

Chapter 1 – Purpose and Need for Action

1.1 Background

The Wallowa-Whitman National Forest, (see Vicinity Map above) located in the northeast corner of Oregon and west central edge of Idaho, covers 2.3 million acres. It lies within Wallowa, Union, Baker, Malheur, Umatilla, and Grant Counties in Oregon and Adams, and Nez Perce Counties in Idaho. The Forest ranges in elevation from 875 feet on the Snake River in the bottom of the Hells Canyon National Recreation Area to 9,845 feet in the Eagle Cap Wilderness of the Blue Mountains. The Forest is the largest administrative unit in the Pacific Northwest Region.

Until recently the Forest was composed of seven ranger districts including the Hells Canyon National Recreation Area (HCNRA). Presently, the Baker, Unity and Pine Districts have been combined and are now known as the Whitman Ranger District. This document, including Table 1 below, does not reflect this change. However, the information and project presented in this EIS is still considered accurate and valid; even though the program of invasive plants treatment will be carried out by five instead of seven administrative districts.

The Wallowa-Whitman National Forest proposes to protect native vegetation by controlling, containing, or eradicating invasive plants across the Forest. Nearly 23,000 acres of invasive plant infestations have been identified and mapped. Invasive plants are defined as “non-native plants whose introduction do or are likely to cause economic or environmental harm or harm to human health” (Executive Order 13122). Dale Bosworth (then Chief of the Forest Service), declared invasive species as one the four main threats to ecosystem health (USDA Forest Service 2003). Invasive plants have the potential to displace or alter native plant communities and cause long-lasting economic and ecological problems within and outside the National Forests. Invasive plants can increase fire hazards, degrade fish and wildlife habitat, eliminate rare and endangered plants, impair water quality and watershed health, and adversely affect a wide variety of other resource values such as scenic beauty and recreational opportunities. Their strong reproductive and competitive abilities and a lack of natural predators allow invasive plants to spread rapidly across the landscape to noninfested areas, unimpeded by ownership or administrative boundaries.

An extensive inventory of invasive plant sites was completed by the Wallowa-Whitman National Forest in 2006. The inventory, conducted district by district, mapped sites of known invasive plant infestations listed in Tables 1 and 2. This inventory is a compilation that includes an inventory completed in 1990, an update of that inventory done for the 1992 and 1994 noxious weed EAs, the districts’ annual inventories since then, and a recent inventory effort to complete a data base of all known invasive plant sites. At present, 40 different invasive plant species are known to occur within the boundaries of the Forest. Species of greatest concern include common bugloss, knapweed, yellow star thistle, dalmation toadflax, common cuprina, Mediterranean sage, leafy spurge, yellow hawkweed, and rush skeleton-weed. Our ability to prevent or minimize the adverse impacts to native plant communities by these and other invasive plants is greatest if populations can be treated while they are small and in the early stages of invasion. Many of our current infestations occupy small areas, less than an acre. Probability of successful treatment is greater for small or new invasive populations and can be controlled at lower costs than once the infestation becomes large.

Table 1-Number of Invasive Plant sites by species identified by District on the Wallowa-Whitman NF

Scientific Name	Common Name	Number of Invasive Plant Sites by Districts							
		Baker	Wallowa-Valley	HCNRA	Eagle Cap	LaGrande	Pine	Unity	Grand Total
<i>Acroptilon repens</i>	Russian knapweed	1		3					4
<i>Alopecurus myosuroides</i>	Blackgrass or slender meadow foxtail			1					1
<i>Anchusa officinalis</i>	Common bugloss			1					1
<i>Cardaria draba</i>	Hoarycress (Whitetop)	10	1	84		21	42	21	179
<i>Carduus nutans</i>	Musk thistle					3		3	6
<i>Centaurea diffusa</i>	Diffuse knapweed	23	128	47	16	108	29	33	384
<i>Centaurea maculosa</i>	Spotted knapweed	16	73	39	9	16	3	13	169
<i>Centaurea species</i>	Knapweed species	1	17	1		1	3	2	25
<i>Centaurea debeauxii</i>	Meadow knapweed				1				1
<i>Centaurea solstitialis</i>	Yellow star thistle	3	12	136		28	2		181
<i>Centaurea virgata</i>	Squarrose knapweed	2							2
<i>Chondrilla juncea</i>	Rush skeleton-weed			34			2		36
<i>Cirsium arvense</i>	Canada thistle	24	4	18	6	40	13	49	154
<i>Cirsium vulgare</i>	Bull thistle					2			2
<i>Convolvulus arvensis</i>	Field bindweed						1		1
<i>Conium maculatum</i>	Poison hemlock			2			1		3
<i>Crupina vulgaris</i>	Common crupina		1						1
<i>Cuscuta sp.</i>	Dodder			1			1		2
<i>Cynoglossum officinale</i>	Houndstongue	13				1	14	36	64
<i>Cytisus scoparius</i>	Scotch broom	1	1			2			4
<i>Dipsacus fullonum</i>	Teasel	1						1	2
<i>Euphorbia esula</i>	Leafy spurge	1	1	1		7		2	12
<i>Polygonum cuspidatum</i>	Japanese knotweed			2					2
<i>Hieracium caespitosum</i>	Yellow hawkweed		1	4	24				29
<i>Hypericum perforatum</i>	St john's wort	32		4			15	5	56
<i>Lepidium latifolium</i>	Pepperweed						1		1
<i>Linaria dalmatica</i>	Dalmation toadflax	8	60	18	1	4	5	34	130
<i>Linaria sp.</i>	Toadflax species		3						3

Scientific Name	Common Name	Number of Invasive Plant Sites by Districts							
		Baker	Wallowa-Valley	HCNRA	Eagle Cap	LaGrande	Pine	Unity	Grand Total
<i>Linaria vulgaris</i>	Yellow toadflax	2	2	1			2	1	8
<i>Lythrum salicaria</i>	Purple loosestrife			3					3
<i>Onopordum acanthium</i>	Scotch thistle	12	37	95		5	3	5	157
<i>Potentilla recta</i>	Sulphur cinquefoil	12	1			3	18		34
<i>Rubus discolor</i>	Himalayan blackberry			3					3
<i>Salvia aethiopsis and Salvia sclarea</i>	Mediterranean and clary sage			1					1
<i>Salsola tragus</i>	Russian thistle						1		1
<i>Senecio jacobaea</i>	Tansy ragwort	1	2	1	1	36		8	49
<i>Senecio sp.</i>	Senecio species		3	1					4
<i>Solanum elaeagnifolium</i>	silverleaf nightshade			2					2
<i>Taeniatherum caput-medusae</i>	Medusahead			21			1		22
<i>Tribulus terrestris</i>	Puncturevine			1					1
Totals	40 Species	163	347	525	58	277	157	213	1740

Table 2-Acres of invasive plants by species and district

Invasive plant species	Acres of Invasive Plant Species by District								
	Baker	Wallowa-Valley	HCNRA	Eagle Cap	LaGrande	Pine	Unity	Acres (gross)	Estimate of Total Infested Acres ¹
Russian knapweed	21		5					26	7
Blackgrass or slender meadow foxtail*			0					0	0
Common bugloss*			5813					5813	1500
Hoarycress-White-top	104	15	556		88	476	250	1489	819
Musk thistle*					2		26	27	7
Diffuse knapweed**	420	827	433	707	888	337	538	4150	1038
Spotted knapweed*	76	212	417	35	32	11	124	907	227

Invasive plant species	Acres of Invasive Plant Species by District								
	Baker	Wallowa-Valley	HCNRA	Eagle Cap	LaGrande	Pine	Unity	Acres (gross)	Estimate of Total Infested Acres ¹
Knapweed species*	35	38	2		2	31	10	119	30
Meadow knapweed*									
Yellow starthistle**	10	97	868		419	572		1966	492
Squarrose knapweed*	7							7	2
Rush skeleton weed*			375			15		390	98
Canada thistle	471	200	738	128	462	168	1227	3395	849
Bull thistle					22			22	6
Field bindweed						3		3	1
Poison hemlock			7			1		7	2
Common crupina*		284						284	71
Dodder			7			2		10	2
Houndstongue	211				40	407	322	980	245
Scotch broom*		115						115	29
Teasel	22						8	30	8
Leafy spurge*	52	1	1		22		27	102	26
Yellow hawkweed*			7	9				16	9
St john's wort	259		213			100	32	603	151
Pepperweed*						1		1	
Dalmation toadflax*	78	192	15	3	2	137	302	728	182
Toadflax species		4						4	1
Yellow toadflax	35	2	8			6		51	13
Purple loosestrife*			3					3	1
Scotch thistle	89	427	1194		17	21	97	1844	461
Japanese knotweed*			78					78	19
Sulphur cinquefoil	81	0			10	96		187	47
Himalayan blackberry			15					15	4
Mediterranean and clary sage**			22					22	6
Russian thistle						10		10	2
Tansy ragwort	3	2	1	1	7		64	78	20
Senecio species		4	4					8	2

Invasive plant species	Acres of Invasive Plant Species by District								
	Baker	Wallowa-Valley	HCNRA	Eagle Cap	LaGrande	Pine	Unity	Acres (gross)	Estimate of Total Infested Acres ¹
Silverleaf nightshade*			11					11	3
Medusahead			6			915		921	230
Puncturevine			12					12	3
Total	1974	2416	10811	883	2013	3309	3027	24434	6613

* = Ranked as priority species 1 across all districts, ** = 85% of districts ranked as priority species 1, *** 71% of districts ranked as priority species 1.

¹Estimates of total infested acreages represent 55% for whitetop and hawkweed and 25% for all other species, common bugloss site estimated at 1,500 acres (L. Dawson 2007).

²Total includes multiple species occurring on the same site; therefore acres reported here are larger than 22,842 acres infested. Rows may not add up to the row total due to rounding error.

The Pacific Northwest Region published the programmatic *Pacific Northwest Region Invasive Plant Program Preventing and Managing Invasive Plants FEIS* (USDA Forest Service 2005a), April 2005 along with its accompanying *Record of Decision for Invasive Plant Program Management* (USDA Forest Service 2005b) on October 11, 2005. This decision amended all Forest Plans in the Region, adding new direction for containing, controlling or eradicating invasive plant species using prevention practices, various mechanical and hand treatments, and chemical treatments. This decision allowed for the use of chemicals from an updated list of herbicides for effectively responding to invasive plant threats. The new herbicides offer many advantages over the more limited set of herbicides allowed previously, including greater selectivity, less harm to desired vegetation, reduced application rates, and lower toxicity to animals and people. The R6 2005 ROD and R6 2005 FEIS require that prior to the use of these new herbicides, site-specific treatment prescriptions for both new and previously analyzed invasive plant sites on the Forest need to be developed based on the updated herbicide tools and management direction.

This EIS will focus on developing these treatment methods including the use of herbicides aimed at containing, controlling, or eradicating, invasive plants, and the effects of such treatments on the forest landscape and human environment.

The Wallowa-Whitman National Forest has been treating invasive plants according to direction in the *Wallowa-Whitman National Forest Environmental Assessment for the Management of Noxious Weeds and Forest Plan Amendment 4* (USDA Forest Service 1992) and the *Wallowa-Whitman Management of Noxious Weeds Environmental Assessment* (USDA Forest Service 1994a). The two EAs identified approximately 5,000 acres for treatment of 21 invasive plant species. These documents did not allow the Forest Service the ability to respond quickly to new infestations because the process only covered those sites known at that time. The two EAs authorized the use of four herbicides; however, one of these, dicamba, is restricted from use in Region 6 by the R6 2005 ROD.

Monitoring has shown a substantial increase in invasive plant populations (USDA Forest Service 2002). The Forest treated approximately 7,200 acres between 1997 and 2001 (USDA Forest Service 2004a). Though some of the initial invasive plant sites identified in the 1992 and 1994 EAs have been successfully contained or controlled, many new sites have been identified and some existing sites have grown. The strategy has been labor intensive sometimes requiring multiple visits to sites each year, and the budget was not always adequate to extensively control or eradicate target infestations. The limited funds were used to control weeds along major Forest System roads, providing funds to cooperative weed management areas for treatment and monitoring. The Wallowa-Whitman National Forest has completed limited invasive plant treatments after fire disturbance using the Burned Area Emergency Rehabilitation (BAER) authority. Complete information about these treatments is available in the project record. The documented expansion of many infestations and identification of new invasive plant species has established the overall ineffectiveness of treatments under the two EAs.

Thus, the purpose of the Proposed Action is to (1) treat and restore desirable vegetation in areas known to contain invasive plants, and (2) treat new infestations. This EIS analyzes the effects of a project proposal that would achieve those two purposes in a manner consistent with the LRMP.

1.2 Desired Future Conditions

Maintain or improve the diversity, function, and sustainability of desired native plant communities and other natural resources that can be adversely impacted by invasive plant species. Containment, control, or eradication strategies are applied to invasive plant infestations using rapid, comprehensive and effective methods for invasive plant management.

The Forest is able to (1) implement treatment actions to contain and reduce the extent of invasive plants at existing inventoried sites, and (2) rapidly responds to new or expanded invasive plant sites as they may occur in the future.

By treating infested areas, the spread of invasive plants onto neighboring lands is reduced or eliminated. The new direction in the LRMP as amended by the R6 2005 ROD allows effective treatments that reduce the need for repeated herbicide use and ultimately reduces reliance on herbicides.

1.3 Purpose and Need

Invasive plants pose one of the greatest ecological threats to public lands in the United States. Sizeable infestations can displace or alter native plant communities and cause long-lasting economic and ecological problems within and outside the National Forests. Weeds can spread rapidly across the landscape to noninfested areas, unimpeded by ownership or administrative boundaries, because of their strong reproductive and competitive abilities.

Invasive plants can and do occur almost anywhere on the landscape. Common sites of infestations include rangelands, timber harvest areas, along roads and road rights-of-way (including decommissioned roads), along trail routes, at dispersed and developed recreation sites, wilderness areas, national recreation areas and on other disturbed sites (i.e. fires, flood events, and rock quarries). These invasive plants will likely continue to expand and spread every year that effective treatment is not applied. At some point, individual populations of invasive plants can get so large as to be impossible to eradicate or cost-effectively control. Botanical species of local interest are threatened by invasive plants at approximately 80 infested sites. Fish habitat quality is being degraded by invasive plants in over 5,000 acres of riparian areas. Tribal resources and subsistence gathering can be degraded by the invasive plants. Range land quality is being degraded. Wildlife habitat quality can be adversely affected as invasive plants out compete native plant species. Roadless, wilderness, wild and scenic rivers, research natural areas and botanical areas are all high priority areas for treatment due to the value of the resources at risk from invasive plants.

Thus, there is a need to contain, control or eradicate nearly 23,000 acres of invasive plant infestations that have been inventoried and mapped on the Wallowa-Whitman National Forest. Further, there is a need to treat new infestations (including new species) soon after they are detected on the landscape so they can be controlled while they are still small. The current management direction does not allow for a full range of effective treatments because 1) only 20 percent of the current infested area may be treated with herbicides and 2) the three herbicides available are not effective treatment for the entire invasive plants resident on the Forest.

This EIS is being prepared to allow the Wallowa-Whitman National Forest to control invasive plant species across the Forest using Forest Plan direction as amended by the R6 2005 ROD. The purpose of the project is to bring the treatment program into compliance with the new standards and allow for effective treatments on all sites currently known, and those that may be detected

during the life of the project. Initial treatments will rely heavily on herbicides, but the goal of this project is to eventually, as invasive plant objectives are met, reduce the use of herbicides.

Invasive plant control is needed to maintain or improve the diversity, function, and sustainability of desired native plant communities and other natural resources that can be adversely impacted by invasive plant species. Specifically, there is an underlying need on the Forest to: (1) implement treatment actions and site restoration to contain, control and eradicate the extent of invasive plants at existing inventoried sites, and (2) rapidly respond to new or expanded invasive plant sites as they are detected in the future. Without action, invasive plant populations will become increasingly difficult and costly to control and will further degrade forest and grassland ecosystems. Untreated infested areas will also contribute to the spread of invasive plants onto neighboring lands.

1.4 Proposed Action

Invasive plants would be contained, controlled, or eradicated by using a variety of chemical, physical, biological, and cultural treatment methods. Treatments are proposed for existing infestations based on Common Control Measures, which include a range of effective treatments known for each target species detected in a 2006 inventory. About 23,000 acres are proposed for treatment.

The Proposed Action would approve about 875 acres of aerial herbicide application, about 16,600 acres of ground based applications, and about 3,200 acres of spot spraying and selective (wicking, wiping, stem injection) herbicide application on sites mapped in the 2006 inventory. Herbicide application method is based on the extent, location, type and character of an infestation. Herbicide application method is limited by Project Design Features that do not allow broadcast in certain situations (for instance immediately adjacent to streams). Herbicide application would be approved on about 21,000 acres; however, other non-herbicide methods could also be used in combination with herbicides. The priority species would vary by District and could change at a later time. About 2,000 acres currently are proposed for treatments that do not include herbicides. Cultural treatments such as competitive seeding with native grass and forbs species (also mulching, fertilizing) would occur in combination with other treatments as needed to facilitate natural plant recovery.

In addition, the Proposed Action would approve treatment of new detections with methods and limitations outlined in Chapter 2. Early Detection/Rapid Response (EDRR) is proposed to increase effectiveness and decrease risks from treatment. New sites or species would be treated as part of the Forest's annual program as long as the type of effective treatment needed for the new site is covered in the methods shown in Chapter 2. The Project Design Features provide layers of caution relative to herbicide use, including annual acreage caps, which would be applied to new and known sites to ensure adverse effects are minimized.

Treatment priority is based on the historic investments made to control the species, its invasive nature, its location and whether it is a new species on the Forest. New species of invasive plant or a new invasive plant infestation may demand an immediate response using Early Detection, Rapid Response strategy. Proposed methods and strategies detailing how invasive plant infestations would be treated are in Chapter 2.

1.5 Management Direction

This EIS process and documentation has been completed according to direction contained in the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), and the Council on Environmental Quality regulations, Clean Water Act, and the Endangered Species Act. The project is consistent with all applicable Federal, State and local laws. This EIS tiers to the Wallowa-Whitman National Forest Land and Resource Management Plan Final Environmental Impact Statement and Record of Decision (USDA Forest Service 1990) and incorporates by reference the accompanying Land and Resource Management Plan (LRMP, also called the Forest Plan) (USDA Forest Service 1990), as amended by the Pacific Fish Strategy (PACFISH) (USDA and USDI 1995) and Inland Native Fish Strategy (INFISH) (USDA Forest Service 1995) where appropriate, and the R6 2005 FEIS and ROD.

Pacific Fish Strategy (PACFISH) and Inland Native Fish Strategy (INFISH) amended the Wallowa-Whitman National Forest Plan in 1995 (USDA 1995). These documents established stream, wetland and landslide-prone area protection zones called Riparian Habitat Conservation Areas (RHCAs), setting standards and guidelines for managing activities that potentially affect conditions within the RHCAs. They also established Riparian Management Objectives (RMOs) that provide guidance with respect to key habitat variables. See Appendix B for a listing of the specific INFISH aquatic conservation strategies adopted into the Wallowa-Whitman Forest Plan.

The Federal Noxious Weed Act of 1974, as amended (7 U.S.C 2801 et seq.) requires cooperation with State, local, and other Federal agencies in the application and enforcement of all laws and regulations relating to management and control of noxious weeds (a summary of this Act can be viewed at: <http://ipl.unm.edu/cwl/fedbook/fedweed.html>). This Act directs the Secretary of Agriculture to develop and coordinate a management program for control of undesirable plants which are noxious, harmful, injurious, poisonous, or toxic on Federal lands under the agency's jurisdiction, to establish and adequately fund the program, to complete and implement cooperative agreements and/or memorandums, and to establish Integrated Weed Management to control or contain species identified and targeted under cooperative agreements and/or memorandums.

U.S. Forest Service Manual 2080 directs the Forest Service to use an integrated weed management approach to control and contain the spread of noxious weeds on National Forest System (NFS) lands and from NFS lands to adjacent lands (USDA Forest Service 1995b). Integrated weed management is an interdisciplinary pest management approach by which one selects and applies a combination of management techniques that, together, control a particular invasive plant species or infestation efficiently and effectively, with minimum adverse impacts to non-target organisms. Integrated weed management is typically species- and site-specific, and includes education, preventive measures, early detection of infestations through inventory and mapping, and combinations of treatment methods as needed to effectively control the target species. Forest Service Handbook (FSH) 2109.14 Pesticide Use and Coordination provides additional direction related to implementation of invasive plant management, and FSM 2150 Pesticide Use and Coordination provide policy direction.

Executive Order 13112 directs federal agencies to reduce the spread of invasive plants. Invasive species have been identified by the current Chief of the Forest Service as one of the four threats to ecosystem health.

The Forest Service Guide to Noxious Weed Prevention Practices (USDA Forest Service 2001b) provides management guidance in the form of goals along with prevention practices. Forest

Service policy identifies prevention of the introduction and establishment of noxious weed infestations as an agency objective. This Guide provides a comprehensive directory of weed prevention practices for use in Forest Service planning and wildland resource management activities and operations.

In October 2004, the Chief of the Forest Service released *National Strategy and Implementation Plan for Invasive Plant Species Management* (USDA Forest Service 2004c). It focuses on four key elements: preventing invasive species before they arrive; finding new infestations before they spread and become established; containing and reducing existing infestations; and rehabilitating and restoring native habitats and ecosystems.

1.5.1 Regional Direction

Up until recently, Forests in Region Six followed management direction introduced to all Land and Resource Management Plans in Region Six by the *Record of Decision for Managing Competing and Unwanted Vegetation* (USDA Forest Service 1988), and the subsequent *Mediated Agreement* (USDA Forest Service 1989). The 1988 ROD specified and limited the tools available for the treatment of competing and unwanted vegetation, but did not provide administrative mechanisms for adapting new technologies. Herbicides approved for use by the Forest Service at that time were developed before 1980.

The *Pacific Northwest Region Invasive Plant Program – Preventing and Managing Invasive Plants Record of Decision* (USDA 2005b) supersedes direction from those documents to provide invasive plant management direction to Forests in Region Six.

This EIS tiers to the R6 2005 FEIS for invasive plant treatments on the Wallowa-Whitman National Forest. The R6 2005 ROD added goals, objectives and standards for invasive plant management to the Wallowa-Whitman National Forest LRMP (See Forest Direction section) and replaces the requirements of the Mediated Agreement (1989) dealing with the treatment of invasive plants. All other vegetation management activities on the Forest will still be bound by the Mediated Agreement.

1.5.2 Forest Direction

Current management direction for the treatment of invasive plants on the Wallowa-Whitman National Forest is derived from the following sources:

- The Wallowa-Whitman National Forest Land and Resource Management Plan (USDA Forest Service 1990) as amended by the R6 2005 ROD
- The Wallowa-Whitman National Forest Environmental Assessment for the Management of Noxious Weeds and Forest Plan Amendment 4 (USDA Forest Service 1992)
- The Wallowa-Whitman Management of Noxious Weeds Environmental Assessment (USDA Forest Service 1994a).

The best available science is considered in the preparation of this EIS. However, what constitutes best available science might vary over time and across scientific disciplines as new science is brought into play. We show consideration of best available science when we insure the scientific integrity of the discussions and analyses in the project NEPA document. Specifically, this EIS and the accompanying Project Record identifies methods used, references reliable scientific sources,

discusses responsible opposing views, and discloses incomplete and unavailable information, scientific uncertainty and risk (see 40 CFR 1502.9 (b), 1502.22, 1502.24).

The Project Record references all scientific information considered: papers, reports, literature reviews, review citations, academic peer reviews, science consistency reviews, and results of ground-based observations to validate best available science. In addition, this EIS incorporates (as per 40 CFR 1502.21) the Project Record including specialist reports and other technical documentation used to support the analyses and conclusions of this EIS.

Analysis was completed for botany, hydrology, fisheries, soils, wildlife, cost effectiveness, and human health. Information from these reports has been summarized in Chapters 3. Separate biological evaluations and/or biological assessments were completed for botanical species, aquatic species, and terrestrial wildlife species for this analysis or as part of the consultation process with the National Marine Fisheries Service and the US Fish & Wildlife Service.

Specific standards from the existing Wallowa-Whitman National Forest LRMP (Forest Plan) as amended by the R6 2005 ROD that apply to invasive plants treatment can be reviewed in Appendix A. Specific goals and objectives for invasive plants treatment added to the Forest Plan by the R6 2005 ROD are listed below (not all objectives within these goals relate directly to this project, so have been omitted).

Goal 1 - Protect ecosystems from the impacts of invasive plants through an integrated approach that emphasizes prevention, early detection, and early treatment. All employees and users of the National Forest recognize that they play an important role in preventing and detecting invasive plants.

Objective 1.4 Use an integrated approach to treating areas infested with invasive plants. Utilize a combination of available tools including manual, cultural, mechanical, herbicides, and biological control.

Objective 1.5 Control new invasive plant infestations promptly, suppress or contain expansion of infestations where control is not practical, conduct follow up inspection of treated sites to prevent reestablishment.

Goal 3 - Protect the health of people who work, visit, or live in or near National Forests, while effectively treating invasive plants. Identify, avoid, or mitigate potential human health effects from invasive plants and treatments.

Objective 3.1 Avoid or minimize public exposure to herbicides, fertilizer, and smoke

Objective 3.2 Reduce reliance on herbicide use over time in Region 6

Goal 4 – Implement invasive plant treatment strategies that protect sensitive ecosystem components, and maintain biological diversity and function within ecosystems. Reduce loss or degradation of native habitat from invasive plants while minimizing adverse effects from treatment projects.

Objective 4.1 Maintain water quality while implementing invasive plant treatments

Objective 4.2 Protect non-target plants and animals from negative effects of both invasive plants and applied herbicides. Where herbicide treatment of invasive plants is necessary within the riparian zone, select treatment methods and chemicals so that herbicide application is

consistent with riparian management direction contained in PACFISH, INFISH, and the Aquatic Conservation Strategies of the Northwest Forest Plan

Objective 4.3 Protect threatened, endangered, and sensitive species habitat threatened by invasive plants. Design treatment projects to protect threatened, endangered, and sensitive species and maintain species viability.

1.6 Decision Framework

The Responsible Official is the Wallowa-Whitman National Forest Supervisor, who will make the following decisions based on the interdisciplinary analysis:

- Whether to select the proposed invasive plant treatments with any modifications from public scoping or comments or as described in an alternative
- Which project design features are needed
- What monitoring is required

The Forest Supervisor will base the decision on how well the alternative meets the purpose and need for action, as indicated by:

- Whether the alternative includes treatment of newly discovered infestations
- Percentage of known treatment landbase where all effective treatments are available
- Treatment cost and efficiency
- The degree to which the alternative minimizes potential adverse impacts to human health and the environment, based on issue indicators shown below.
- Whether the alternative will reduce herbicide use over time

1.7 Tribal Involvement

1.7.1 Introduction

The proposed invasive plant treatment occurs within areas ceded to the United States government from the following recognized Tribes: the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) by the TREATY WITH THE WALLA WALLA, CAYUSE, ETC., 1855; The Nez Perce Tribe by the TREATY WITH THE NEZ PERCE, 1855; and the Confederated Tribes of the Warm Springs Reservation in the TREATY WITH THE TRIBES OF MIDDLE OREGON, 1855. The Forest Service, through the Secretary of Agriculture, is vested with statutory authority and responsibility for managing the resources of the National Forests. No sharing of administrative or management decision-making power is held with any other entity. However, commensurate with authority and responsibility to manage is the obligation to consult, coordinate and cooperate with recognized Indian tribes in developing and planning management decisions for resources of National Forest System (NFS) lands that may affect tribal rights established by treaty or Executive Order. As a result of the treaties and Executive Orders, elements of Indian culture, such as tribal welfare, land, and resources were entrusted to the United States Government.

The Forest Services shares in the government's overall trust responsibility where treaty, laws, Executive Orders, case law or other legally defined rights apply to National Forest System (NFS) lands. Trust responsibilities resulting from treaties or Executive Orders dictate, in part that the

United States Government facilitates the execution of treaty rights and traditional cultural practices of recognized tribes. The Forest Service assists with this shared responsibility by working with the tribes on a government to government basis and in a manner that attempts a reasonable accommodation of their needs, without compromising the legal position of the Tribe or the Federal government.

Tribes have expressed rights reserved in the treaties. The treaties state, “That the exclusive right of taking fish in the streams running through and bordering said reservation is hereby secured to said Indians; and at all other usual and accustomed stations, in common with citizens of the United States, and erecting suitable houses for curing the same; also the privilege hunting, gathering roots and berries, and pasturing their stock on unclaimed lands, in common with citizens, is secured to them.” (TREATY WITH THE TRIBES OF MIDDLE OREGON and TREATY WITH THE WALLA WALLA, CAYUSE, ETC. The TREATY WITH THE NEZ PERCE has similar language.) It is the responsibility of the Forest Service to take into account the cultural resources when managing the Forest’s natural resources and to address Tribal interests when managing and restoring habitat to support healthy, sustainable, and harvestable populations of culturally significant vegetative floral and faunal species.

Utilization on NFS lands for all Federally recognized Tribes is protected by American Indian Religion Freedom Act, Executive Order 13007 - sacred sites, Executive Orders 13084 and 13175 – consultation and coordination with Indian Tribal Governments, and Executive Order 12898 – Environmental Justice and the National Historic Preservation Act which includes protection for properties of traditional religious and cultural importance.

1.7.2 Tribal Concerns

Letters were sent to Tribal leaders of the Nez Perce, Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and Confederate Tribes of the Warm Springs Reservation in April of 2006. None of the tribes responded to the letter. The Forest had meetings with various tribal resource staff. During these meetings the tribes were supportive of the Forest’s efforts to treat invasive plants and being able to use all the tools/methods described in the Proposed Action. The experience of the CTUIR using aerial treatments for yellow star thistle is described as successful when integrated with other land owners. The Nez Perce felt that biological treatments should be an integrated approach used on the landscape. All tribes have a concern about coordinating treatments with traditional gathering activities and areas. A process will be developed to notify each tribe when herbicides are being used as required by the Project Design Features in Chapter 2.

Concerns voiced by the tribes include:

- The Forest Service has Federal Trust Responsibility to take into account the Tribes’ treaty rights when decisions are made such that cultural practices can be exercised and treaty related resources are protected. Actions should not hinder the ability of the tribes to access traditional use areas. There is a concern that traditional use areas would not be able to continue or use of herbicides would contaminate traditional gathering areas. Conflicts with the timing of herbicide use and gathering activities would be avoided by having a method for the Forest to contact the tribes prior to using herbicides each year. The proposed invasive plant treatments do not close roads or change existing access to National Forest System lands.

- Use of herbicides in riparian areas and its potential impact to water quality may interfere with recovery efforts for anadromous fish, a traditional economic resource. Protection of pristine riparian and upland habitat is important to the recovery of fish populations. There is support for the Northwest Power Planning Council's approach to subbasin planning that focuses on connecting areas of high quality habitat and working toward population goals through both natural and hatchery populations. This concern has been incorporated into Project Design Features (PDFs) in Chapter 2 and effects disclosed in Chapter 3.
- The CTUIR expresses its concern for managing resources through the cultural aspects of First Foods and their importance on the land that sustains their culture. First Foods – water, salmon, deer, cous and huckleberry – represent groupings of similar species that are served in their Longhouse and represents a healthy environment that is important to their cultural traditions.
- The Nez Perce has focused management actions in the uplands to provide for quality habitat for game and cultural plant species. Biological control methods are important to them and they have developed insect control methods.

Tribal concerns have been addressed in all alternatives through the use of PDFs (see Chapter 2) that minimize the potential for herbicide exposure. PDFs require the Forest Service to notify the Tribes of areas proposed for treatment each year. The Public Notification Plan requires areas proposed for treatment to be mapped, information shared and posted and warning signs posted at the locations treated with herbicides. Water quality and fisheries habitat is also protected through the use of PDFs that restrict herbicide use in riparian and near stream areas. The proposed invasive plant treatments do not close roads or change existing access to National Forest System lands. Herbicide treatments may cause plants to not be available for a season, depending on when the treatment occurs.

Because of the PDFs, all alternative are responsive to Tribal cultural needs. The differences between alternatives are the amount and methods of broadcast herbicide treatments.

1.8 Public Involvement

1.8.1 Scoping

Ongoing public involvement occurred throughout this NEPA process. Scoping began officially on April 13, 2006 when the Notice of Intent (NOI) to prepare an Environmental Impact Statement was published in the Federal Register Volume 71, No. 71/April 13, 2006 on pages 19162-19163. The scoping proposal was also posted on the Forest website at the following address: <http://www.fs.fed.us/r6/w-w/projects/invasive-plants/index.shtml>. A scoping letter, dated April 17, 2006, was mailed to 426 individuals and organizations. The letter was signed by Forest Supervisor, Steve Ellis.

1.9 Issues

Public Issues Identified

Twelve comment letters were received during scoping. All comments were considered, and public issues were identified based on these scoping comments. Many important public issues are addressed through the design of the Proposed Action. An example is human health, an issue of great public concern. All alternatives avoid the type of herbicide use associated with harmful

exposures to workers and/or the public. The issue of human health is discussed throughout this document because it is of such great importance to the public, but is not the basis for alternative comparison because all alternatives equally address this issue.

Some significant issues are not fully addressed by the Proposed Action and thus became the basis of two alternatives to the Proposed Action that are discussed in Chapter 2 of this EIS (as well as six alternatives considered but not developed in detail). The resulting range of alternatives, including the No-Action Alternative, provides a broad basis for alternative comparison.

Significant Issues

The following section summarizes the significant issues within the following broad resource categories:

- Human health
- Treatment effectiveness
- Social and economic
- Non-target terrestrial plant and animal species
- Soils, water quality and aquatic organisms

1.9.1 Human Health

Many people have expressed concern that exposure to herbicides may have serious human health consequences. People wonder if they could be sickened by brushing up against contaminated vegetation or eating berries, mushrooms, fish or game that may have been exposed to herbicides. They worry that they might drink water contaminated by herbicides. People are concerned about the health and safety of forest workers who are more likely to be exposed to herbicides. Some believe that the potential cost to human health is too high and other methods should be used to treat invasive plants.

Response: All of the alternatives include layers of caution to prevent exposure to workers and the public. Based on scientific risk assessments for each herbicide (www.fs.fed.us/foresthealth/pesticides/risk_assessments), the R6 2005 FEIS found that applicator exposure to some herbicides could cause nausea, headache, dizziness, eye or skin irritation, and/or coughing. Exposure by the general public is far less likely.

The application method and rate influences the amount of potential herbicide exposure (dose), which influences the likelihood that people could become sick. This project reduces the potential for exposure through project design features that limit the rate and method of application. In addition, workers would be required to adopt safety practices including signing and other public notification that would occur to reduce potential for inadvertent exposure to the public. An herbicide transportation and safety handling plan would be in place to avoid and clean up spills. Thus, drinking water would not be contaminated by any harmful chemicals and people are not likely to be exposed to any herbicide at levels considered to have negative human health consequences.

Refer to section 3.7 for more information about the effects of herbicide use on workers and the public.

- Unit of Measurement:
 - Character of PDFs protecting human health

1.9.2 Treatment Effectiveness:

Some commenters noted that limitations on the availability of treatment methods and herbicide options reduce the potential for invasive plants to be effectively treated. Fully integrated strategies are needed to effectively treat invasive weeds while minimizing effects to humans and the environment. Not using herbicides will result in the continued spread of invasive plants, resulting in the loss of ecosystem function and wildlife habitat loss.

Response: All alternatives involve some herbicide use and include some limitations to minimize adverse effects to people and the environment. This is necessary to meet applicable laws, policies, standards and plans.

Alternative B has the fewest limits on the use of treatment methods by allowing aerial application of herbicides and allowing broadcast applications where needed in riparian areas. Alternatives C and D limit the amount of acres that may be treated with herbicides as well as methods available to apply herbicide. These limitations are likely to reduce treatment cost- effectiveness.

The alternatives differ in their potential effectiveness and are thus compared by:

- Unit of Measurement:
 - Number of herbicide options
 - Percentage of known treatment landbase where full range of effective treatments are available
 - Character of limitation on integrated treatment options
 - Number of botanical species of local interest sites where threats would be abated

Refer to section 3.1.6 and the Botany section in Chapter 3 for more information about treatment effectiveness.

1.9.3 Social and Economic

Cost of each treatment acre influences the number of acres that can be treated with the same total budget. There are also concerns that the surrounding community should be informed of activities and economic costs of the project.

Response: The costs of each alternative have been estimated for a 15-year time frame. The alternatives differ in the average and total costs. All action alternatives incorporate Treatment Restoration Standard 23 from the Wallowa-Whitman Forest Plan as amended by the R6 2005 ROD, which requires timely public notification of treatment activities.

- Unit of Measurement:
 - Undiscounted Cost to Treat All Acres Proposed for Treatment One Time
 - Average Cost per Acre (known infestations)

Refer to section 3.9 for more information about economics.

1.9.4 Non-target Botanical Species and Wildlife

There is a concern that herbicide exposure, particularly when applied through aerial or broadcast spraying, may harm terrestrial wildlife species and non target plants. Specifically,

herbicide drift, primarily from broadcast and aerial applications of herbicides could cause harm to non-target plants and animals.

Response: This issue is specifically addressed through adherence to the W-W Forest Plan as amended by the invasive plant treatment standard 19 in the R6 2005 ROD.

Project Design Features listed in chapter 2 of this EIS would be implemented to protect the botanical and wildlife species. The analysis in Chapter 3.2 focuses on site-specific threats to botanical species of local interest from invasive plants, and relative risks from treatments in the alternatives and how those risks are abated through PDFs. The analysis in Chapter 3.3 focuses on how invasive plant treatments may affect the many wildlife species of concern on the Forest. The PDFs would minimize the potential for herbicide exposure to non-target plants and wildlife; though, aerial and broadcast spraying involves inherent risks to non-target vegetation and wildlife that cannot be entirely discounted. However, since most ground based herbicide treatments will be applied using backpack sprayers, drift can be minimized. Alternatives C and D limit broadcast application of herbicides further reducing the potential for harm to non-target botanical species and wildlife.

- Unit of Measure:
 - Character of PDFs that apply to wildlife and plants
 - Acres of broadcast application
 - Acres of aerial treatment

Refer to sections 3.2 and 3.3 for more information about effects on non-target botanical species and wildlife.

1.9.5 Soil, Water Quality, Aquatic Biota

There is a concern that there may be potential adverse effects of herbicide treatment on soils and the potential for leaching into ground water.

Response: Project Design Features have been developed in all alternatives to reduce potential effects from specific herbicides that can combine with soil or leach into ground water. The analysis addresses the potential risks of the various herbicides and the measures in place to minimize adverse effects. The action alternatives do not vary significantly regarding effects to soils and potential for herbicides to leach.

There is a concern that there may be potential adverse effects of herbicide treatment on riparian areas adversely impacting water quality and aquatic ecosystems. Specifically some believe that application of herbicide in riparian areas could contaminate water and cause mortality to fish, organisms that support fish and other aquatic species. Fish and other aquatic organisms may also be impacted by manual and mechanical treatments, which may change dissolved oxygen levels, nutrients, water temperature, turbidity, fine sediment and riparian structure.

Response: Chapter 2 describes the Project Design Features and buffers designed to avoid herbicide delivery to water and eliminate risk of concentrations and of concerns for water quality and fish, domestic water sources and other aquatic organisms. Alternatives C and D, described in Chapter 2, give additional protection for concerns about water, fish, and aquatic ecosystem exposure to chemicals. Chapter 3 explains why the potential for adverse effects is relatively low in all alternatives. Listed fish are protected under the standards developed by PACFISH/INFISH.

This project would be consistent with PACFISH/INFISH standards and guidelines, and not retard or prevent attainment of riparian management objectives.

However, the R6 2005 ROD acknowledges that aerial application and ground broadcast in riparian areas pose potentially higher risks of delivery to surface waters. This is because there is more potential for drift during application, applications cover more ground each day, and often more herbicide is applied to each acre with broadcast treatments than more selective treatments. This is also due to the inherent loss of operator control associated with broadcast and aerial treatments compared to spot and selective treatments. This is not to imply that all aerial or broadcast treatments involve great risk of impact to surface waters; the degree of risk is greater, but the intent of all treatments, including aerial and broadcast, is to minimize drift and herbicide contact with surface water.

- Unit of Measure:
 - Acres of broadcast herbicide application within riparian areas
 - Acres of aerial treatment

1.9.6 Non-Significant Issues

The Council of Environmental Quality requires the USDA Forest Service to identify and eliminate from detailed study the issues that are not significant (40 CFR 1501.7). Issues may be eliminated from further analysis when the issue is:

- Outside the scope of the EIS
- Already decided by law, regulation, Forest Plan, or other higher level decision
- Not clearly relevant to the decision to be made
- Conjectural and not supported by good scientific or factual evidence

The following issues fit in one or more of the non-significant categories. Issues are identified and an explanation of why they are not significant is given.

Some comments suggested adding aspects of the project covered by other programs. Such suggestions are outside the scope of this project. An example is:

- Roads are a major weed vector. The analysis must consider closing or revegetating unneeded roads. No new road should be constructed if you are serious about controlling weeds. Decisions to build, open, or close roads are made in the transportation management program and individual projects that require access.
- There is a concern that lack of coordination with other land owners/managers will not lead to effective control of invasive weeds. Coordination with land owners/managers is not an issue that can be resolved in a site-specific invasive plant treatment project. This issue is addressed in the R6 2005 FEIS through programmatic objectives that are assumed to occur regardless of decision made under the scope of this project.

Some comments made speculative or unsupported claims. Because such comments are not supported in peer-reviewed literature, they are considered non-significant issues. Examples include:

- Herbicide spraying causes all kinds of cancer

- Herbicide spraying destroys essential ecosystem functions

Some comments made requests that were outside the scope of the proposed project. While some such requests might be a good idea, they go well beyond the level of analysis NEPA requires.

Examples include:

- Stop all logging. Stop all grazing, which is harmful and brings in invasive weeds, as does logging.
- Have an independent contractor study the effectiveness of past Forest Service chemical and non-chemical control methods in each district, including adequacy of timing and repetition of control methods and publicly disclose the results.
- Do a feasibility study of the effectiveness needs for further research and logistical parameters for non-chemical alternative control methods for each invasive plant at issue, and make this available to all district offices.

Some comments raised issues about complying with laws. These were mostly reminders to complete tasks that are already part of the process of completing an EIS. Examples include:

- Impacts on non-target plants, soils, water quality, human health, wildlife and fish must be properly analyzed and disclosed. Cumulative effects must be disclosed.
- The National Forest Management Act requires the Forest Service to “provide for diversity of plant and animal communities.” 16 U.S.C. § 1604(g)(3)(B)
- Note that pursuant to Section 7 of the ESA, the Forest Service has an independent duty to conserve and protect the threatened and endangered species that depend on the public lands it is charged with managing and ensure it does not jeopardize species or adversely modify critical habitat.
- This project must comply with the Clean Water Act, which may require a NPDES permit for the herbicide application.

Some commenters expressed the opinion that herbicides should be used only as a last resort when other methods fail. This approach was analyzed in the R6 2005 FEIS. The R6 2005 ROD stated that such an approach deviated from IWM principles. Rather, the R6 2005 ROD required that we: “select methods for ...containing and controlling noxious weeds in coordination with other resource management activities to achieve optimum management goals and objectives (page 6).”

The current program (Alternative A) addresses this concern to a degree by only allowing herbicide use on sites identified by the 1992 and 1994 weed program EAs. The effectiveness of this program will be analyzed and compared to the three action alternatives.

1.10 What This Proposal Does Not Include

This project includes treatment of terrestrial and riparian invasive plants on the Wallowa-Whitman National Forest. Treatments on other lands are not included. This action does not include experimental trials of herbicides conducted by the U.S. Environmental Protection Agency (EPA) to test new products. Treatment of floating and/or submerged aquatic invasive plants is not included.

The proposal assumes that invasive plant prevention measures will be applied to all land uses as required by the R6 2005 ROD (see Appendix 1 for prevention standards). Invasive plant prevention activities are incorporated into individual projects carried out under regulation and guidance of those individual land use programs. Invasive plant treatments may also occur in the context of other projects or programs such as transportation planning, timber management,

livestock grazing, etc. Weed prevention and treatment activities are incorporated into individual projects carried out under regulation and guidance of those programs.

This proposal does not include treatments or restoration actions that would result in significant ground disturbance. No tilling or mechanical scarification is included.