October 2005

Pacific Northwest Region
Invasive Plant Program
Preventing and Managing Invasive Plants
Record of Decision

USDA Forest Service
Pacific Northwest Region

States of Oregon and Washington, Including Portions of Del Norte and Siskiyou Counties in California, and Portions of Nez Perce, Salmon, Idaho, and Adams Counties in Idaho

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Summary: This Record of Decision documents the Regional Forester's selection of Proposed Action from the Invasive Plant Program FEIS, with some modifications. This decision adds invasive plant management direction to all National Forest Land and Resource Management Plans in the Pacific Northwest Region (Region Six). The management direction includes invasive plant prevention and treatment/restoration standards intended to help achieve stated desired future conditions, goals and objectives. The management direction is expected to result in decreased rates of spread of invasive plants, while protecting human health and the environment from the adverse effects of invasive plant treatment.

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Background

An estimated 420,000 acres of National Forest System lands in the Pacific Northwest Region (Region Six) are currently infested with invasive plants[1]. These plants are damaging biological diversity and ecosystem integrity within and outside the National Forests. Invasive plants lead to many adverse environmental effects, including: displacement of native plants; reduction in habitat and forage for wildlife and livestock; loss of threatened, endangered, and sensitive species; increased soil erosion and reduced water quality; reduced soil productivity; and changes in the intensity and frequency of fires. Invasive plants can spread between National Forest System lands to neighboring areas, affecting all land ownerships.

Current management direction for invasive plants comes from the 1988 Record of Decision for Managing Competing and Unwanted Vegetation (1988 ROD) and 1989 Mediated Agreement. These documents were integrated into Land and Resource Management Plans (Forest Plans) in Region Six and they remain the overriding management direction for use of herbicides. 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 their requirements and adopting new technologies. For example, herbicides approved for use by the Forest Service in the 1988 ROD were developed before 1980. Since that time new herbicides have been developed and registered for use. The new herbicides have advantages for invasive plant control, such as greater selectivity, less harm to desired vegetation, reduced application rates, and lower toxicity to animals and people. Collectively, the Forest Plans, as they are currently written, do not provide sufficient direction, nor adequate tools for effectively responding to the invasive plant threat.

1 Invasive plants are defined here as "a non-native plant whose introduction does or is likely to cause economic or environmental harm or harm to human health" (Executive Order 13122). Invasive plants are distinguished from other non-native plants by their ability to spread (invade) into native ecosystems.

Thus, I identified the need for:

(1) Forest Plan level management direction that will reduce the extent and rate of spread of invasive plants and help prevent new infestations;

(2) Release from the Forest Plan direction established by the 1988 ROD and 1989 Mediated Agreement so that new practices, technologies, and formulations of herbicides are available for use in invasive plant management;

(3) An updated list of herbicides available for use by the Forests.

The Final Environmental Impact Statement for the Invasive Plant Program - Preventing and Managing Invasive Plants (FEIS) considered three action alternatives to meet these needs: the Proposed Action, Alternative B and Alternative D. The Proposed Action met these needs while minimizing risks to non-target organisms and the public. Alternative B increased the emphasis on invasive plant prevention and non-herbicide methods of treatment. Alternative D increased the emphasis on cost-effectiveness and management flexibility.

I am selecting the Proposed Action from the FEIS, with modifications. Under this decision, invasive plant management direction will be added to all National Forest Plans in the Region (see Appendix 1 for full text to be added to Forest Plans).

The Proposed Action was identified as the Preferred Alternative in the EIS and remains the basis for my Selected Alternative. I am modifying or omitting some standards as presented in the FEIS (see explanations below), however the Selected Alternative is similar to the Proposed Action in terms of intent and expected outcomes.

Decision

Under this decision, all National Forests in the Region will be released from direction established by the1988 Record of Decision for Managing Competing and Unwanted Vegetation (ROD) and 1989 Mediated Agreement for *invasive* plant management. Parts of the 1988 ROD and 1989 Mediated Agreement that apply to unwanted *native* vegetation are not affected by this decision. Invasive plant management direction stemming from these documents will be replaced by new direction, in the form of:

- Desired Future Condition (DFC) statement,
- Goals and objectives statements,
- Standards for preventing the introduction, establishment and spread of invasive plants
- Standards for invasive plant treatment and site restoration
- An inventory and monitoring framework.

By separate letter, I am requesting that the Department of Justice take any necessary steps in *Northwest Coalition for Alternatives to Pesticides, et al v Lyng,* CV 83-6272, to confirm release from the 1989 Order and Mediated Agreement.

The purpose of the new management direction is to facilitate subsequent actions to eliminate or control invasive plants so that: (1) desired conditions on National Forest System lands can be attained; (2) federal land managers' ability to provide goods and services from the National Forest System lands is maintained; and (3) the Forest Service's ability to cooperate with similar efforts across other ownerships is improved.

Management direction related to invasive plants (beyond the 1988 ROD and 1989 Mediated Agreement) is also established by Forest Service Manuals, letters of Regional policy and individual Forest Plan standards in Region Six. The Selected Alternative adds new direction, but does not vacate existing invasive plant management direction beyond the 1988 ROD and 1989 Mediated Agreement. Inconsistencies between new and existing standards will be reconciled on a Forest-by-Forest basis, as Forest Plans are amended or revised or specific projects are planned.

This decision, in itself, does not approve any site-specific projects. Site-specific treatment decisions will be based on location, biology and size of the target invasive plant species, site conditions, and integrated resource objectives. Invasive plant treatment projects will be subject to future National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) analysis before being implemented.

The Selected Alternative will not be retained as a Regional-scale decision; rather it will become part of the individual Forest Plans. Over time, decision makers for individual National Forests may modify the decisions that result from this EIS in accordance with planning laws, policies and regulations.

Details of the Decision

I am adopting the desired future condition statement, and goals and objective statements explicitly as written in the Proposed Action in the FEIS.

I am also adopting most of the standards as presented in the FEIS Proposed Action, with the following modifications:

a) I am selecting Standard 4 from Alternative B, which will adopt weed-free feed requirements for all National Forest System lands in the region. Forests will phase in enforcement of this standard, starting with wilderness areas first.

b) I am modifying Standard 6 to read:

> Use available administrative mechanisms to incorporate invasive plant prevention practices into rangeland management. Examples of administrative mechanisms include, but are not limited to, revising permits and grazing allotment management plans, providing annual operating instructions, and adaptive management. Plan and implement practices in cooperation with the grazing permit holder.

c) I am not adopting Standard 10 (adopt OHV policy) or Standard 17 (document rationale for herbicide use).

d) I am modifying Standard 13 to read:

Native plant materials are the first choice in revegetation for restoration and rehabilitation where timely natural regeneration of the native plant community is not likely to occur. Non-native, non-invasive plant species may be used in any of the following situations: 1) when needed in emergency conditions to protect basic resource values (e.g., soil stability, water quality and to help prevent the establishment of invasive species), 2) as an interim, non-persistent measure designed to aid in the re-establishment of native plants, 3) if native plant materials are not available, or 4) in permanently altered plant communities. Under no circumstances will non-native invasive plant species be used for revegetation.

e) I am modifying Standard 19 to read:

To minimize or eliminate direct or indirect negative effects to non-target plants, terrestrial animals, water quality and aquatic biota (including amphibians) from the application of herbicide, use site-specific soil characteristics, proximity to surface water and local water table depth to determine herbicide formulation, size of buffers needed, if any, and application method and timing. Consider herbicides registered for aquatic use where herbicide is likely to be delivered to surface waters.

f) I am modifying Standard 20 to read:

Design invasive plant treatments to minimize or eliminate adverse effects to species and critical habitats proposed and/or listed under the Endangered Species Act. This may involve surveying for listed or proposed plants prior to implementing actions within unsurveyed habitat if the action has a reasonable potential to adversely affect the plant species. Use site-specific project design (e.g. application rate and method, timing, wind speed and direction, nozzle type and size, buffers, etc.) to mitigate the potential for adverse disturbance and/or contaminant exposure.

g) I am modifying Standard 23 to read:

Prior to implementation of herbicide treatment projects, National Forest system staff will ensure timely public notification. Treatment areas will be posted to inform the public and forest workers of herbicide application dates and herbicides used. If requested, individuals may be notified in advance of spray dates.

I am also making minor edits to the inventory and monitoring framework to clarify that 1) effectiveness monitoring will only be required for *a representative sample of* invasive plant treatment projects that may pose a "high risk" to federally listed species; 2) the definition of "Interagency" includes but is not limited to the U. S. Forest, U.S. Fish and Wildlife and National Marine Fisheries Services; and 3) effectiveness monitoring results will be reported on a regular schedule, to be determined as part of the monitoring protocol.

In making this decision, I considered each alternative as a whole, as well as each alternative's component parts (desired future condition statement, goals, objectives, standards, inventory and monitoring framework). I am blending some components of Alternatives B and D with the Proposed Action to increase prevention effectiveness and reduce the potential for undesirable consequences on existing land uses, human health and the environment.

Alternatives Considered

Four alternatives were considered in detail: No Action, Proposed Action, Alternative B and Alternative D. All the alternatives followed the Integrated Weed Management (IWM)[2] approach (FEIS Chapter 2.3). The "action alternatives" (Alternatives B and D) were developed to meet the underlying need for action and resolve the issues with the Proposed Action that were identified in Chapter 1.

No Action Alternative

The No Action alternative represented no change from the current direction. Existing Forest Plans would have continued to direct invasive plant management. FEIS Chapter 2.3 described the existing management direction in detail.

Projects attempting to follow these plans would continue to be subject to litigation because analysis deficiencies associated with these plans would not be resolved.

I did not choose No Action because it does not meet the need for action, and has greater potential adverse effects on human health and the environment than the Selected Alternative. No Action would be expected to cost more per acre and be less effective in preventing and treating invasive plants.

Proposed Action

The Proposed Action represented the Forest Service's original proposal for managing invasive plants. As displayed in the FEIS, the Proposed Action would have applied the weed-free feed Standard 4 to Wilderness Areas and Wilderness trailheads in the Region (rather than all National Forest System lands). It also would have included two standards (10 and 17) that I am not adopting in this decision. Otherwise, the modifications are minor, clarifying edits that do not change the intent or effect of the Proposed Action.

The reasons I decided to adopt Standard 4 from Alternative B, and not adopt Standards 10 and 17 are explained in the Rationale for the Decision section.

2 Integrated Weed Management (IWM) - An interdisciplinary weed management approach for selecting methods for preventing, containing, and controlling noxious weeds in coordination with other resource management activities to achieve optimum management goals and objectives (FSM 2080.5).

Alternative B

Alternative B responded to issues and suggestions received during scoping, including those received from a coalition of citizen's groups interested in prevention and management of invasive plants on National Forest System lands. The coalition developed an alternative for consideration in this EIS (the "Restore Native Ecosystems Alternative). Many elements of the coalition's alternative are incorporated into the action alternatives, particularly Alternative B.

Alternative B would have increased emphasis on reducing conditions related to land uses and activities on National Forest System lands that contribute to invasive plant introduction, establishment and spread. The standards included in Alternative B tended to be stricter and less flexible than in the other alternatives.

Under Alternative B, invasive plant treatment tools associated in the scientific literature with human and/or ecological harm would have been avoided where possible and herbicides would have been a "tool of last resort[3]."

Many members of the public advocated that I select Alternative B due to its precautionary approach and emphasis on non-herbicide treatment methods. I acknowledge that Alternative B would have increased emphasis on prevention and potentially reduced rates of spread more than the Selected Alternative (see FEIS Chapter 4.2). Specifically, Standards 2, 5, 6, 7, 9, and 10 in Alternative B would likely have increased prevention effectiveness as compared to Selected Alternative. I did not choose to adopt all of these prevention standards from Alternative B because of their potential to result in unintended adverse consequences to land management activities and land uses (see FEIS Chapter 4.6).

I also did not select Alternative B because it deviates from IWM principles to "select methods for preventing, containing, and controlling noxious weeds in coordination with other resource management activities to achieve optimum management goals and objectives (FSM 2080.5)."

Invasive plant treatments would have cost more per acre under Alternative B than any other alternative considered in detail. Among the alternatives considered in detail, land management activities were most likely to be affected by restrictions based on invasive plant management concerns under Alternative B. I do not believe that Alternative B represents the appropriate approach to invasive plant management because its cost is too high, especially given its lack of treatment effectiveness.

3 "Tool of last resort" means that tool will be used only if all other methods for managing invasive plants are ineffective or too expensive.

Alternative D

Alternative D was similar to the Proposed Action with greater emphasis on maintaining planning and operational flexibility at the Forest/Ranger District level. Greater flexibility was intended to reduce the treatment costs and impacts on land uses and user groups.

Alternative D also included the use of two effective, less expensive and potentially more risky herbicides (2,4-D and dicamba). In addition, as Alternative D placed greater emphasis on reducing treatment costs, the use of broadcast and aerial application of herbicides was expected to be greatest under Alternative D.

Many members of the public advocated I select Alternative D because it would have been the most cost-effective alternative. However, Forest Service risk assessments consistently place 2,4-D and dicamba in higher risk categories for human beings, large mammal and birds (see FEIS Chapter 4.4 and 4.5).

At the regional scale, I am not aware of any situations that cannot be otherwise effectively treated. Site-specific Forest Plan amendments could be contemplated to allow use of these herbicides if local land managers find them necessary. Such amendments would be project-specific and analyzed in future NEPA decisions.

Table 1 displays key features of the alternatives.

Table 1 Key Features of the Alternatives

Key Feature	No Action	Proposed Action	Alternative B	Alternative D
Overall Approach	Adaptive management focusing on prevention, early detection, and early treatment of invasive plants.	Adaptive management, with increased emphasis on prevention, updated treatment tools, restoration and long-term site management goals.	Similar to the Proposed Action, increases the emphasis on reducing the conditions that contribute to invasive plants.	Similar to the Proposed Action, with a less "prescriptive" approach to prevention and more flexibility in the use of herbicides.
Inventory	Emphasizes early detection.	Emphasizes early detection and requires inventories be consistent with nationally accepted data structures.	Same as the Proposed Action.	Same as the Proposed Action.
Prevention	Direction for prevention is provided primarily by the 1988 EIS/ROD and the 1989 Mediated Agreement	Requires the use of a suite of invasive plant prevention standards.	Similar to the Proposed Action with additional, more prescriptive prevention standards.	Similar to the Proposed Action, with fewer and less prescriptive prevention standards.

Table 1 Key Features of the Alternatives

Key Feature	No Action	Proposed Action	Alternative B	Alternative D
Treatment	Treatment methods, including five herbicides. 2,4-D is a tool of "last resort".	Treatment methods include ten herbicides, but not 2,4-D or dicamba.	Emphasis is on non-chemical methods. Includes four herbicides and they are considered "tools of last resort".	Treatment methods include twelve herbicides, including 2,4-D.
Restoration	Favors the use of native plants and allows the use of non-native plants in certain situations.	Favors the use of native plants for restoration, allows use of non-invasive non-native plants in certain situations.	Requires use of native species for restoration, except as an intermediate step toward native restoration.	Requires the use of plant species that do not invade or persist.

Rationale for the Decision

The Selected Alternative as a Whole

I have decided to select the Proposed Action with modifications (hereby referred to as the Selected Alternative) because it provides appropriate and effective Forest-level management direction regarding prevention practices while maintaining management flexibility; it provides updated treatment options; and it emphasizes restoration and long-term site management goals. Selected Alternative is expected to reduce the extent and rate of spread of invasive plants and help prevent new infestations. It requires that inventories be consistent with nationally accepted data structures to provide for early detection, therefore increasing our ability to allow for more timely response when populations are small. It restricts herbicide use to formulations containing one or more of ten active ingredients - chlorsulfuron, clopyralid, glyphosate, imazapic, imazapyr, metsulfuron methyl, picloram, sethoxydim, sulfometuron methyl, and triclopyr. These herbicide formulations, used in accordance with the standards, pose relatively low risks to people and non-target organisms.

The FEIS stated the factors for my decision:

1. How well the alternative meets the underlying need for action,
2. The potential effects to human health and the environment,
3. The effects on existing uses/management activities on the National Forest System lands, and
4. The associated costs.

Based on the FEIS analysis, I find that the standards associated with the Selected Alternative a) adequately address the need for management direction that will prevent the introduction, establishment and spread of invasive plants; b) include an appropriate list of herbicides for use on National Forest System lands in Region Six; and c) release land managers from complying with the 1988 ROD and 1989 Mediated Agreement when dealing with invasive plants.

I am choosing the prevention standards in the Selected Alternative because I believe they will result in reduced rates of spread of invasive plants, while still maintaining the Forest Service's ability to provide for existing uses and management activities on National Forest System lands.

I am choosing the specific list of herbicides in the Selected Alternative because these pose relatively low risk to people and the environment. I am adopting treatment standards that will further protect human health and non-target organisms.

Another of my decision factors is the monetary cost of the invasive plant treatment program. Average costs per acre of treatment was estimated in the FEIS and used to predict acreage treated at a static budget (Chapter 4.6.2). An average treatment acre would cost approximately $160 under the Selected Alternative, as compared to $120 per acre under Alternative D (lowest cost alternative). Costs were predicted to be higher under No Action ($192 per acre) and Alternative B ($240 acre). The Selected Alternative provides a balance between cost-effectiveness and risk of adverse effects.

Table S-2 from the FEIS is included as Appendix 2 in this Record of Decision. Table S-2 compares specific aspects of the alternatives in terms of the decision factors. The following sections provide rationale for my decision based on these decision factors.

Desired Future Condition, Goals and Objectives

The Selected Alternative includes the Desired Future Condition, Goals and Objectives statements as written in the Proposed Action in the FEIS. These statements emphasize prevention of invasive plant introduction, establishment and spread; protection of ecosystems and human health; and collaboration with our partners and the public. The full text to be added to Forest Plans in the Region is shown in Appendix 1.

The Desired Future Condition Statement and Goals and Objectives were similar between the Proposed Action and action alternatives. Alternative D differed from the other action alternatives by not including an objective to reduce reliance on herbicide use over time. I am not choosing Alternative D, because I believe this objective is appropriate given the strong public concern about herbicide use. I am optimistic that the new tools provided by my decision will lead to more effective treatments that will reduce the need to for repeated herbicide use and will ultimately reduce reliance on herbicides.

I did not choose the No Action Alternative because it would not have included new Desired Future Condition, Goal, or Objective Statements and thus would not have clarified the reasoning behind the standards. No Action would not have contributed to meeting the need for new management direction regarding invasive plants (decision factor 1).

Prevention Standards

Prevention Standard 1

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/ Selected Alternative	Alternative B	Alternative D
1 (Objectives 1.1, 1.2, 2.3, 2.4, 2.5)	Prevention of invasive plant introduction, establishment and spread will be addressed in watershed analysis; roads analysis; fire and fuels management plans, Burned Area Emergency Recovery Plans; emergency wildland fire situation analysis; wildland fire implementation plans; grazing allotment management plans, recreation management plans, vegetation management plans, and other land management assessments.	Same as Proposed Action, **plus:** These documents will address the conditions that spread invasive plants and emphasize maintaining/restoring healthy ecosystems as the first line of defense against their spread.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting Prevention Standard 1 from the Proposed Action because it increases prevention effectiveness compared to No Action (no standard), but avoids cost increases or land use limitations possible with Alternative B (FEIS Chapters 4.6.3).

I did not choose No Action because it would not contribute to meeting the need for action (decision factor 1). I did not choose Alternative B because the words: "emphasize healthy ecosystems as the first line of defense against their [invasive plants] spread" have the potential to make compliance with this standard difficult for land managers. There is no fully accepted definition of a healthy ecosystem. Restoration of healthy ecosystems cannot be promised at all spatial and temporal scales; for instance administrative sites, quarries and road corridors are examples of areas where restoration of a healthy ecosystem may not be possible or desired. Thus, I am not choosing Standard 1 from Alternative B because its additional requirement could lead to adverse effects on existing land uses or management activities, or increase the costs of invasive plant management (decision factors 3 and 4). These additional requirements do substantially change the intent or effectiveness of the standard in preventing invasive plants (FEIS Chapter 4.2.3).

Prevention Standard 2

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/ Selected Alternative	Alternative B	Alternative D
2 (Objectives 1.1, 1.2, 2.3)	Actions conducted or authorized by written permit by the Forest Service that will operate outside the limits of the road prism (including public works and service contracts), require the cleaning of **all heavy equipment** (bulldozers, skidders, graders, backhoes, dump trucks, etc.) prior to entering National Forest System Lands. This standard does not apply to initial attack of wildland fires, and other emergency situations where cleaning would delay response time.	Actions conducted or authorized by written permit by the Forest Service that will operate outside the limits of the road prism (including public works and service contracts), require the cleaning of **all equipment and vehicles** prior to entering National Forest System land for all projects, **and before leaving the project site**, when operating in areas where invasive plants have been identified as present at a level where transport of invasive plant seed or vegetation propagules (root fragments) is likely and a concern. This standard would not apply to initial attack of wildland fires, and other emergency situations where cleaning would delay response time.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting Prevention Standard 2 from the Proposed Action because it increases prevention effectiveness compared to No Action (no standard), but avoids but avoids potential adverse effects on land use activities associated with Alternative B. I recognize that Standard 2, as written under Alternative B, was ranked as having higher effectiveness than the Proposed Action. However, this standard may be difficult to implement or enforce (FEIS Chapters 4.2.3, 4.6.3). These difficulties could result in reduced effectiveness of this standard.

Wash stations are not currently available away from populated area and administration costs may be cost prohibitive (for instance, contract field inspection to ensure washing is done between sites). Until such stations are available, this standard in Alternative B may not be operationally feasible.

The costs of implementing this standard could lead to less heavy equipment work because costs may become prohibitive. Administrative costs for timber, other vegetation management, roads, livestock grazing, fire, fuels, recreation, and minerals and mining programs and projects in infested areas under Alternative B could increase to the point where programs and projects could not be funded.

I am not adopting this standard from Alternative B because the additional expense and implementation (decision factors 3 and 4) outweigh its potential prevention value. At the project-specific scale, managers have the option to consider stronger prevention practices such as washing equipment before leaving infested sites.

Prevention Standard 3

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/ Selected Alternative	Alternative B	Alternative D
3 (Objectives 1.1, 2.3)	Use weed-free straw and mulch for all projects, conducted or authorized by the Forest Service, on National Forest System Lands. If State certified straw and/or mulch is not available, individual Forests should require sources certified to be weed free using the North American Weed Free Forage Program standards (see Appendix O) or a similar certification process.	Same as Proposed Action.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting Prevention Standard 3 from the Proposed Action because it increases prevention effectiveness (decision factor 1) compared to No Action. This standard would serve to further minimize the potential spread of non-natives from mulching. Tons of straw/mulch potentially providing invasive seed could be eliminated (FEIS Chapter 4.2.3). This standard is not expected to be costly (FEIS Chapter 4.2.6) because weed-free straw and mulch is widely available and in use across the Region. Most ground disturbing projects already have similar requirements for weed free straw and mulch in place.

Prevention Standard 4

Alternatives Considered

Standard (Objective Addressed)	Proposed Action	Alternative B / Selected Alternative	Alternative D
4 (Objectives 1.1, 2.5)	Use only pelletized or certified weed free feed in **wilderness and wilderness trailheads**. If state certified weed free feed is not available, individual Forests should require feed certified to be weed free using North American Weed Free Forage Program standards or a similar certification process.	Use only pelletized or certified weed free feed on **all National Forest System lands.** If state certified weed free feed is not available, individual Forests should require feed certified to be weed free using North American Weed Free Forage Program standards or a similar certification process. Choose weed-free project staging areas, livestock and packhorse corrals, and trailheads.	No standard.

Rationale for Selected Standard

I am selecting Prevention Standard 4 from Alternative B because it increases prevention effectiveness compared to all other alternatives (decision factor 1). As written for Alternative B, this standard was ranked as having the highest effectiveness of all alternatives because of its comprehensive coverage of National Forest System lands (FEIS Chapter 4.2.3).

Many pack stock users already comply with weed-free feed requirements as a part of special use permits on National Forests within and outside the Region. In Oregon, Wallowa County has a working weed-free feed certification program and the Eagle Cap Ranger District and Hells Canyon National Recreation Area also prohibit use of uncertified weed free feed.

Weed-free feed certification is also currently available in the three states that share borders with Region Six, as well as 9 other western states. The Forest Service requires that only certified weed free seed be used on National Forest System lands in Idaho and Nevada. California is currently working on a certification program for National Forest System lands.

I acknowledge this standard may have some adverse effects on pack stock users by requiring weed-free feed (currently difficult to obtain) or pelletized feed (difficult for some pack animals to digest). Weed free feed requirements can increase the cost of using pack stock because weed free feed is generally more expensive to purchase and distribution locations for weed free feed are limited, potentially resulting in additional purchase, travel and transportation costs to the user. These issues are discussed in FEIS Chapters 4.6.3 and 4.6.5.

I am not selecting any other alternative because I believe it is important to eliminate spread of invasive plants into remote areas that can occur from pack stock (includes horse or mule trail riding, as well as livestock used for packing) use. Currently, invasive plants can find their way onto National Forest System lands in weed-infested feed brought along for pack animals. These seeds are often deposited near disturbed areas such as trailheads, trails, watering holes, roads, horse camps, and other disturbed areas where invasive plants are best suited to grow. Invasive plant seeds can also be spread in the manure of pack animals (FEIS Chapter 3.1.3).

I understand that many people, particularly those who recreate with pack stock, are concerned about establishing weed-free feed requirements in National Forests in the Region. I also know that many people are worried that this decision will increase the cost of using pack stock. I recognize that weed-free feed is generally more expensive to purchase and distribution locations for weed free feed are limited, potentially resulting in additional purchase, travel and transportation costs to the user. Many pack stock users are concerned about how difficult this may be to implement and enforce. Public comments also refer to the lack of current weed-free feed certification programs in Oregon and Washington. Following are excerpts of public comments regarding weed-free feed requirements:

> "A simple system needs to be instituted to get the proper certification of hay. For example have the County Agent certify a local farmer's fields. Then a certificate would go with the hay sold off these fields. Many horses cannot tolerate the pelleted feed causing colic and behavioral problems."

> "(1) Oregon State has no certification program for noxious weed free hay. Agencies, which I have contacted, have no interest in developing such programs at present. These include the county extension agencies and the Oregon Seed Certification Program. (2) Wallowa County uses Idaho's certification. Some hay is available sometimes in Wallowa County. Some alfalfa hay is trucked in from Idaho and available locally in La Grande. This is very limited availability compared to needs at the many trail heads. No certified grass hay which some of us horsemen feed instead of alfalfa is available that I know of at present. (3) Most horsemen will be very reluctant to feed the available pelleted or cubed feed rather than hay at trailheads, as equines do not change diets and forms of feed readily.
>
> Once in the wilderness area, processed feeds usually are used only to supplement the natural forages as needed. Therefore, I find the requirement of certified noxious weed free feeds unreasonable to implement until certified hay, both alfalfa and grass is commonly available at prices close to good quality noxious weed free hay currently available in the state of Oregon."
>
> "Our members are concerned as there are currently no certifying agents/programs for "weed free feed" or "weed free hay" available in the state of Oregon. We understand and practices the use of "weed free feed" when required. We want the Forest Service to note that before this recommendation should go into effect a system for certifying "weed free feed" that includes hay must be established. The development of certifying system needs to set reasonable standards to reduce the potential of "weed free feed" production becoming too costly for individuals to purchase. If this recommendation became policy before the establishment of available certifying agents it could create a hardship for not only our members, but also the many other equine organizations through out the Pacific Northwest Region."
>
> "Requiring horse owners to use weed-free feed will clearly increase the cost of using saddle and pack stock because such feed is more expensive to produce and distribution locations are limited, resulting in additional purchase and transportation costs to the riders and stock providers. This additional requirement will also increase the cost to the Forest Service for enforcement of the weed-free feed standards."

In consideration of these viewpoints, enforcement of weed-free feed requirements standard will be phased in as appropriate certification processes and weed-free feeds become reasonably available. This will allow pack stock users time to comply with the standard, and will allow time for weed-free feed certification processes to become established.

I intend to work with user groups to ensure that adverse effects on them are minimized. I will work with the counties or states in the region to develop weed free feed certification programs. I intend to enforce the pelletized or weed-free feed standard within wilderness areas and wilderness trailheads first, then expand enforcement to other National Forest System lands, as processes to certify weed-free feed become available.

This is the final NEPA decision related to this standard. Closure Orders on individual Forests will trigger enforcement of the weed-free feed requirements. Closure orders requiring pelletized or weed-free feed for all Wilderness Areas and Wilderness trailheads in the Region will be in place as of January 1, 2007, providing phase-in time for user groups. Use of pelletized and/or weed-free feed will be encouraged throughout the National Forest and enforced once closure orders have been filed. Closure orders for remaining National Forest System lands in the Region will be filed on Forest-by-Forest basis as certified weed-free feed becomes available.

Prevention Standard 5

Alternatives Considered

Standard (Objective Addressed)	Proposed Action / Selected Alternative	Alternative B	Alternative D
5 (Objective 2.2)	No corollary standard. (Addressed as Objective 2.2 and in the USDA Forest Service Guide to Noxious Weed Prevention Practices)	Consistent with project objectives, retain native vegetation in an around project locations and minimize creating soil conditions that promote the establishment and spread of invasive plants.	Same as Proposed Action

Rationale for Selected Standard

I am not selecting this standard (only associated with Alternative B) because it would have required that forest canopy be retained and soil disturbance minimized. I recognize this could have increased prevention effectiveness as compared to the Proposed Action, but potentially at the expense of other land management objectives. This standard may have limited the Forest Service's ability to manage fuels in response to changing fire condition classes and conflict with achieving the goals of the Healthy Forests Restoration Act of 2003 (FEIS Table 4-51).

I am adding Objective 2.2 to Forest Plans across the Region Six: "Retain native vegetation consistent with site capability and integrated resource management objectives to suppress invasive plants and prevent their establishment and growth." This objective is intended to result in adequate protection of native vegetation.

Prevention Standard 6

Alternatives Considered

Standard (Objective Addressed)	Selected Alternative	Proposed Action	Alternative B	Alternative D
6 (Objectives 1.1, 5.1, 5.3)	Use available administrative mechanisms to incorporate invasive plant prevention practices into rangeland management. Examples of administrative mechanisms include, but are not limited to, revising permits and grazing allotment management plans, providing annual operating instructions, and adaptive management. Plan and implement practices in cooperation with the grazing permit holder.	Through annual operating instructions, and the revision of grazing allotment management plans, incorporate invasive plant prevention practices that reduce the spread of invasive plants. Plan and implement practices in cooperation with the grazing permit holder.	Same as Proposed Action, **plus**: Document consideration of the prevention practices included in the grazing management section of the USDA Forest Service Guide to Noxious Weed Prevention Practices, (Appendix E).	Same as Proposed Action.

Rationale for Selected Standard

The Selected Alternative is similar to the Proposed Action/Alternative D, and has the same intent and impact. I am modifying the wording of this standard to improve its clarity and consistency with rangeland management direction. I am selecting this standard because incorporating invasive plant prevention practices into rangeland permit management will help reduce the risk of introduction, establishment and spread of invasive plants from grazing (as compared to No Action). I recognize that this standard may result in changes in grazing locations, timing, intensity, and outputs (FEIS Chapter 4.6.3). These adjustments would be implemented using existing rangeland administration mechanisms (FSH 2209.13).

Alternative B would have additionally required that the consideration of the USDA Forest Service Guide to Noxious Weed Prevention Practices (Appendix E) be documented. The FEIS found that Alternative B would be more likely to effectively reduce invasive plants on grazing allotments than the alternative version of this standard (FEIS Chapter 4.2.3). However, I believe that requiring documentation of managers' consideration of the USDA Forest Service Guide to Noxious Weed Prevention Practices could actually be counter-productive to preventing the introduction, establishment and spread of invasive plants (decision factor 1). The guide may change over time, or may not be appropriate under all circumstances. I do not believe the additional documentation requirement would lead to better rangeland management practices.

Prevention Standard 7

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/ Selected Alternative	Alternative B	Alternative D
7 (Objectives 1.1, 1.2, 1.3)	Inspect active gravel, fill, sand stockpiles, quarry sites, and borrow material for invasive plants before use and transport. Treat or require treatment of infested sources before any use of pit material. Use only gravel, fill, sand, and rock that is judged to be weed free by District or Forest weed specialists.	Same as Proposed Action, **plus**: Strip and stockpile and treat infested sources before any use of material. Inspect active gravel, fill, sand stockpiles, quarries, and borrow material **annually** for invasive plants.	Same as Proposed Action.

Rationale for Selected Standard

I am adopting the Proposed Action for this standard because it will ensure that rock sources are appropriately inspected and treated before use. This will increase the effectiveness of this prevention practice compared to No Action (no standard).

Alternative B would have required that rock quarries and other sources be inspected annually. This would have increased the likelihood that new infestations would be caught in early stages since a system of stockpiling contaminated fill for treatment will be in place. I acknowledge Alternative B was more likely to prevent invasive plant spread than the Proposed Action/Alternative D (FEIS Chapter 4.2.3). However, I weighed the value of this standard in prevention (decision factor 1) against the implementation costs (decision factor 5). I am choosing not to adopt the Alternative B version of this standard because I believe the Selected Alternative will adequately prevent this vector of invasive plant spread and the expense of requiring annual inspections, stripping and stockpiling could become exorbitant (FEIS Chapter 4.6.3). I do not expect to receive the funding necessary to comply with such a standard.

Prevention Standard 8

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/ Selected Alternative	Alternative B	Alternative D
8 (Objectives 1.1, 1.2, 5.1)	Conduct road blading, brushing and ditch cleaning in areas with high concentrations of invasive plants in consultation with District or Forest-level invasive plant specialists, incorporate invasive plant prevention practices as appropriate.	Same as Proposed Action, **plus**: Where possible, postpone this work until the invasive plants have been treated. In situations where road safety considerations dictate action, work from the edges of the infestation toward the center to avoid spreading invasive plants to relatively uninfested areas. Inspect and clean road graders, mowers, and other road blading, brushing and ditch cleaning equipment after operating in infested areas to remove plant seed and propagules.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting the Proposed Action because it elevates the importance of considering invasive plants in planning for road maintenance activities compared to No Action (no standard), while allowing flexibility that best suits local site conditions, ecology, and desired future conditions. All action alternatives would better prevent invasive plants than No Action (decision factor 1). Alternative B includes additional language highlighting particular practices, but does not change intent or effects of this standard as quantifiable at the Regional level (FEIS Chapter 4.2). I am not choosing Alternative B because I prefer the flexibility afforded by the Proposed Action (decision factor 4).

Prevention Standard 9

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/Selected Alternative	Alternative B	Alternative D
9 (Objectives 1.1, 2.4)	No standard.	Close or decommission non-essential roads where roads analysis indicates that the presence, type, use and location of roads may increase the introduction and spread of invasive plants; and such introduction adversely affect native plant and animal species and ecosystem function. Retain administrative access as needed for invasive plant treatment and site restoration.	No standard.

Rationale for Selected Standard

I am not adopting this standard in the Selected Alternative. I recognize that the Selected Alternative may be less effective in preventing the spread of invasive plants because it lacks this standard (FEIS Chapter 4.6.3). I decided against adopting Standard 9 because its potential adverse effects on access and road management (decision factor 4) outweighed the potential benefit in reducing the spread of invasive plants (decision factor 2). I am concerned that the requirements in Standard 9 could elevate invasive plant management beyond other considerations. Consideration of this vector of invasive plant spread in roads analysis is required per Standard 1. I believe Standard 1 provides sufficient emphasis on invasive plant management in roads management, along with existing management direction regarding road closure and decommissioning.

Prevention Standard 10

Alternatives Considered

Standard (Objective Addressed)	Proposed Action	Alternative B	Alternative D/ Selected Alternative
10 (Objectives 1.1, 2.4, 2.5)	Require the establishment of a system of roads, trails, and areas designated for motor vehicle use; and prohibit the use of motor vehicles off the designated system that is not consistent with the classes of motor vehicles and if applicable, the time of year, designated for use.	Same as Proposed Action.	No standard.

Rationale for Selected Standard

I am not adopting the standard as written for the Proposed Action/Alternative B because it has not yet been adopted at the national scale. I am concerned that implementing this standard at the Regional scale may result in future conflicts between regional and national management direction, timing and/or interpretation. The FEIS described how the national policy would contribute to preventing the introduction, establishment and spread of invasive plants (FEIS Chapter 4.2.3). While I recognize that this would increase the effectiveness of the invasive plant management program (decision factor 1), this benefit is outweighed by the potential for adverse effects on land management activities from differences in the draft and final policy or other possible conflicts.

Treatment/Restoration Standards

Treatment Restoration Standard 11

Alternatives Considered

Standard (Objective Addressed)	Proposed Action	Alternative B	Alternative D
11 (Objectives 1.5, 5.1)	Prioritize infestations of invasive plants for treatment at the landscape, watershed or larger multiple forest/multiple owner scale.	Same as Proposed Action.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting Standard 11 from all action alternatives because it ensures that the most important and urgent needs are met first, and that preferred treatments methods are appropriately prioritized. Deciding what and where treatments should occur first, given limited budgets, is a crucial first step in the integrated weed management program (decision factor 1). Current management direction (No Action) does not require that priorities be addressed. Without prioritization, treatments may be less effective in meeting land management goals and/or supporting cooperative programs (FEIS Chapter 4.2.3).

Treatment Restoration Standard 12

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/Selected Alternative	Alternative B	Alternative D
12 (Objectives 1.1, 5.1)	Develop a long-term site strategy for restoring/revegetating invasive plant sites prior to treatment.	Same as Proposed Action.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting Standard 12 (same in all action alternatives) because this ensures that planning for revegetation or restoration needs is completed early in the process better than No Action (no standard). Long-term planning allows for timely development of adequate quantities of non-invasive plant materials for site restoration. Having the materials on hand immediately after treatment could make the difference in effectively deterring re-infestation (FEIS Chapter 4.2.3). This will also help reduce the need for repeated herbicide or other treatments (decision factors 1 and 2).

Treatment Restoration Standard 13

Alternatives Considered

Standard (Objective Addressed)	Selected Alternative	Proposed Action	Alternative B	Alternative D
13 (Objectives 1.1, 1.4)	Native plant materials are the first choice in revegetation for restoration and rehabilitation where timely natural regeneration of the native plant community is not likely to occur. Non-native, non-invasive plant species may be used ***in any of the following situations:*** 1) when needed in emergency conditions to protect basic resource values (e.g., soil stability, water quality and to help prevent the establishment of invasive species), 2) as an interim, non-persistent measure designed to aid in the re-establishment of native plants, 3) if native plant materials are not available, ***or*** 4) in permanently altered plant communities. Under no circumstances will non-native invasive plant species be used for revegetation.	Native plant materials are the first choice in revegetation for restoration and rehabilitation where timely natural regeneration of the native plant community is not likely to occur. Non-native, non-invasive plant 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), 2) as an interim, non-persistent measure designed to aid in the re-establishment of native plants, 3) native plant materials are not available, and 4) in permanently altered plant communities. Under no circumstances will non-native invasive plant species be used.	Use local native seed and seedlings in revegetation of invasive plant sites, fire lines and burned areas. If native seeds/plants are not available, revegetation projects will rarely be undertaken until native plant seed or plants become available, except as an intermediate step toward native restoration.	In re-vegetation efforts use plant species that will not invade or persist. Use persistent non-natives, such as crested wheatgrass, clover and range alfalfa, if necessary, on degraded sites, where less persistent species have been shown to be unsuccessful in competing with invasive plants.

Rationale for Selected Standard

The Selected Alternative is similar to the Proposed Action, but includes minor clarifying modifications. I am selecting this standard because it will ensure non-native plants are used appropriately, thus reducing spread of invasive plants better than No Action (no standard) or Alternative D. I am not selecting No Action/Alternative D for this standard because it does not adequately emphasize the use of native plants where possible, thus reducing the effectiveness of invasive plant treatment and site restoration (decision factor 1).

Alternative B would not have explicitly acknowledged that non-natives serve a purpose towards restoration. Non-native, non-invasive species revegetation with desirable non-natives can be appropriate for disturbed areas or in areas needing immediate erosion control or revegetation.

Mixing non-persistent, non-native annuals with native species, for example, may rapidly control erosion and reduce invasion potential until slower germinating natives occupy a site. The restrictive language in Alternative B may have resulted in delays and/or reduced effectiveness in restoration (Chapter 4.2.3).

Thus, I am not choosing Alternative B because it would be less effective in preventing/treating invasive plants and restoring treated areas (decision factor 1).

Treatment Restoration Standard 14

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/Selected Alternative	Alternative B	Alternative D
14 (Objectives 1.4, 4.1, 4.2)	Use only APHIS and State-approved biological control agents. Agents demonstrated to have direct negative impacts on non-target organisms would not be released.	Same as Proposed Action.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting this standard from the Proposed Action (applied to all action alternatives) because it reduces the chances of unintended non-target impacts because of the APHIS testing procedures. It also provides for adaptive management if unexpected non-target impacts are discovered. Adopting this standard will address decision factors 1 and 2 better than No Action (no standard).

Treatment Restoration Standard 15

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/Selected Alternative	Alternative B	Alternative D
15 (Objectives 1.4, 3.1, 4.1, 4.2)	Application of any herbicides to treat invasive plants will be performed or directly supervised by a State or Federally licensed applicator. All treatment projects that involve the use of herbicides will develop and implement herbicide transportation and handling safety plans.	Same as Proposed Action.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting this standard from the Proposed Action (also would have applied to all action alternatives) because this measure will ensure that herbicides are properly and safely applied better than No Action (no standard). This addresses decision factor 2 better than No Action.

Treatment Restoration Standard 16

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/ Selected Alternative	Alternative B	Alternative D
16 (Objectives 1.4, 3.1, 4.1, 4.2)	Select from herbicide formulations containing one or more of the following **10 active ingredients**: chlorsulfuron, clopyralid, glyphosate, imazapic, imazapyr, metsulfuron methyl, picloram, sethoxydim, sulfometuron methyl, and triclopyr. Mixtures of herbicide formulations containing 3 or less of these active ingredients may be applied where the sum of all individual Hazard Quotients for the relevant application scenarios is less than 1.0. [3] All herbicide application methods are allowed including wicking, wiping, injection, spot, broadcast and aerial, as permitted by the product label. Chlorsulfuron, metsulfuron methyl, and sulfometuron methyl will not be applied aerially. The use of triclopyr is limited to selective application techniques only (e.g., spot spraying, wiping, basal bark, cut stump, injection). Additional herbicides and herbicide mixtures may be added in the future at either the Forest Plan or project level through appropriate risk analysis and NEPA/ESA procedures.	Select from herbicide formulations containing one or more of the following **4 active ingredients**: clopyralid, glyphosate, sethoxydim, and triclopyr. No mixture of these herbicide formulations is permitted. All herbicide application methods are allowed including wicking, wiping, injection, spot, broadcast and aerial, as permitted by the product label. The use of triclopyr will be limited to selective application techniques only (e.g. spot spraying, wiping, basal bark, cut stump, injection). Additional herbicides, with the exception of picloram, sulfonylurea herbicides and acetolactate synthase-inhibiting herbicides, may be added in the future at either the Forest Plan or project level through appropriate risk analysis and NEPA/ESA procedures.	Select from herbicide formulations containing one or more of the following **12 active ingredients**: 2,4-D, chlorsulfuron, clopyralid, dicamba, glyphosate, imazapic, imazapyr, metsulfuron methyl, picloram, sethoxydim, sulfometuron methyl, and triclopyr. Mixtures of herbicides formulations containing these active ingredients may be applied where the sum of all individual Hazard Quotients for the relevant application scenarios is less than 1.0. [3] All herbicide application methods are allowed including wicking, wiping, injection, spot, broadcast and aerial, as permitted by the product label. Additional herbicides and herbicide mixtures may be added in the future at either the Forest Plan or project level through appropriate risk analysis and NEPA/ESA procedures.

Rationale for Selected Standard

I am selecting the Proposed Action for Standard 16 because it allows for use of a wide range of herbicides that:

a) Are likely to treat all situations known across the Region (see FEIS Chapter 4.2).

b) Do not have the risks associated with use of 2,4-D or dicamba (see FEIS Chapters 4.3, 4.4, 4.5 and 4.7).

This is one of the primary components of the need for action (decision factor 1): need for an updated list of herbicides for use on National Forest System lands in Region Six. The No Action Alternative would not have provided new herbicides for use, severely restricting treatment effectiveness and resulting in the rates of spread currently known.

I did not choose Alternative B for this standard because the herbicides that would be approved are not fully effective in treating invasive plant situations known in the Region (FEIS Chapter 4.2.3) and would increase the costs of treatments more than any other alternative (FEIS Chapter 4.6.2). I am not selecting Alternative B because the limitations in herbicides would have been less effective in treating invasive plants (decision factor 1) and would have higher costs (decision factor 4). I recognize that Alternative B had less potential for direct adverse effects of herbicides to non-target species and public health and safety because of this standard (decision factor 2).

I did not choose Alternative D for this standard because the addition of 2,4-D and dicamba would have increased the potential for harm to non-target species, workers and the public. I recognize the FEIS estimated that these additional herbicides would result in less expensive treatments and increased acreage treated annually given a static budget (decision factor 4). However, these herbicides do not treat any invasive plant that cannot be treated with the suite of ten herbicides included in the Proposed Action, nor do they provide any advantage in terms of herbicide resistance (see FEIS Chapter 4.2).

Many people argued that 2,4-D and dicamba should be allowed, either for widespread or more limited use. Three comments are indicative of the range of comments received. In most cases, those who expressed that these chemicals should be allowed were invasive plant treatment practitioners.

> "Dicamba and/or 2,4-D should be allowed, they might be critical to the successful management of Leafy Spurge, Whitetop, and Rush Skeletonweed. One other important issue is that these two chemicals are many times the most cost effective tools available."

> "2,4-D and dicamba can be very cost-effective depending on the application rate and target species. With shrinking budgets and rising application costs, eliminating an inexpensive herbicide has the probability of reducing the number of infestations or acreage treated annually. The one two punch of 2,4-D and dicamba are growth-regulating herbicides readily absorbed and translocated from either roots or foliage. These two chemicals are used largely for noxious weed control on County right of ways. 2,4-D and dicamba have been commonly used by millions of homeowners and landscapers in landscaping situations for many years."

> "Eliminating 2,4-D and dicamba reduces the number of options for control of given weeds. For example, herbicides recommended for use on Dalmatian toadflax (PNW Weed Management Handbook) are dicamba, picloram, picloram+2,4-D, and chlorsulfuron (Idaho and Washington only). Under the proposed alternative, the only herbicide option in Oregon is picloram alone. This needlessly eliminates options that may be more appropriate for certain situations, especially because picloram should not be used where it can leach to nontarget locations, as it has a longer soil residual, which might make it less desirable if the target species is intermingled with susceptible species.
>
> Detrimental effects from too heavy reliance on picloram and clopyralid on legumes could be mitigated by use of 2,4-DB and non-residual and short-residual chemicals (2,4-D and dicamba). Not that they would be used in every case, but there may be situations where their use would be advantageous. These two herbicides would reduce risk of developing herbicide resistance in target species, by having more options for rotating different chemical families. Dicamba and 2,4-D are among the herbicides with lowest risk for developing resistance in target species. In some cases, adding 2,4-D in a mix with one of the other approved herbicides greatly increases the effectiveness and allows a lower rate of application, which not only decreases costs, but environmental effects as well. Use of a lower cost herbicide may free up more money to be spent on use of native species in restoration work, if there is a fixed budget for a given project."

I recognize the cost-effectiveness of 2,4-D and dicamba. It has been commonly and widely used on both private and public lands for the last several decades. At the Regional scale, however, no situations were found where these herbicides would be absolutely necessary. These herbicides are inherently more risky than the ten I am approving for use. Forest Service risk assessments consistently place these two herbicides in higher risk categories for human beings, large mammal and birds (see FEIS Chapter 4.4 and 4.5).

One favorable aspect of 2,4-D is its low cost; this is the main reason why Alternative D is predicted to treat 25 percent more acreage at the same cost as the Proposed Action (See FEIS Chapter 4.2). Widespread use of 2,4-D would have been required to achieve this result.

Many people suggested I impose limitations on the use of 2,4-D and dicamba, rather than eliminate their use altogether. Such limitations would tend to increase the cost of using these chemicals and reduce the acres that can be treated at a static budget.

Therefore, I am not approving 2,4-D or dicamba for widespread use across the Region. At this scale, I am not aware of any situations that cannot be otherwise effectively treated. Site-specific Forest Plan amendments could be contemplated to allow use of these herbicides if local land managers find them necessary. Such amendments would be project-specific and analyzed in future NEPA decisions. The FEIS provides evidence that the methods approved in the Selected Alternative will effectively treat all invasive plant species known in the Region (FEIS Chapter 4.2). I am choosing the Proposed Action because the herbicides approved in Standard 16 can effectively treat known invasions (decision factor 1) without the risks associated with widespread use of 2,4-D and dicamba (decision factor 2).

Support for my position was also noted in the public comments, as demonstrated by these examples:

> "The chemical list in the Purposed Action is reasonable and will support a successful Integrated Pest Management program."
>
> "We also support the Proposed Action because it allows limited use of herbicides. While we are sensitive to public concern over widespread use of herbicides such as 2-4D, such as it proposed in alternative D, we also recognize that it is unlikely that an effective control program can be implemented without treatment with some herbicide. The Proposed Action avoids the use of the most controversial of herbicides and avoids the fallacy that manual or mechanical treatment alone is always sufficient to control or contain noxious weeds. It is a cost effective and culturally acceptable alternative."
>
> "I am extremely opposed to the use of 2,4-D since it has been proven to adversely impact all wildlife and to pollute the streams and rivers, salmon and to stay in the environment for a lasting negative impact on people. It has been proven to cause cancer and I for one am extremely opposed to any further destruction of out ecosystems. There are no invasive weeds that warrant the use of such toxic methods."
>
> "The National Environmental Defense Council (NEDC) strongly suggests that the Forest Service avoid implementation of Alternative D, as it poses the most risk to non-target plant species. By permitting use of 2,4-D and more aggressive aerial spraying, native plant populations will be harmed. Without implementing a monitoring program required by NFMA, the Forest Service may not become aware of the damage until native plant populations are significantly reduced. In addition, as the Forest Service points out, pollinators may be affected by the application of 2,4- D, which in turn will impact the vitality of the native species populations. NEDC does not believe that the Forest Service should implement a plan that permits use of a chemical that has the potential to reduce pollinator species populations, which in turn reduces viability of native plant populations when the goal of the project is to increase native plant species numbers."

The Environmental Protection Agency recently released a Reregistration Eligibility Decision for 2,4-D (June 2005). One finding in the assessment is that non-aquatic use of 2,4-D exceeds levels of concern for endangered mammals, birds and non-target terrestrial plants. The Eligibility Decision is under review to determine whether it contains information pertinent to my decision. Any new information regarding 2,4-D will be included in an updated Forest Service risk assessment. Standard 16 allows for 2,4-D (or other herbicides) to be added in the future at either the Forest Plan or project level after following appropriate risk assessment and NEPA/ESA procedures.

Treatment Restoration Standard 17

Alternatives Considered

Standard (Objective Addressed)	Proposed Action	Alternative B	Alternative D/ Selected Alternative
17 (Objective 3.4)	When herbicide treatments are chosen over other treatment methods, document the rationale for choosing herbicides.	Choose non-herbicide treatment methods over herbicides, unless non-herbicide methods are known to be ineffective or unfeasible. Use herbicides as a tool of last resort. Reduce herbicide use over time at both the regional and local scale.	No standard.

Rationale for Selected Standard

I am not adopting this standard in the Selected Alternative because I do not believe that it is appropriate for the Forest Plans in the Region. Managers' rationales for project scale decisions (such as whether or not to use herbicides) are documented through the NEPA process. I do not believe a standard requiring additional documentation (as required by the Proposed Action) will result in better decisions. Standard 17 was not found to specifically contribute to the effectiveness of any alternative in meeting the purpose and need (FEIS Chapter 4.6.3).

I am not adopting Alternative B for this standard because it would deviate from the IWM principles that are part of Forest Service manual direction (FSM 2080.5), by requiring that herbicides be used as a tool of last resort, rather than as a part of a safe, integrated prescription aimed at achieving optimum results. This undermines the ability of treatments under Alternative B to be effective (decision factor 1). Alternative B would also have incorporated the objective of reducing reliance on herbicides (objective 3.4) as a Forest Plan standard. This could be interpreted to mean declining amounts of herbicide use over time; this would not be appropriate given the uncertainty of budgets, new invasions, and monitoring results. There may be cases where an increase in herbicide use does not reflect greater reliance on herbicides; rather it may reflect an increase in funding or changed ground conditions.

Treatment Restoration Standard 18

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/Selected Alternative	Alternative B	Alternative D
18 (Objectives 3.1, 4.1, 4.2)	Use only adjuvants (e.g. surfactants, dyes) and inert ingredients reviewed in Forest Service hazard and risk assessment documents such as SERA, 1997a, 1997b; Bakke, 2003.	Use only adjuvants and herbicide formulations for which all ingredients have been publicly identified.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting the Proposed Action (also would have applied to Alternative D) for Standard 18 because it ensures that appropriate risk assessment is completed for adjuvants and inert ingredients. I believe this will provide appropriate protection of public and environmental health (decision factor 2). I did not select No Action because it does not include a mechanism for determining whether or not a new ingredient could be used.

Alternative B would have required that only publicly identified ingredients be used. I am not selecting Alternative B because this may put an undue burden on those implementing herbicide projects. Some ingredients are not publicly identifiable, due to non-disclosure provisions included in the regulations that implement the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

I acknowledge that some members of the public advocated for the wording in Alternative B because of their concerns for their health and safety.

I believe that the risk assessments will adequately address public health concerns and allow for reasonable use of herbicides (decision factors 1 and 2).

Treatment Restoration Standard 19

Alternatives Considered

Standard (Objective Addressed)	Selected Alternative	Proposed Action	Alternative B	Alternative D
19 (Objective 4.1)	To ***minimize*** or eliminate direct or indirect negative effects to non-target plants, terrestrial animals, water quality and aquatic biota (including amphibians) from the application of herbicide, use site-specific soil characteristics, proximity to surface water and local water table depth to determine herbicide formulation, size of buffers needed, if any, and application method and timing. ***Consider herbicides registered for aquatic use where herbicide is likely to be delivered to surface waters.***	To reduce or eliminate direct or indirect negative effects to non-target plants, terrestrial animals, water quality and aquatic biota (including amphibians) from the application of herbicide, use site-specific soil characteristics, proximity to surface water and local water table depth to determine herbicide formulation, size of buffers needed, if any, and application method and timing. Only consider those herbicides and herbicide mixtures registered for aquatic use when evaluating herbicide use near streams or surface water.	Same as Proposed Action, plus: Minimize application of herbicides and prohibit broadcast spraying in the riparian reserve land allocation and in known aquatic and terrestrial amphibian habitat, including breeding, rearing, and overland dispersal areas. Avoid application of herbicides with adverse effects on aquatic species and amphibians.	Same as Proposed Action.

Rationale for Selected Standard

The Selected Alternative is similar to the Proposed Action, but includes minor clarifying modifications. The clarifying text is shown in ***bold italics***. I am selecting this standard from the Proposed Action (also would have applied to Alternative D) because it ensures that herbicide use is done in a manner that considers local conditions to minimize or eliminate harm to non-target species (decision factor 2).

FEIS Chapter 4 discusses how adverse effects to non-target species, habitats, soils and water can be minimized or avoided by choice of herbicide or application method. For instance, drift can be minimized in sensitive areas by use of selective herbicide application methods or specific formulations or application rates.

This standard, as written for the Proposed Action and Alternative D, used the word "reduce" rather than "minimize," in reference to potential adverse effects on non-target species. This change is at the request of NOAA Fisheries to ensure that non-target aquatic species are adequately protected. The terms "minimize" and "reduce" are used interchangeably in the FEIS in reference to this standard.

I am also clarifying the requirement to use herbicides registered for aquatic use near streams and surface waters. The intent of the standard is to select herbicide formulations that are effective, while eliminating or minimizing the risk of adverse effects on non-target species. The intent is not to require aquatic-labeled herbicides in all riparian areas.

Aquatic labeling does not necessarily equal low risk to aquatic species. Risks to non-target organisms may be minimized or eliminated within riparian zones with certain non-aquatic labeled herbicides. Thus, the standard now requires that manager consider whether or not to use aquatic-labeled herbicides, depending on the risk of herbicide actually entering the water. This change is consistent with the interpretation and analysis of Standard 19 in the FEIS.

Alternative B would have added requirements to minimize application of herbicides and prohibit broadcast spraying in the riparian reserve land allocation and in known aquatic and terrestrial amphibian habitat, including breeding, rearing, and overland dispersal areas. Application of herbicides with adverse effects on aquatic species and amphibians would also have been avoided by standard.

Alternative B may be overly restrictive by prohibiting broadcast spraying in the full riparian reserve land allocation. Riparian reserve land allocations may be larger than the buffers needed to reduce potential risks to surface water from broadcast spraying. This would have eliminated some necessary options for safe and effective herbicide treatments and reduced this alternative's potential effectiveness (FEIS Chapter 4.2.3).

Therefore, I am choosing the modified Proposed Action because it is more effective in treating invasive plants than No Action or Alternative B (decision factor 1). I am also choosing the Propose Action because it minimizes adverse effects on the environment inherent in No Action (decision factor 2).

Treatment Restoration Standard 20

Alternatives Considered

Standard (Objective Addressed)	Selected Alternative	Proposed Action	Alternative B	Alternative D
20 (Objectives 4.1, 4.2, 4.3)	Design invasive plant treatments to ***minimize*** or eliminate adverse effects to species and critical habitats proposed and/or listed under the Endangered Species Act. This may involve surveying for listed or proposed plants prior to implementing actions within unsurveyed habitat if the action has a reasonable potential to adversely affect the plant species. Use site-specific project design (e.g. application rate and method, timing, wind speed and direction, nozzle type and size, buffers, etc.) to mitigate the potential for adverse disturbance and/or contaminant exposure.	Design invasive plant treatments to reduce or eliminate adverse effects to species and critical habitats proposed and/or listed under the Endangered Species Act. This may involve surveying for listed or proposed plants prior to implementing actions within unsurveyed habitat if the action has a reasonable potential to adversely affect the plant species. Use site-specific project design (e.g. application rate and method, timing, wind speed and direction, nozzle type and size, buffers, etc.) to mitigate the potential for adverse disturbance and/or contaminant exposure.	Same as Proposed Action.	Same as Proposed Action.

Rationale for Selected Standard

The Selected Alternative is similar to the Proposed Action, but includes minor clarifying modifications. The clarifying text is shown in ***bold italics***. This standard, as written for all action alternatives, used the word "reduce" rather than "minimize," in reference to potential adverse effects on species and critical habitats proposed and/or listed under the Endangered Species Act. This change is at the request of NOAA Fisheries to ensure that aquatic species are adequately protected. The terms "minimize" and "reduce" are used interchangeably in the FEIS in reference to this standard.

I am choosing to adopt this standard because it provides more protection for threatened and endangered species than No Action (decision factor 2). Effects determinations for threatened and endangered plants, animals and fish are discussed in FEIS Chapter 4.6. Table 4-51 discusses ways effects on these species may be minimized.

Treatment Restoration Standard 21

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/Selected Alternative	Alternative B	Alternative D
21 (Objectives 3.1, 4.2)	Provide a minimum buffer of 300 feet for aerial application of herbicides near developed campgrounds, recreation residences and private land (unless otherwise authorized by adjacent private landowners).	Same as Proposed Action, plus**:** Provide buffers to adequately protect culturally significant plant and wildlife resources during broadcast application of herbicides.	Same as Proposed Action.

Rationale for Selected Standard

I am choosing the Proposed Action (would have also applied to Alternative D) because it addresses human health concerns about effects from aerial drift better than No Action (no standard). The risk assessments and analysis in the FEIS demonstrate that the public health hazards from herbicides in the Proposed Action are low (decision factor 2).

Alternative B would have required that buffers be provided to adequately protect culturally significant plant and wildlife resources during broadcast application of herbicides. The Alternative B version of the standard is unclear, which may lead to unintentional consequences on other programs (decision factor 3) or increase treatment costs (decision factor 4). Culturally significant plants and animals will be adequately protected by management direction included in the other standards and existing policy of tribal consultation (decision factor 2). Therefore, I am not selecting Alternative B.

Treatment Restoration Standard 22

Alternatives Considered

Standard (Objective Addressed)	Proposed Action/Selected Alternative	Alternative B	Alternative D
22 (Objectives 4.1)	Prohibit aerial application of herbicides within legally designated municipal watersheds.	Same as Proposed Action.	Same as Proposed Action.

Rationale for Selected Standard

I am selecting this standard from the Proposed Action (applied to all action alternatives) because it protects drinking water (decision factor 2) better than No Action (no standard). Additional requirements may apply in specific municipal watershed plans.

Treatment Restoration Standard 23

Alternatives Considered

Standard (Objective Addressed)	Selected Alternative	Proposed Action	Alternative B	Alternative D
23 (Objective 3.1	Prior to implementation of herbicide treatment projects, National Forest system staff will ensure timely public notification. Sign treatment areas to inform the public, and forest workers of herbicide application dates and herbicides used. If requested, individuals will be notified in advance of spray dates.	Prior to implementation of treatment projects, each Forest will develop a public information plan. The plan will ensure (at a minimum) that timely (normally 15 days) public notification will occur. Warning and information signs will be placed at appropriate locations (defined in the public information plan) to inform the public, and forest workers of herbicide application dates and herbicide used. If requested, individuals may be notified in advance of spray dates and times.	Same as Proposed Action.	Same as Proposed Action.

Rationale for Selected Standard

I am choosing the Proposed Action with modifications. The new wording is similar to the Proposed Action, but not exactly the same. It would have the same effect as the standard as written in the FEIS, but emphasizes action more than planning, which I expect will yield similar or better results. I am choosing to adopt this standard because it addresses public concerns about notification of potential exposure to herbicides better than No Action (no standard). This will serve to fully protect public health and safety (decision factor 2).

Inventory and Monitoring Plan Framework

I have decided to add the inventory and monitoring plan framework in Appendix M of the FEIS to all Forest Plans in the Region (same for all action alternatives), with three minor modifications. These modifications do not change the intent or effect of the Proposed Action as described in the FEIS. This inventory and monitoring framework was part of all action alternatives.

1. A clarification that effectiveness monitoring would occur on a representative sample of "high risk" projects, to avoid a misinterpretation that effectiveness monitoring is required for any/all projects of this type.
2. A clarification that effectiveness monitoring results will be reported.
3. A clarification that interagency includes (but is not limited to): USDA Forest Service, U.S. Fish and Wildlife Service, and National Marine Fisheries Service.

I am choosing to adopt this framework because it builds on existing inventory and monitoring processes (No Action), but provides an updated approach. This will improve invasive plant prevention practices and treatment effectiveness (decision factor 1).

Public Involvement

Hundreds of individuals, agency representatives and groups participated throughout the process. Methods used to solicit comment included: Notice of Intent filed in the Federal Register (August 28, 2002); public meetings; a project website; and a direct mailing to approximately 3,000 interested members of the public, organizations, governments, and tribes. Outreach yielded 275 letters of comment and a compendium of input from the public meetings. The letters were reviewed and significant issues were identified.

The DEIS was circulated for public review and comment in August 2004. The Forest Service received approximately 300 responses during the comment period. The Forest Service responded to the comments in a variety of ways: modifying alternatives (changing language in the DFC, goals, objectives or standards), supplementing the analysis, and making correction to the analysis. Appendix A to the FEIS includes more detailed public involvement information, including public comments and agency responses.

Issues

The following issues were the basis for effects analysis in Chapter 4. One reason I am choosing the Selected Alternative is because I believe it adequately resolves public issues.

Issue 1: Strategies to prevent and control invasive plants can vary in effectiveness.

The Selected Alternative has moderate to high potential for reducing rate of spread of invasive plants. While Alternative B would have more likely reduced the rate of spread of invasive plants through prevention, it would not have been as effective in treating some invasive species. Therefore, control of invasive plants was predicted to take longer than the Proposed Action (see FEIS Chapter 4.2). Alternative D would have been the most effective alternative, especially if stronger prevention standards were added, however the reason for the effectiveness is the low cost of 2,4-D and dicamba, which would have been associated with greater potential environmental and human health risks.

Issue 2: Invasive plant treatments may harm non-target plants and native plant communities.

Chapter 4.3 of the FEIS and the summary/comparison tables demonstrate that the potential for herbicides to harm non-target plants and plant pollinators are likely to be resolved through adherence to the standards in the Selected Alternative. The Selected Alternative includes fewer herbicides that may harm non-target plants and communities than Alternative D or No Action. Alternative B would have best resolved this issue (fewest herbicides that may harm non-target plants), but at too high a cost and loss of effectiveness.

Issue 3: Application of certain herbicides may harm some vegetation-eating or insect-eating birds and mammals and/or amphibians.

Chapter 4.4 of the FEIS and the summary/comparison tables demonstrate that the potential for herbicides to harm free-ranging wildlife, vegetation-eating or insect-eating birds, mammals, and/or amphibians are likely to be resolved through adherence to the standards in the Selected Alternative. The Selected Alternative includes fewer plausible herbicide exposure scenarios that may harm birds and mammals than Alternative D or No Action. Alternative B would have best resolved this issue (fewest plausible exposure scenarios), but at too high a cost and loss of effectiveness.

Issue 4: Invasive plant treatments may result in risks to human health, including contamination of drinking water.

Chapter 4.5 of the FEIS and the summary/comparison tables demonstrate that the potential for harm to the health and safety of forestry workers and the public will be adequately resolved through adherence the standards in the Selected Alternative. No Action and Alternative D is associated with greater risks to human health than the Selected Alternative. Alternative B was associated with fewest risks, but the differences are minimal, and the costs of the restrictions associated with Alternative B are great. None of the alternatives, with the exception of Alternative D, are associated with plausible scenarios for drinking water contamination, unless there is an accidental spill of a tanker containing herbicide. Adherence to the standards in the Selected Alternative will eliminate most harmful public exposure scenarios.

Public notification, spill planning, and adherence to OSHA safety standards will adequately protect public and worker health.

Issue 5: Cost of treatments and effects on land uses.

Chapter 4.6 of the FEIS and the summary/comparison tables demonstrate that the Selected Alternative is relatively cost-effective, without unreasonable effects on existing land uses. Alternative D was the least expensive alternative; however, this resulted in higher risks to human health and the environment. Alternative D had the least adverse effects on land uses, but at the expense of effective prevention. Alternative B had the opposite effects; cost and adverse effects on land use were greatest.

The Selected Alternative provides a blend of treatment cost-effectiveness, prevention effectiveness, and reasonable adverse consequences.

Environmentally Preferable Alternative

All of the alternatives protect the biological and physical environment. The Selected Alternative is environmentally preferable because it allows for effective treatment while emphasizing prevention and protecting public, worker and environmental health.

Alternative B would have required reduced levels of herbicide use, with a loss of effectiveness. This reduces its ability to protect the environment, because the threats from invasive plants largely outweigh the risks associated with treatment. Alternative B would have emphasized prevention, with adverse impacts to land management programs, including those aimed at environmental restoration. Alternative D would have resulted in the greatest invasive plant treatment effectiveness, but the risk of harmful herbicide exposures would be much greater.

Thus, the Selected Alternative is the Environmentally Preferable Alternative. It is likely to be effective in controlling invasive plants, while minimizing adverse impacts to the biological and physical environment from treatment. The Selected Alternative is not likely to adversely affect land management activities aimed at protecting and enhancing the environment.

Findings Required by Laws and Regulations

My decision is consistent with all current laws, regulations and policies guiding invasive plant programs and other management activities on National Forest System lands. Specific findings and rationales required by law follow:

Civil Rights and Environmental Justice

The FEIS addresses civil rights and environmental justice. American Indians and Hispanics are groups that may be disproportionately affected by the standards proposed in the action alternatives. American Indian tribes may be disproportionately affected because they are dependent on native plants for cultural and traditional uses and because they may consume more fish (that could be contaminated with herbicides) than the general public. Hispanics may be more likely than the general population to be injured during manual treatments or exposed to chemical treatments because they may be disproportionately represented on some work crews (see Chapter 4.5).

No specific cases of disparate effects to these communities were identified at the regional scale. Environmental justice issues will be further considered at the site-specific level and outreach to tribes and Hispanic communities will occur as a part of project planning.

National Environmental Policy Act (NEPA)

Implementing regulations for NEPA (40 CFR 1909.15) were followed in preparing this EIS. The range of alternatives was adequate to understand and analyze significant public issues. My decision amends existing Forest Plans but does not specifically affect action plans for individual administrative units. It does not authorize any habitat-disturbing activities.

The Selected Alternative adopts all practical means to avoid and/or minimize adverse effects to the environment that are relevant to this planning scale. FEIS Table 4-51 describes the measures the Forest Service expects to take to further reduce the risk of adverse effects during future implementation.

I am choosing the Selected Alternative given the consideration of cumulative effects addressed throughout the FEIS. FEIS Chapter 4.1.1 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 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.

The Environmental Protection Agency published their Final Reregistration Eligibility Decision (RED) for 2,4-D in the Federal Register in August 2005. Information on 2,4-D in the RED (as it pertains to its land management programs, including invasive plant treatment) will be analyzed in an updated Forest Service risk assessment. Standard 16 allows for additional herbicides including 2,4-D to be added in the future at either the Forest Plan or project level to adapt to new information, after following appropriate risk assessment and NEPA/ESA procedures.

National Forest Management Act (NFMA)

This Forest Plan amendment was developed consistent with procedural requirements for National Forests. The applicable planning regulations under the National Forest Management Act (NFMA) were published in the Federal Register on January 5, 2005. This Forest Plan amendment decision is made during the transition period described in 36 C.F.R. Section 219.14(e)(2005). Therefore, the provisions of the planning regulations in effect prior to November 9, 2000, apply, except as otherwise provided in 36 C.F.R. Section 219.14(f)(2005).

This decision is a non-significant amendment to Forest Plans in Region Six. The Forest Service Manual (FSM 1922.51 and .52) provides specific direction for determining the significance of a plan amendment. Significant amendments include:

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

This decision does not affect projections of goods and services; rather it will help maintain the ability of the Forest Service to manage land for desired conditions and outputs. The management direction that would be added does not conflict with existing goals and objectives for forest management.

Endangered Species Act (ESA)

Consultation with regulatory agencies has been conducted and completed. The National Marine Fisheries Service issued their Biological Opinion on September 9, 2005. The U.S. Fish and Wildlife Service issued their Biological Opinion on September 7, 2005.

Both agencies concurred that no species listed under the federal Endangered Species Act are likely to be jeopardized by the Proposed Action/Selected Alternative (modifications were reviewed by the regulatory agencies). No incidental take is involved.

FEIS Chapter 4.7 discloses detailed analysis of potential effects on listed species from invasive plant treatments.

Further consultation will occur at the project scale where listed species may be affected. The final Biological Opinions are available by request or on the Internet at: www.fs.fed.us/r6/invasiveplant-eis.

Clean Water Act

This decision does not directly affect water quality. No site-specific projects are authorized. Water quality will be improved if invasive plants are controlled in riparian areas (FEIS 3.1.2).

Protection of Tribal Treaty Rights and Trust Resources

This decision does not change, restrict or abrogate treaty reserved rights or Executive Orders. Implementation of the standards may affect natural resources on which the tribes depend. Government-to-Government consultation with tribal governments will occur during site-specific project planning so that adverse effects to traditional uses and treaty and other rights are avoided or appropriately mitigated.

Valid Existing Rights

Valid existing rights are those rights or claims to rights that pertain to mining claims, mineral or energy easements, rights-of-way, reciprocal rights-of-way, leases, agreements, permits and water rights. Private individuals or companies may hold other Federal, State or local government agencies or valid existing rights.

This decision does not affect any existing rights; however, the prevention standards may result in adjustments to operating plans and permits over time. Appeal rights will be provided to permittees under 36 CFR 251 before specific permits are adjusted.

Implementation

The management direction in this Record of Decision will be added to Forest Plans in the Region with implementation beginning March 1, 2006. Some of the standards have a longer phase-in period (see Appendix 1 for an implementation schedule for each standard).

Existing direction related to the 1988 ROD and 1989 Mediated Agreement will be vacated for invasive plant management starting March 1, 2006, assuming legal procedures related to vacating this agreement are completed.

Administrative Review and Appeal Opportunities

This decision may be appealed in accordance with 36 CFR 217 by filing a written notice of appeal, in duplicate, within 45 days of the publication of the legal notice. An appeal notice must be in writing clearly stating that it is a Notice of Appeal being filed in pursuant to 36 CFR 217. Appeals must be filed with the Chief of the Forest Service at either of the following addresses:

Regular Mail:	**Courier, UPS, Fed-ex:**
USDA, Forest Service,	USDA, Forest Service
Attn: EMC, Appeals	Attn: EMC, Appeals
Mail Stop 1104	Yates Building, 3CEN
1400 Independence Ave, SW	201 14th Street SW
Washington, DC 20250-1104	Washington, DC 20024

Complete instructions for appellants are given at 36 CFR 217.9. At a minimum, a written notice of appeal filed with the Reviewing Officer must:

1. State that the document is a Notice of Appeal filed pursuant to 36 CFR part 217;
2. List the name, address, and telephone number of the appellant;
3. Identify the decision about which the requester objects;
4. Identify the document in which the decision is contained by title and subject, date of the decision, and name and title of the Deciding Officer.
5. Identify specifically that portion of the decision or decision document to which the requester objects;
6. State the reasons for objecting, including issues of fact, law, regulation, or policy, and, if applicable, specifically how the decision violates law, regulation, or policy; and
7. Identify the specific change(s) in the decision that the appellant seeks.

Contact Person

For additional information concerning this decision or the Forest Service appeal process, contact:

Doug Daoust
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PO Box 3623
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www.fs.fed.us/r6/invasiveplant-eis

Linda Goodman, Regional Forester [**DATE**]
Pacific Northwest Region

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Appendix 1 – Full Text Added to Forest Plans in R6

Desired Future Condition

In National Forest lands across Region Six, healthy native plant communities remain diverse and resilient, and damaged ecosystems are being restored. High quality habitat is provided for native organisms throughout the region. Invasive plants do not jeopardize the ability of the 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.

Goals and Objectives	
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 1.1	Implement appropriate invasive plant prevention practices to help reduce the introduction, establishment and spread of invasive plants associated with management actions and land use activities.
Objective 1.2	Educate the workforce and the public to help identify, report, and prevent invasive plants
Objective 1.3	Detect new infestations of invasive plants promptly by creating and maintaining complete, up-to-date inventories of infested areas, and proactively identifying and inspecting susceptible areas not infested with 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, 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 2 - 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.	
Objective 2.1	Reduce soil disturbance while achieving project objectives through timber harvest, fuel treatments, and other activities that potentially produce large amounts of bare ground
Objective 2.2	Retain native vegetation consistent with site capability and integrated resource management objectives to suppress invasive plants and prevent their establishment and growth
Objective 2.3	Reduce the introduction, establishment and spread of invasive plants during fire suppression and fire rehabilitation activities by minimizing the conditions that promote invasive plant germination and establishment.

Goals and Objectives	
Objective 2.4	Incorporate invasive plant prevention as an important consideration in all recreational land use and access decisions. Use Forest-level Access and Travel Management planning to manage both on-highway and off-highway travel and travel routes to reduce the introduction, establishment and spread of invasive plants.
Objective 2.5	Place greater emphasis on managing previously "unmanaged recreation" (OHVs, dispersed recreation, etc.) to help reduce creation of soil conditions that favor invasive plants, and reduce transport of invasive plant seeds and propagules.
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 Six
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.
Goal 5 – Expand collaborative efforts between the Forest Service, our partners, and the public to share learning experiences regarding the prevention and control of invasive plants, and the protection and restoration of native plant communities.	
Objective 5.1	Use an adaptive management approach to invasive plant management that emphasizes monitoring, learning, and adjusting management techniques. Evaluate treatment effectiveness and adjust future treatment actions based on the results of these evaluations.
Objective 5.2	Collaborate with tribal, other federal, state, local and private land managers to increase availability and use of appropriate native plants for all land ownerships.
Objective 5.3	Work effectively with neighbors in all aspects of invasive plant management: share information and resources, support cooperative weed management, and work together to reduce the inappropriate use of invasive plants (landscaping, erosion control, etc.).

Standards

The following standards and an implementation schedule are included in the Selected Alternative.

Standard #	Text of Standard	Implementation Schedule
1	Prevention of invasive plant introduction, establishment and spread will be addressed in watershed analysis; roads analysis; fire and fuels management plans, Burned Area Emergency Recovery Plans; emergency wildland fire situation analysis; wildland fire implementation plans; grazing allotment management plans, recreation management plans, vegetation management plans, and other land management assessments.	This standard will apply to all assessments and analysis documents started or underway as of March 1, 2006; this standard does not apply to assessments and analysis documents signed or completed by February 28, 2006.
2	Actions conducted or authorized by written permit by the Forest Service that will operate outside the limits of the road prism (including public works and service contracts), require the cleaning of all heavy equipment (bulldozers, skidders, graders, backhoes, dump trucks, etc.) prior to entering National Forest System Lands. This standard does not apply to initial attack of wildland fires, and other emergency situations where cleaning would delay response time.	This standard will apply to permits and contracts issued after March 1, 2006. Ongoing permits/contracts issued before this date may be amended, but are not required to be amended, to meet this standard. This standard will apply to Forest Service force account operations starting March 1, 2006.
3	Use weed-free straw and mulch for all projects, conducted or authorized by the Forest Service, on National Forest System Lands. If State certified straw and/or mulch is not available, individual Forests should require sources certified to be weed free using the North American Weed Free Forage Program standards (see Appendix O) or a similar certification process.	Forests are already applying this standard on an informal basis; weed-free straw and mulch will be required as available, starting March 1, 2006.
4	Use only pelletized or certified weed free feed on **all National Forest System lands**. If state certified weed free feed is not available, individual Forests should require feed certified to be weed free using North American Weed Free Forage Program standards or a similar certification process. This standard may need to be phased in as a certification processes are established.	National Forest managers will encourage the use of weed-free feed across the National Forests in the Region. Pelletized feed or certified weed-free feed will be required in all Wilderness areas and Wilderness trailheads starting January 1, 2007. Pelletized or certified weed-free feed will be required on all National Forest System lands when certified feed is available (expected by January 1, 2009). Weed-free (or pelletized) feed requirements will be listed in individual Forest Closure orders.
5	No standard.	N/A

Standard #	Text of Standard	Implementation Schedule
6	Use available administrative mechanisms to incorporate invasive plant prevention practices into rangeland management. Examples of administrative mechanisms include, but are not limited to, revising permits and grazing allotment management plans, providing annual operating instructions, and adaptive management. Plan and implement practices in cooperation with the grazing permit holder.	This standard will apply to grazing permits beginning March 1, 2006.
7	Inspect active gravel, fill, sand stockpiles, quarry sites, and borrow material for invasive plants before use and transport. Treat or require treatment of infested sources before any use of pit material. Use only gravel, fill, sand, and rock that is judged to be weed free by District or Forest weed specialists.	This standard will apply to rock source management beginning March 1, 2006.
8	Conduct road blading, brushing and ditch cleaning in areas with high concentrations of invasive plants in consultation with District or Forest-level invasive plant specialists, incorporate invasive plant prevention practices as appropriate.	This standard will apply to all road blading, brushing and ditch cleaning projects beginning March 1, 2006.
9	No standard.	N/A
10	No standard.	N/A
11	Prioritize infestations of invasive plants for treatment at the landscape, watershed or larger multiple forest/multiple owner scale.	This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.
12	Develop a long-term site strategy for restoring/revegetating invasive plant sites prior to treatment.	This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.
13	Native plant materials are the first choice in revegetation for restoration and rehabilitation where timely natural regeneration of the native plant community is not likely to occur. Non-native, non-invasive plant species may be used in any of the following situations: 1) when needed in emergency conditions to protect basic resource values (e.g., soil stability, water quality and to help prevent the establishment of invasive species), 2) as an interim, non-persistent measure designed to aid in the re-establishment of native plants, 3) if native plant materials are not available, or 4) in permanently altered plant communities. Under no circumstances will non-native invasive plant species be used for revegetation.	This standard will apply to restoration and rehabilitation projects beginning March 1, 2006.
14	Use only APHIS and State-approved biological control agents. Agents demonstrated to have direct negative impacts on non-target organisms would not be released.	This standard will apply to biological control projects beginning March 1, 2006.

Standard #	Text of Standard	Implementation Schedule
15	Application of any herbicides to treat invasive plants will be performed or directly supervised by a State or Federally licensed applicator. All treatment projects that involve the use of herbicides will develop and implement herbicide transportation and handling safety plan.	This standard will apply to herbicide treatment projects as of March 1, 2006.
16	Select from herbicide formulations containing one or more of the following 10 active ingredients: chlorsulfuron, clopyralid, glyphosate, imazapic, imazapyr, metsulfuron methyl, picloram, sethoxydim, sulfometuron methyl, and triclopyr. Mixtures of herbicide formulations containing 3 or less of these active ingredients may be applied where the sum of all individual Hazard Quotients for the relevant application scenarios is less than 1.0. [1] All herbicide application methods are allowed including wicking, wiping, injection, spot, broadcast and aerial, as permitted by the product label. Chlorsulfuron, metsulfuron methyl, and sulfometuron methyl will not be applied aerially. The use of triclopyr is limited to selective application techniques only (e.g., spot spraying, wiping, basal bark, cut stump, injection). Additional herbicides and herbicide mixtures may be added in the future at either the Forest Plan or project level through appropriate risk analysis and NEPA/ESA procedures.	This standard will be applied to invasive plant projects with NEPA decisions signed after March 1, 2006.
17	No standard.	N/A
18	Use only adjuvants (e.g. surfactants, dyes) and inert ingredients reviewed in Forest Service hazard and risk assessment documents such as SERA, 1997a, 1997b; Bakke, 2003.	This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.
19	To minimize or eliminate direct or indirect negative effects to non-target plants, terrestrial animals, water quality and aquatic biota (including amphibians) from the application of herbicide, use site-specific soil characteristics, proximity to surface water and local water table depth to determine herbicide formulation, size of buffers needed, if any, and application method and timing. Consider herbicides registered for aquatic use where herbicide is likely to be delivered to surface waters.	This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.

Standard #	Text of Standard	Implementation Schedule
20	Design invasive plant treatments to minimize or eliminate adverse effects to species and critical habitats proposed and/or listed under the Endangered Species Act. This may involve surveying for listed or proposed plants prior to implementing actions within unsurveyed habitat if the action has a reasonable potential to adversely affect the plant species. Use site-specific project design (e.g. application rate and method, timing, wind speed and direction, nozzle type and size, buffers, etc.) to mitigate the potential for adverse disturbance and/or contaminant exposure.	This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.
21	Provide a minimum buffer of 300 feet for aerial application of herbicides near developed campgrounds, recreation residences and private land (unless otherwise authorized by adjacent private landowners).	This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.
22	Prohibit aerial application of herbicides within legally designated municipal watersheds.	This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.
23	Prior to implementation of herbicide treatment projects, National Forest system staff will ensure timely public notification. Treatment areas will be posted to inform the public and forest workers of herbicide application dates and herbicides used. If requested, individuals may be notified in advance of spray dates.	This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.

1. ATSDR, 2004. Guidance Manual for the Assessment of Joint Toxic Action of Chemical Mixtures. U.S. Department Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry.

Inventory and Monitoring Framework

(APPENDIX M from the Invasive Plant Final EIS)

It is assumed every Forest in Region Six has an invasive plants coordinator and is maintaining an up-to-date invasive plant inventory using NRIS/Terra, the nationally accepted protocol. The inventory will be the primary means to plan and prioritize treatments. The inventory will be used as the main vehicle for tracking treatment effectiveness both regionally and on a site-specific basis.

In addition to the monitoring that is already required under various Forest Plans, this inventory and monitoring plan framework is part of all action alternatives in this Environmental Impact Statement (EIS). The framework would guide the development of detailed monitoring plans at the site-specific project scale. Invasive plant treatment and restoration actions are likely to be complex, involve multiple land ownerships and will take years to implement, due to the nature of invasive plant problems. It is likely that a site will be treated multiple times over the years. Tracking these efforts and subsequent progress will be crucial to determining success.

A good monitoring program will be well thought out and have a high probability of detecting change in the resource being monitored (NPS, 2002). The Field Guide to Invasive Plant Inventory, Monitoring and Mapping (USDA FS, 2002) has been developed to guide monitoring efforts in conjunction with NRIS/Terra. It suggests a monitoring regime may start with annual monitoring for the first 3-5 years, decreasing in frequency to every other year for the next 5-10 years and further decreasing monitoring frequency to every 3 years for the next ten years until the seed source has been exhausted (i.e. no new germination taking place).

Monitoring regimes may vary in time and space depending on the species; for example, those that reproduce vegetatively may require a longer span of annual monitoring. The monitoring categories described in this framework (implementation/compliance, and effectiveness (of treatments in meeting project objectives, and effectiveness of protection measures) can be used to implement a long-term adaptive management strategy. By implementing an adaptive management approach, managers will identify and respond to changing conditions and new information on an ongoing basis, and assess the need to make changes to treatment and restoration strategies.

Implementation/Compliance Monitoring

Implementation/compliance monitoring answers the question, "Did we do what we said we would do?" This question needs to be answered on a Regional scale, because adaptive management strategies require determination that actions are taking place as described in the Invasive Plants EIS.

If an action alternative is selected, each Forest Supervisor will be directed to assess compliance with the Invasive Plant Program EIS Record of Decision as a part of Forest Plan Implementation monitoring. Regional Office staff will periodically aggregate this information as a part of program oversight.

An implementation/compliance checklist database, such as the Pacfish/Infish Biological Opinion Implementation Monitoring module database for the eastside, could be used as a template to input and analyze implementation/compliance monitoring data. The use of a consistent reporting format will allow for aggregation of information at various scales. Such as system will be used to determine patterns of compliance.

Listed Species -- An implementation/compliance monitoring database would track invasive plant treatment projects that are the subject of Section 7 consultations under the Endangered Species Act (ESA), generate annual reporting of compliance for use by the Services (NOAA Fisheries, U.S. Fish and Wildlife) and Forest Service (FS), and allow for common reporting of data on individual projects. As a minimum, on each project requiring consultation, reporting will be required on compliance with Standards 16, 18, 19, and 20 in the Invasive Plant EIS. Additional standards could be included, as appropriate, for the individual ecoregions, Forests, or projects. For example, Northwest Forest Plan (NWFP) riparian standards relevant to herbicide use or invasive plant control projects could be included in the database for those Forests in the NWFP-covered areas.

Effectiveness Monitoring

Effectiveness monitoring, relative to project objectives, answers the question, "Were treatment and restoration projects effective?" This question could be answered on either a regional or a project-level scale. Invasive plant infestations require pre-project inventories to determine how, when, and where treatments are to be applied, and post-treatment monitoring to assess the effectiveness (treatment) in meeting project objectives (e.g. restoring structure and composition of native vegetation).

A goal of the Effectiveness Monitoring component in the Regional Invasive Plant Program is to answer the following questions:

> Have the number of new invasive plant infestations increased or decreased in the Region or at the project level?
>
> What changes in distribution, amount and proportion of invasive plant infestations have resulted due to treatment activities in the region or at the project level?
>
> Has the infestation size for a targeted invasive plant species been reduced regionally or at the project level?

Which treatment methods, separate or in combination, are most successful for specific invasive species?

Which treatment methods have not been successful for specific invasive species?

The nation-wide NRIS/Terra database, and the upcoming FACTS database, provide common reporting formats to input information and provide a mechanism for addressing the above questions. In addition, current long-term ecological monitoring networks will assist the FS in determining trends of invasive plant infestations at the Regional level.

The NRIS/Terra database could be sorted to answer the above questions because it tracks size and species of infestations as well as treatment methods. The Forest Inventory and Analysis Network (FIA) or the Forest Health Monitoring plots associated with the FIA network could be used to follow invasion trends. Such networks could be used to track trends in the spread or reduction in spread of the more dominant invasive plants in the region. Monitoring programs developed at the Forest level would answer more project specific questions.

Listed Species - Monitoring that addresses the effectiveness of various measures designed to reduce potential adverse effects from the project, including standards in the EIS, "project design criteria", "design features", and "protection measures" may also need to be conducted. This type of monitoring will only be required for **a representative sample of** invasive plant treatment projects that pose a "high risk" to federally listed species. "High risk" projects are defined as projects with the potential to affect listed species, in the following situations:

- Any project involving aerial application of herbicide.
- Projects involving the use of heavy equipment or broadcast application of herbicide (e.g. boom spray or backpack spraying that is not limited to spot sprays) that occur in 1) riparian areas (as defined in NWFP, Pacfish, or Infish, as applicable), ditches or water corridors connected to habitat for listed fish; or, 2) proximity to federally listed plants or butterfly habitat.

For the purposes of determining the need for protection measure effectiveness monitoring, invasive plant treatment methods that are **not** considered "high risk" can include, but are not limited to, the following:

- Broadcast application of herbicide and use of heavy equipment that occurs **outside** of, 1) riparian areas, ditches or water corridors connected to water bodies, or, 2) areas in proximity to federally listed plants or butterfly habitat.
- Manual methods including hand-pulling, grubbing, stabbing, pruning, cutting, etc.
- Mechanical methods using small equipment like chainsaws, or equipment rarely used and not often in proximity to listed fish habitat, like flamers, foamers, hot steam, etc.
- Prescribed fire used expressly for invasive plant control and which occurs outside of riparian areas or habitat for federally listed plants or butterflies.
- Herbicide applications using spot spray (used with a shield near listed plant locations) with a backpack sprayer, cut stump, injection, wicking wiping, basal bark applications, or other highly selective methods.
- Minor uses of fertilizer to encourage native plant competition or growth.

- Biological controls used in habitat areas for terrestrial wildlife or fish. Use in proximity to listed plants or butterflies should be evaluated on a case-by-case basis.
- Broadcast applications (except aerial) using clopyralid, imazapic, and metsulfuron methyl in proximity to habitat for listed fish or listed terrestrial wildlife.

A collection of several of these low risk projects in close proximity to each other and in proximity to habitat for listed species may constitute a "high risk" project, but this should be evaluated on a case-by-case basis.

Monitoring for "high risk" invasive plant treatments that may affect ESA-listed species or designated critical habitat should determine if standards and/or protection measures were effective at reducing potential effect pathways (e.g. disturbance, sedimentation, exposure to herbicides) and results should be applicable elsewhere. Unique, individual monitoring efforts and protocols have not provided information that is applicable to other areas or projects. Therefore, a Regional approach is outlined in this framework that will help address the needs for protection measure effectiveness at a broader scale. The regional approach will be developed in consultation with other agencies, including but not limited to National Marine Fisheries Service and U.S. Fish and Wildlife Service.

For example, Japanese knotweed is a serious invader of riparian areas and has the potential to alter ecosystems upon which listed salmon depend. The Region may have several Japanese knotweed treatment projects over the next several years and each one may have the potential to adversely affect listed salmon or designated critical habitat if adequate measures are not part of the treatment plan or are not complied with during implementation. Designing consistent monitoring protocol will allow a more efficient and effective evaluation of the project protection measures.

To meet the objective of being able to evaluate standards and measures applied at the Regional, sub-Regional, and project level for protection of ESA-listed species and/or designated critical habitat in "high risk" projects, an interagency monitoring protocol ***and reporting schedule*** will be developed by 2007. The expectation being that this protocol would be applied to high risk projects to determine the effectiveness of Regional EIS standards, and additional standards or protection measures applied at finer scales, in reducing potential effect pathways (e.g. disturbance, sedimentation, exposure to herbicides, etc.) for listed species.

In the interim, information obtained from implementation/compliance monitoring reports for "high risk" projects will be reviewed in 2005 and 2006 to inform the development of a consistent monitoring protocol for ensuring that standards and protection measures were effective. This 2-3 year lag time before protocol are developed and effectiveness monitoring is implemented does not apply to aerial application of herbicides. All projects with aerial applied herbicide will include a monitoring plan to assess the effectiveness of measures in protecting ESA-listed species and/or designated critical habitat.

Until a Regional, interagency effectiveness monitoring protocol for ESA-listed species and/or designated critical habitat is developed (2007), the need for effectiveness monitoring on "high risk" projects will be evaluated by Level 1 or other interagency technical teams during Section 7 consultation.

Recommendations for additional effectiveness monitoring beyond that described in this framework will require that Level 2 or other appropriate interagency management team agree to the recommendations of the technical or Level 1 team for the project. This process will help lead the Region toward efficient and reliable data collection and allow statistical analysis of the data gathered.

References

USFS (U.S. Forest Service). 2001. Invasive Plant Management Decisions and Environmental Analysis. USDA Forest Service

USFS (U.S. Forest Service). 2002. Field Guide – Invasive Plant Inventory, Monitoring and Mapping Protocol. USDA Forest Service.

NPS (National Park Service). 2002. Invasive Plants Inventory and Monitoring Guidelines, National Park Service.

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Appendix 2 – Alternative Comparison/Decision Factors

Appendix 2 is Table S-2 from the FEIS. The table compares the alternatives in terms of my decision factors.

Table S-2 Alternative Comparison/Decision Factors

Factor for Comparison	Current Direction/ No Action	Proposed Action	Alternative B	Alternative D
How Well the Alternative Meets the Underlying Need for Action				
Reduce the Extent and Rate of Invasive Plant Spread	Does not include new prevention standards. Control may never be reached.	Moderate to high potential for reducing rate of spread from adherence to new prevention standards. Control may be reached within 32 years assuming effective annual treatment of 30,000 acres and spread reduced by half.	Highest potential for reducing rate of spread from adherence to new prevention standards. Control may be reached within 47 years if 20,000 acres are effectively treated annually and spread is reduced to 4 percent.	Moderate potential for reducing rate of spread from adherence to new prevention standards. Control may be reached within 21 years if 40,000 acres are effectively treated annually and spread is reduced to 7 percent.

Table S-2 Alternative Comparison/Decision Factors				
Factor for Comparison	**Current Direction/ No Action**	**Proposed Action**	**Alternative B**	**Alternative D**
Release from Forest Plan Direction so that new practices/ technologies/ and herbicides are available; provides an updated list of herbicides	Maintains current Forest Plan management direction, no new tools available.	High potential to result in effective treatments because it provides for a suite of tools (including herbicides) that are adequate to effectively treat all known infestations.	Alternative B lacks sufficient variety of tools for adapting to different environmental circumstances. For example, Alternative B provides only one tool, sethoxydim, for invasive grass control. Success using sethoxydim on different grasses varies from good when treating reed canarygrass to no effectiveness on quackgrass (Tu et al, 2001). Alternative B may not be effective in remote, difficult to access terrain due to restrictions on aerial spray. Herbicide resistance may increase under Alternative B because there are fewer herbicide choices.	Same as Proposed Action. The additional two herbicides in Alternative D belong to the same family as herbicides in the Proposed Action, so there is no additional advantage in Alternative D for managing herbicide resistance.
Potential Effects to Human Health and The Environment				

Table S-2 Alternative Comparison/Decision Factors

Factor for Comparison	Current Direction/ No Action	Proposed Action	Alternative B	Alternative D
Potential to harm non-target plants	Herbicide use on an estimated 13,000 acres annually includes four herbicides with potential to harm non-target plants: picloram, glyphosate, triclopyr, dicamba	Herbicide use on an estimated 8,500 acres annually includes three herbicides that have potential to harm non-target plants: picloram, glyphosate, and imazapyr. Less risk to non-target plants than No Action, more than Alternative B. Implementing Standard #16 would mitigate potential effects of chlorsulfuron, metsulfuron methyl, sulfometuron methyl, and triclopyr.	Herbicide use on an estimated 2,000 acres annually includes one herbicides with greater potential to harm non-target plants: glyphosate Least risk to non-target plants. Implementing Standard #16 would mitigate potential effect of triclopyr.	Herbicide use on an estimated 15,500 acres includes five herbicides with most potential to harm non-target plants: chlorsulfuron, metsulfuron methyl, sulfometuron methyl, picloram, glyphosate, triclopyr, dicamba. Most risk to non-target plants
Number of herbicides included in each alternative that have known potential to cause toxic effects to honey bees	Current herbicide list includes three herbicides with potential to harm pollinators (honeybees): 2,4-D, glyphosate and triclopyr.	Herbicide list includes two herbicides with potential to harm pollinators (honeybees): glyphosate and triclopyr. Less risk to pollinators than No Action, more than Alternative B	Herbicide list includes one herbicide with potential to harm pollinators (honeybees): glyphosate. Least risk to pollinators	Same as No Action

Table S-2 Alternative Comparison/Decision Factors

Factor for Comparison	Current Direction/ No Action	Proposed Action	Alternative B	Alternative D
Effects on birds and mammals ***Please note that the number of exposure scenarios is not influenced by the estimated acres treated annually.***	There are 25 plausible scenarios where herbicide exposure could harm individual animals. Use of herbicides associated with these harmful exposure scenarios occurs on approximately 13,646 acres annually	There are 21 plausible scenarios where herbicide exposure could harm individual animals. Reduced risk to birds and mammals as compared to No Action. Use of herbicides associated with these scenarios is predicted to occur on about 9,000 acres annually	There are 12 plausible scenarios where herbicide exposure could harm individual animals. Reduced risk to birds and mammals as compared to Proposed Action. Use of herbicides associated with these scenarios is predicted to occur on about 2,500 acres annually.	There are 45 plausible scenarios where herbicide exposure could harm individual animals. Increased risk to birds and mammals as compared to No Action. Use of herbicides associated with these scenarios is predicted to occur on about 27,500 acres annually.
Number of herbicides included that may harm amphibians	Three herbicides approved for use currently are known to potentially harm amphibians.	Reduces herbicides from 3 to 1 known to potentially harm amphibians.	Reduces herbicides from 3 to 1 known to potentially harm amphibians	Same as No Action.
Worker exposure to manual treatment hazards	Approximately 36,500 worker days of exposure annually from manual treatments.	Approximately 30,500 worker days of exposure annually from manual treatments. Reduces potential for exposure as compared to No Action.	Approximately 45,000 worker days of exposure annually from manual treatments. Increases potential for exposure as compared to No Action.	Approximately 8,500 worker days of exposure annually from manual treatments. Reduces potential for exposure as compared to Proposed Action.

Table S-2 Alternative Comparison/Decision Factors				
Factor for Comparison	**Current Direction/ No Action**	**Proposed Action**	**Alternative B**	**Alternative D**
Worker exposure to harmful doses of herbicide and/or NPE	No plausible scenarios for harm to workers applying herbicides at typical application rates. Current Herbicide use is associated with an estimated 13 plausible scenarios that could harm workers at maximum label rates. These scenarios are associated with herbicide use that occurs annually on about 12,281 acres.	No plausible scenarios for harm to workers applying any approved herbicides at typical application rates. Projected herbicide use is associated with an estimated 11 plausible scenarios that could harm workers at maximum label rates (less than No Action). These scenarios are associated with herbicide use that is projected to occur annually on about 4,960 acres under this alternative.	No plausible scenarios for harm to workers applying any approved herbicides at typical application rates. Projected herbicide use is associated with an estimated 7 plausible scenarios that could harm workers at maximum label rates (less than Proposed Action and No Action). These scenarios are associated with herbicide use projected to occur annually on about 508 acres under this alternative.	One plausible scenario for harm to workers applying 2,4-D at typical application rates. Projected herbicide use is associated with an estimated 20 plausible scenarios that could harm workers at maximum label rates (more than No Action). These scenarios are associated with herbicide use project to occur annually on about 24,317 acres under this alternative.

Table S-2 Alternative Comparison/Decision Factors

Factor for Comparison	Current Direction/ No Action	Proposed Action	Alternative B	Alternative D
Public Exposure to Harmful Doses of Herbicides and/or NPE (other than through drinking water contamination)	No plausible scenarios for harm to the public from herbicides applied at typical application rates. Current herbicide use is associated with an estimated 9 plausible scenarios that could harm people when applied at maximum label rates. These scenarios are associated with herbicide use that occurs annually on about 591 acres.	No plausible scenarios for harm to the public from herbicides applied at typical application rates. Herbicides allowed are associated with an estimated 4 plausible scenarios that could harm people when applied at maximum label rates (less than No Action). These scenarios are associated with herbicide use that is projected to occur on about 1,000 acres each year.	No plausible scenarios for harm to the public from herbicides applied at typical application rates. Herbicides allowed are associated with an estimated 4 plausible scenarios that could harm people when applied at maximum label rates (same as Proposed Action). These scenarios are associated with herbicide use that is projected to occur on about 500 acres each year.	Three plausible scenarios for harm to the public from 2,4-D applied at typical application rates. In addition, 2,4-D and other herbicides allowed are associated with an estimated 15 plausible scenarios that could harm people when applied at maximum label rates (more than No Action). These scenarios are associated with herbicide use projected to occur annually on about 15,000 acres under this alternative.
Potential for Drinking Water Contamination	No scenarios known for herbicide to reach harmful concentrations in drinking water from drift.	No scenarios known for herbicide to reach harmful concentrations in drinking water from drift.	No scenarios known for herbicide to reach harmful concentrations in drinking water from drift.	One worst-case scenario known for herbicide to reach harmful concentrations in drinking water from drift. This scenario would have the potential to occur over about 14,000 acres annually.
Potential for drinking water contaminated by tanker spill into pond	A tanker spill into a pond could reach harmful concentration; four plausible scenarios.	A tanker spill into a pond could reach harmful concentration; seven plausible scenarios, more than No Action.	A tanker spill into a pond could reach harmful concentration; three plausible scenarios.	A tanker spill into a pond could reach harmful concentration; nine plausible scenarios, more than any alternative.

Table S-2 Alternative Comparison/Decision Factors

Factor for Comparison	Current Direction/ No Action	Proposed Action	Alternative B	Alternative D
Effects on Existing uses/management activities on National Forest				
Estimated percentage increase in cost of heavy equipment work	No increase.	2% increase in cost of heavy equipment work from adoption of prevention standards.	11% increase in cost of heavy equipment work from adoption of prevention standards.	Same as Proposed Action
Tendency for standards to result in road closures and loss of off-highway vehicle access	No Direct Effect. New restrictions on OHV* use may occur from new national policy.	No new road closures expected from invasive plant prevention standards. OHV use allowed only on specifically designated roads, trails, and areas, based on implementation of draft National Policy.	Tendency for more roads to be closed or decommissioned due to wording of standards. OHV use allowed only on specifically designated roads, trails, and areas, based on implementation of draft National Policy.	No Direct Effect. New restrictions on OHV use may occur from new National Policy (Same as No Action)
Tendency for standards to affect grazing locations, timing, intensity and outputs	Reduces grazing levels, due to rangeland grazing capacities being diminished by invasive plants.	Reduces grazing levels, due to more consistent applications of prevention measures.	Highest tendency to reduce grazing levels, due to more rigid and consistent applications of prevention measures.	Same as Proposed Action.
Acres of National Forest where weed free feed would be required	2.5 million	4.6 million (Wilderness Areas only) Increases costs of obtaining feed for pack stock, increases recreation administration costs accordingly.	24.9 million (all National Forests in the Region) Increases costs of obtaining feed for pack stock, increases recreation administration costs more than the Proposed Action.	2.5 million (same as No Action)
Associated Costs				

Table S-2 Alternative Comparison/Decision Factors

Factor for Comparison	Current Direction/ No Action	Proposed Action	Alternative B	Alternative D
Average Cost of Treatment	Approximately 25,000 acres per year can be treated given the current $4.1 million annual budget.	Reduces average costs of treatment compared to No Action, so 5,000 more acres can be effectively treated each year.	Increases average cost of treatment compared to No Action, so 5,000 fewer acres can be effectively treated each year.	Reduces average cost of treatment compared to No Action so 15,000 more acres can be effectively treated each year.

* Off-Highway Vehicle Recreation – In this document, the term off-highway vehicle (OHV) refers to vehicles used for off-highway pursuits and may include 3 and 4 wheelers, motorcycles, dune buggies, 4x4 vehicles, and other motorized vehicles.