices.
- J.4. The Forest and Scenic Area would screen the new sites identified under the EDRR and prepare a document demonstrating how the new treatment is within the scope of the original NEPA decision. These documents would be available to the public.
- J.5. The total acreage treated annually would not exceed 13,000 acres. Treatment would not exceed three percent per year in any one fifth field watershed, as defined by Table 2-9. Treatment would not exceed 40 percent of the total area treated in each fifth field watershed. Treatment would not exceed 5,000 acres per year in riparian reserves.
- J.6. Acres treated would not exceed 30,000 acres over 15 years.

APPENDIX 3: INVASIVE PLANT DECISION KEY ³

Step 1A:	Determine the best treatment method based on the invasive plant species present and size of the infestation, using Common Control Measures (Mazzu, 2005). Determine the treatment strategy (eradicate, control, contain or suppress). Can the treatment strategy be achieved using non-herbicide, non-ground disturbing treatment methods, specially manual, mechanical and cultural (goat grazing) treatment methods? Yes: Continue to Step 10. No: Continue to Step 1B.
Step 1B:	Determine the best herbicide treatment method to achieve the treatment strategy, using the Common Control Measures (Mazzu, 2005). Can the treatment strategy be achieved using treatment methods with least impacts, such as hand/selective treatment methods (e.g., stem injection or spot spaying)? Yes: Continue to Step 1C. No: Document reasons for using treatment methods with more impacts, herbicides applied via broadcast spraying. Continue to Step 1C.
Step 1C:	Determine the most appropriate herbicide to achieve the treatment strategy, using the Common Control Measures (Mazzu, 2005). Can low toxicity herbicides, such as clopyralid, imazapic, metsulfuron methyl, aquatic triclopyr, or aquatic imazapic, achieve the treatment strategy? Yes: Continue to Step 2. No: Continue to Step 1D.
Step 1D:	Can moderate toxicity herbicides, such as aquatic glyphosate, chlorsulfuron, imazapyr, and sulfometuron methyl, achieve the treatment strategy? Yes: Continue to Step 2. No: Use one of the more toxic herbicides, such as glyphosate, triclopyr, picloram, or sethoxydim, for herbicide treatment. Continue to Step 2.
Step 2:	If the treatment area was identified in the November 2004 inventory and analyzed in this EIS, have any site conditions changed? (See Appendices C and K) If the treatment area was identified through the EDRR, continue to Step 3. Yes: Continue to Step 3. No: Continue to Step 8.
Step 3:	Is the treatment method analyzed in this EIS? Yes: Continue to Step 4. No: Choose another treatment method <u>OR</u> conduct additional NEPA on treatment methods (e.g., prescribed burning, aerial applications).

³ Modified from the Salmon-Challis National Forest Environmental Assessment, USDA Forest Service, 2003.

Step 4: Is there an unforeseen combination of physical conditions (e.g., disturbance, distance to water, slope, and soils) that is not addressed in the PDC (Section 2.2 – Project Design Criteria)?

Yes: Conduct additional NEPA on proposed treatment area and treatment method OR abandon treatment.

No: Continue to Step 5A.

Step 5A: Is the site in a designated Wilderness Area?

Yes: Continue to Step 5B.

No: Continue to Step 6.

Step 5B: If action is not taken, would the natural processes of the Wilderness Area be adversely affected?

Yes: Continue to Step 6.

No: Continue to Step 5C.

Step 5C: Is there imminent risk of invasive plants spreading outside the Wilderness Area?

Yes: Continue to Step 6.

No: Monitor invasive plant infestation.

Step 6: Are special status fish, wildlife or plant species, designated critical and essential fish habitat, or heritage resources present? Special status species are threatened, endangered and proposed species; USDA Forest Service Pacific Northwest sensitive species; management indicator species; Survey and Manage species; and other rare or endemic species of concern. This is determined using maps and/or site conditions (See Appendices C and K)

Yes: Use treatment methods that pose low or negligible risk to fish, wildlife and plant species, water, and heritage resources. Examples include use of selected herbicides (e.g., clopyralid, imazapic, metsulfuron methyl, aquatic triclopyr, or aquatic imazapic), manual or mechanical treatments, in conjunction with PDC. Continue to Step 7.

No: Continue to Step 7.

Step 7: Are surveys required for special status species?

Yes: Conduct necessary surveys. Evaluate results of surveys. If surveys illustrate a risk to the species surveyed, use treatment methods that pose low or negligible risk to fish, wildlife and plant species. Examples include use of selected herbicides (e.g., clopyralid, imazapic, metsulfuron methyl, aquatic triclopyr, or aquatic imazapic), manual or mechanical treatments, in conjunction with PDC. Continue to Step 8.

No: Continue to Step 8.

Step 8: Is the proposed treatment area in a municipal watershed or designated irrigation district?

Yes: Notify the municipal watershed and irrigation districts of proposed treatments. Ensure all applicable, existing agreements are being implemented and followed.

No: Continue to Step 9.

Step 9A:	Is the proposed treatment within the designated annual treatment caps of 13,000 acres per year? Yes: Continue to Step 9B. No: Conduct additional NEPA on additional treatment acres <u>OR</u> abandon treatment.
Step 9B:	Is the proposed treatment within the allowable treatment acres in each fifth-field watershed? (See Table 2-9) Yes: Continue to Step 9C. No: Conduct additional NEPA on additional treatment acres <u>OR</u> abandon treatment.
Step 9C:	Is the proposed treatment within the designated annual riparian reserve cap of 5,000 acres with only 40 percent of the total area treated in each fifth-field watershed being located in a riparian reserve? Is the proposed treatment within the overall cap of 40 percent of each fifth-field watershed for the life of the project? Yes: Continue to Step 9D. No: Conduct additional NEPA on additional treatment acres <u>OR</u> abandon treatment.
Step 9D:	Is the proposed treatment within the overall project cap of 30,000 acres over 15 years? Yes: Continue to Step 10. No: Conduct additional NEPA on proposed treatment area and treatment method <u>OR</u> abandon treatment.
Step 10:	Document treatment methods for each treatment area. If treatment area is identified using the EDRR, prepare a document demonstrating how the new treatment is within the scope of the original NEPA decision. Post treatment sites and consistency documentation on websites, as specified in PDC. Continue to Step 11.
Step 11:	Implement invasive plant treatment and all appropriate PDC. Is active restoration necessary? Yes: Implement appropriate restoration strategies as outline in Section 2.1.3, in conjunction with PDC. Continue to Step 12. No: Allow passive restoration to revegetate treatment site. Continue to Step 12.
Step 12:	Implement monitoring framework as outlined in Section 2.3. Are invasive plants present at the time the treatment area is monitored? Yes: Continue to Step 1. No: Continue to Step 13.

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