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Environmental Assessment

Willamette National Forest

Integrated Weed Management

Willamette National Forest
Marion, Linn, Lane and Douglas Counties, Oregon

For Information Contact: **Jennifer Lippert, Botanist and Team Leader**
Willamette National Forest
211 East 7th St.
Eugene, Oregon 97401
541-225-6440

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Summary

The Willamette National Forest (WNF) proposes to treat approximately 800 invasive plant sites found on about 9700 acres throughout the National Forest. Currently unknown sites that are newly detected would also be treated over the next 10 years using the "early Detection Rapid Response" approach. The purpose of the project is to effectively control invasive plants according to new management direction provided in the *Pacific Northwest Region Invasive Plant Program, Preventing and Managing Invasive Plants* Record of Decision (USDA Forest Service 2005a).

The **proposed action** includes the following treatment methods: manual, mechanical, cultural (grazing), herbicide and active restoration. Herbicides Glyphosate, Imazapyr, Triclopyr, Clopyralid and Sethoxydim would be approved for use according to project design criteria (PDCs). These criteria limit the rate, extent and selection of herbicides that would be used in streamside and other specific areas. This integrated weed management program would cover treatment of invasive weeds annually for at least the next 10 years.

In addition to the proposed action, the Forest Service also evaluated the following alternatives:

- Alternative 1, No Action: Use prevention activities and manual and/or mechanical control activities to eradicate, contain or suppress existing infestations across the Forest.
- Alternative 2, Current Program: Use prevention measures and manual, mechanical, cultural (grazing), and limited herbicide control methods to treat existing infestations.

Chapter I: Introduction

Background

This site-specific invasive plant EA applies to the entire Willamette National Forest (WNF). The majority of the project area is located in Marion, Linn and Lane Counties. A small part of Douglas County is also located on the WNF. The lands total approximately 1.6 million acres, exclusively on the west side of the Cascade Mountains (see Figure 1, Map of Willamette National Forest). Urban areas the Forest serves are the Salem and Eugene/Springfield areas.

Figure 1. Map of Willamette National Forest and Environs

Invasive plants are defined as “non-native plants whose introduction does or is likely to cause economic or environmental harm or harm to human health” based on the definition provided in Executive Order 13112 issued in 1999. Invasive plants are compromising our ability to manage the Forest for a healthy native ecosystem (the Desired Future Condition for Region 6, USDA, 2005a). In the past, it was assumed that invasive plants simply invaded disturbed habitats and once those habitats were restored or reforested, the weeds would cease to exist. However, several new species such as false brome and Japanese knotweed have shown that unmanaged habitats such as riparian areas or second growth forested stands are also prone to invasion. Researchers have found that few habitats are invulnerable to invasion (Crawley, 1987; Di Castri, 1990).

Invasive plants can create a host of environmental effects through directly altering the site by changing resource availability or disturbance regimes or both (Brooks et. al, 2004; Gordon, 1988). A variety of environmental effects may result from invasions including displacement of native plants, reduction in habitat and forage for wildlife (DiTomaso, 2000), increased potential for soil erosion and sedimentation, altered hydrologic cycling, alteration of physical and biological properties of soil (Macdonald, 1989), loss of long-term riparian function, loss of habitat for culturally significant plants, high cost to control invasive plants and increased cost in maintaining transportation systems and recreation sites.

This EA addresses inventoried invasive plant species as well as additional invasive plant populations that may be treated using the early detection-rapid response strategy (see Alternative Descriptions).

The invasive species included in this analysis may be found in Table 1. Plants are categorized as potential invaders, new invaders and established invaders and control strategies will differ, depending on species' classification. **Potential invaders** are those species located in adjacent National Forest or other lands that have a high probability of being detected on the Forest in the foreseeable future (next 15 years) because potential habitat exists here. **New invaders** are those weed species just entering the National Forest and whose populations are possible to eradicate. **Established infestations** include weed species that are so widespread on the Forest they are not likely to eradicate. Some species, such as blackberry, can have both new invader populations that are less than 10 plants and are outliers as well as established infestations such as those that are found bordering streams at lower elevations.

Invasive plants have been inventoried by botanists, contractors and cooperators for the past 13 years. Sites analyzed in this EA are primarily composed of new invaders. Sites of established infestations are targeted for treatment in unique areas such as Special Wildlife Habitats, meadows being restored or powerline corridors being enhanced for wildlife forage.

Table 1. Invasive Plant Species Currently Documented or Suspected on the Willamette National Forest.

Potential Invaders	New Invaders	Established Infestations
Leafy spurge	Spotted knapweed	Canada thistle
Yellow starthistle	Diffuse knapweed	Bull thistle
Distaff thistle	Yellow toadflax	Scotch broom
Squarrose knapweed	Dalmatian toadflax	Tansy ragwort
Gorse	Japanese knotweed	St. Johns-wort
Orange hawkweed	Meadow knapweed	Foxglove
French broom	Climbing nightshade	Oxeye daisy
Garlic mustard	Field bindweed	
Himalayan knotweed	Evergreen blackberry*	
	Himalayan blackberry*	
	False brome	
	Reed canarygrass*	
	Sweetclover	
	Houndstongue	
	English ivy	
	Butterfly bush	
	Yellow hawkweed	
	Purple loosestrife	
	Everlasting peavine	
	Vinca	
	Evening primrose	
	Bladder campion	
	Creeping buttercup	
	Creeping charlie	
	Yellowflag iris	
	Shinyleaf geranium	
	Sulphur cinquefoil	
	Herb robert	
	Depford pink	
	Burdock	
	Feverfew	
	Anise	

* Species with a star may be considered either new or established weed infestations, depending on their densities. For example, blackberry at low elevations along river corridors are established, but sincle clumps at high elevations are newly invading. Reed canarygrass around reservoir fringes is established but clumps around alpine lakes are newly invading.

Regulatory Framework/ Management Direction

Several standards and guidelines from the Willamette Land and Resource Management Plan (WNF Forest Plan, USDA, 1990) provide direction for management of invasive plants directly or indirectly:

- **Wilderness**- MA-1-60 There should be no long-term modification, and only limited short-term modification, of natural plant succession as a result of human activity.
- **Research Natural Areas**- MA-4-15 Introduction of exotic plant and animal species shall not be permitted. Reintroduction of former native species, including fish stocking, may be permitted if the objectives of the RNA are met.
- **Special Interest Areas**- "Plant and animal communities inhabiting these unique or special areas will flourish in a mostly undisturbed environment" where maintenance of the physical, cultural or biological attributes of note should be maintained
- **Special Wildlife Habitat**. MA-9d-07 Habitats of native wildlife and plants shall be maintained. This analysis tiers to the United States Department of Agriculture Region 6 Forest Service's Record of Decision (heretofore called the Region 6 ROD), signed in October 2005 (USDA, 2005a). The Region 6 ROD provides a Desired Future Condition (DFC), specific Goals and Objectives for National Forests to follow in their noxious weed management and amends Forest Land and Resource Management Plans with twenty-three standards to follow to ensure weed prevention and management (see Appendix A for DFC, Goals and Objectives and Standards).

The Forest Plan was amended by the WNF Weed Management Plan in 1999 (Amendment 239, see Appendix B). The amendment contained four sections: (1) weed prevention guidelines; (2) manual control on any infestation without additional NEPA analysis; (3) release of biological control agents approved by APHIS and the State of Oregon; (4) and treatment options for differing site types (Appendix C). The Plan listed potential, new and established weed infestations and prioritizes treatment of new invaders. It specified treatment design factors based on proximity to water, TES species, Wilderness and administrative sites with high use. Glyphosate and Triclopyr (Garlon 3A only) were approved for use under specific conditions. It prescribed a method for early detection-rapid response including up to 25 new sites per year.

In October 2005, the Pacific Northwest Region (Region 6) of the Forest Service completed a Final Environmental Impact Statement (Region 6 FEIS) addressing the invasive plant management program, culminating in a Record of Decision (Region 6 ROD) which added management direction to the WNF Forest Plan, The Region 6 ROD adopted a Desired Future Condition (DFC) statement, several goals and Objectives and 19 standards for invasive plant prevention and treatment/restoration (See Appendix A for DFC, Goals and Objectives and Standards).

The current Weed Management Plan is not fully consistent with the R6 ROD. Three of the four sections of the current plan (prevention guidelines, manual treatments and biological agents) are generally consistent with the ROD. However, Section 4, treatment methods, does not allow for use of new herbicides approved in Standard 16, and has not been effective at eradicating rhe new invader species on the Forest. The project analysis in this EA is tiered to the R6 FEIS. The focus of the effects analysis is on the portion of the Invasive Plant Management Program that must be updated to be in compliance with the new Standards.

Watershed Analyses were written for all the 5th field watersheds on the Forest. They provide direction for maintenance and restoration activities. All Watershed Analyses suggest that management of invasive plants is a crucial factor in maintaining the health of these ecosystems.

Purpose and Need for Action

Desired Future Condition (from the R6 ROD): Healthy native plant communities remain diverse and resilient, and damaged ecosystems are being restored. High quality habitat is provided for native organisms. Invasive plants do not jeopardize the ability of National Forests to provide goods and services communities expect. The need for invasive plant treatment is reduced due to the effectiveness and habitual nature of preventative actions, and the success of restoration efforts.

Current condition: Approximately 9,700 acres of the Willamette National Forest are currently degraded by infestations of invasive plants. Three hundred twelve (312) new weed sites have been found since the 1999 environmental analysis was conducted. Fourteen new weed species have been added to the new invader or potential invader list and management needs to be prescribed for them (surveys were conducted yearly to develop a database of weed sites- see Appendix D- but areas are likely underestimated due to incomplete inventory and yearly spread). Current management methods are not effective at eradicating the new invader species found on the Forest.

- Additional herbicides have been approved for use (Standard 16).
- The current approach to early detection-rapid response is not adequate to address the need for timely treatment (Objective 1.5)
- Current direction is not prescribed for long-term site strategies for restoring/revegetating treatment sites, preferably with native plant materials (Standards 12 and 13)

Action is needed to update Section 4 od the invasive plant management plan so that treatments are timely, effective, and result in long-term restoration, The purpose of this project is to reverse the negative impacts caused by invasive plants and to restore ecological communities and function at impacted sites in a cost-effective manner that meets current management direction.

Without action invasive plant populations would continue to grow, compromising our ability to manage the forest for healthy native ecosystems.

Proposed Action

The Forest Service proposed to contain established infestations and to eradicate new invader infestations at 753 weed sites on 9700 acres of the Willamette National Forest. The program would allow treatments within road corridors and in documented sites. All tools described in Table 2 would be available for use; the most effective tool would be used on the infestation, taking into consideration the location of Threatened, Endangered and Sensitive species, proximity to water, soil types, traditional uses and weed population size and species. Manual and biological treatments could occur anywhere on the Forest. Mechanical treatments could be used outside Wilderness and may be seasonally restricted in response to TES bird species. Cultural methods such as grazing with goats could be used outside Wilderness or roadsides.

Herbicide use would be limited within 50 feet of streams, ditches that lead to streams, and other water bodies:

▪ Within 10 feet water	Stem injection of aquatic glyphosate Wiping of aquatic glyphosate and imazapyr
▪ 10-50 feet from water	all of the above plus backpack spot spray with Aquatic imazapyr and glyphosate
▪ Greater than 50 feet from water	Backpack or truck-mounted hand sprayer with glyphosate, impazypyr, chlopyralid (for knapweeds, except for areas of high water table and permeable soils), sethoxydim (for grasses), and triclopyr (Garlon 3A only)

Treatment of invasive weeds would occur annually for at least the next 10 years. Project Design Criteria (PDC) would be used to determine treatment method for each site. These are developed to integrate effectiveness of treatment, herbicide label restrictions and mitigation measures. A matrix is developed to determine appropriate treatment method. If herbicide treatments were the only effective method to control a weed infestation, the site would go through a screening process to determine whether the site is in Wilderness (no mechanical, grazing), a TES or Survey and Manage species site (no herbicide application or selective wiping or shielding; seasonal restrictions on mechanical treatments), whether the site is within a 50-foot riparian buffer (only certain herbicides available), whether the site is near a wetland or has highly permeable soils (only certain herbicides available).

This alternative would allow for Early Detection and Rapid Response (EDRR) in treatment of uninventoried invasive plant infestations as long as treatments and site types are consistent with those analyzed in this document. EDRR treatments would total no more than 3,000 additional acres. Under EDRR, no more than 10 contiguous acres or 1.5 stream miles per 6th field watershed would be treated per year.

The proposed action would approve treatment of terrestrial and riparian infestations but does not address aquatic invasive species, Amendment 239d (WNF Weed Management Plan) would be replaced with a new list of site types and approved treatment methods. Prescribed burning and aerial or broadcast herbicide applications are not proposed. All management activities on Forest land would incorporate prevention activities to prevent movement into uninfested areas as directed by the R6 2005 ROD.

Decision Framework

Given the purpose and need, the Forest Supervisor, Deciding Official, will review the proposed action and the other alternatives, including the No Action Alternative, to determine how to meet the Desired Future Condition and Goals and Objectives in the Region 6 EIS for Invasive Plant Management.

Specific elements that the Deciding Official will consider in the decision include:

- Protection of ecosystems from the impacts of invasive plants through an integrated, cost-effective approach?
- Protection of the health of persons who work, visit or live in or near National Forest
- Protection of sensitive ecosystem components and maintain biological diversity

Public Involvement

The proposal was listed in the Schedule of Proposed Actions for Willamette National Forest beginning in January 2005. The proposal was provided to the public and other agencies for comment during scoping January 3-February 4, 2005. In addition, Tribal Consultation was conducted. The Forest sent maps of proposed treatment sites to the Klamath Tribes, the Confederated Tribes of the Grand Ronde, Siletz Tribes and the Confederated Tribes of the Warm Springs. Meetings were held with Tribes that wanted a briefing and had comments on specific treatment sites: the Confederated Tribes of the Grand Ronde on May 2, 2006; Confederated Tribes of the Warm Springs on April 18, 2006; and the Siletz Tribes on March 15, 2006. We also

met with EWEB to brief them on the project on May 15, 2006. Notes from meetings are in the project file.

Using the comments from the public, other agencies, and the Tribes listed above (see Issues section), the interdisciplinary team developed a list of issues to address.

Issues

The Forest Service separated the issues into two groups: significant and non-significant issues. Significant issues were defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)…" A list of non-significant/ tracking issues and reasons regarding their categorization as non-significant may be found in the project record.

As for significant issues, the Forest Service identified 3 topics raised during scoping. These issues include:

Effects on aquatic and riparian fish and wildlife: The application of herbicides in riparian areas has the potential to contaminate terrestrial riparian habitat and water, causing mortality to amphibian and fish species. The largest risk is from drift of herbicide onto non-target vegetation used for food or habitat or drift into water. Some herbicides also pose a risk to water quality through leaching through the soil profile. There are potential indirect effects to food chain through removal of vegetation and sublethal effects on fish behavior.

Indicators for comparing alternatives:

- Acres of herbicide use within 50 foot buffer from a perennial stream or wetland
- Acres of occupied or historic Threatened, Endangered and Sensitive fish sites that would not be buffered from herbicide use

Human health: There is a potential for humans to be exposed to herbicides where they visit treated sites, for example at trailheads or in campgrounds. Humans could inadvertently brush up against vegetation that has been treated with herbicides. Eugene Water and Electric Board staff noted concern that herbicides not be used in a way that they could migrate into drinking water. The most plausible method for herbicides to enter drinking water would be from herbicide drift, although some herbicides can leach through the soil profile.

Indicators for comparing alternatives:

- Acres of herbicide treatment proposed in areas of high human use such as campgrounds, trailhead parking lots and dispersed campsites
- Number of plausible exposure scenarios to drinking water that exceed the threshold of concern for herbicides proposed for use

Other issues brought forward by the public that are tracked through the document include:

Culturally significant plants

Members of the Grand Ronde, Klamath, Siletz and Warm Springs collect plants for food, medicine, basketry or other purposes on the Willamette National Forest. There may be sites where plants collected by Tribal members are slated for herbicide treatments and this may be a conflict. This was deemed a non-significant issue because there is only one known site where these conflicts may arise and it is being mitigated by using manual controls at the site. Other sites will be mitigated through signing of treatment sites before and after treatments.

Native Plant Communities

Invasive plant treatments, especially herbicide application, may harm desirable, non-target plants. Herbicides differ in their effects on plants; some may selectively target broadleafs (Garlon 3A) or grasses (Poast). Application methods differ in their probability for drift. As invasive plants are eradicated, it is expected that native plant communities will benefit because of an increased opportunity to expand. This was deemed a non-significant issue because herbicides will only be applied through wiping, stem injection or hand-held wands to mitigate effects on non-target plant species.