

## **APPENDIX A**

# **FOREST PLAN STANDARDS AND GUIDELINES**

INVASIVE PLANT BIOLOGICAL ASSESSMENT  
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## **Umatilla National Forest - Forest Plan Standard and Guides**

This appendix has management direction from the 1990 Umatilla Forest Land and Resource Management Plan (LRMP) (USDA 1990) as amended by the Pacific Northwest Region Invasive Plant Program, Record of Decision 2005.

The 1990 LRMP goals and objectives that broadly govern the management of national forest lands are listed below. The LRMP also contains Standards and Guidelines that govern management more specifically in each resource area addressed by the goals. The Standards and Guidelines that deal with weeds are also listed in this appendix.

The Forest Plan has a section called “Desired Future Condition.” This section acknowledges that noxious weeds will be part of forest even under desirable conditions. So even under the best scenarios it is understood that noxious weeds will be contained or controlled but in some areas cannot be eradicated completely.

### **FOREST MANAGEMENT GOALS (pages 4-1 to 4-3)**

Forest management goals are statements providing direction for the future and describing the desired conditions to be achieved. The goals are expressed in broad terms and are timeless in that they have no specific date by which they are meant to be completed. The Umatilla National Forest management goals are to:

- Provide land and resource management that achieves a more healthy and productive forest and assists in supplying lands, resources, uses, and values which meet local, regional, and national social and economic needs.
- Provide for a broad spectrum of recreation opportunities and experiences and a variety of recreation settings on the National Forest for Forest recreationists.
- Provide attractive natural to near-natural settings for Forest users along important highways, roads, trails, and in and around developed and primitive sites.
- Preserve, protect, and improve the resources and values of the Forest’s wildernesses.
- Protect and enhance the outstandingly, remarkable values and free-flowing condition of the Wild and Scenic Rivers.
- Protect and perpetuate special areas and related resources for their unique values
- Provide for the protection and preservation of cultural resource values through a program which integrates inventory, evaluation, protection, and enhancement (including interpretation).
- Provide, develop, and enhance effective and well-distributed habitats throughout the Forest for all existing native and desired nonnative vertebrate wildlife species.
- Provide and manage big game (elk and deer) habitat and its components (cover, forage, and roads) to assist in meeting state wildlife agency population management objectives.
- Provide and maintain a diverse, well-distributed pattern of fish habitats to assist in doubling anadromous runs in the Columbia River Basin (by the year 2000) in cooperation with Native American tribes, states, and other agencies. The goal applies to all areas dominated by riparian vegetation, including areas containing anadromous and resident fish habitat, perennial and intermittent stream courses, wetlands, and floodplains.

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- Maintain or improve habitats for all threatened or endangered plant and animal species on the Forest, and manage habitats for all sensitive species to prevent the species from becoming threatened or endangered.
- Manage the forage resources for an improving vegetative trend in areas in less than ‘fair’ condition and for an upward or stable trend for areas in ‘fair’ or better condition. Provide for forage productivity and make suitable range available for livestock grazing. Increase the level of forage production where cost efficient and consistent with other resource goals.
- Provide for diversity of plant and animal communities and species consistent with overall multiple-use objectives for the Forest. Maintain or enhance ecosystem functions to provide for the long-term integrity (stability) and productivity of biological communities.
- Provide areas for research and education purposes which are typical of unique natural ecosystems and are in undisturbed or nearly undisturbed condition.
- Provide for production and sustained yield of wood fiber and insofar as possible meet projected production levels consistent with various resource objectives, standards and guidelines, and cost efficiency.
- Manage Forest lands to maintain or enhance soil and land productivity.
- Manage Forest resources to protect all existing beneficial uses of water and to meet or exceed all applicable state and Federal water quality standards. Within the Forest capability, maintain or enhance water quantity, quality, and timing of streamflows to meet needs of downstream users and other resources. Maintain integrity and equilibrium of all stream systems, riparian areas, and wetlands on the Forest. Manage designated municipal supply watersheds to provide water which, with treatment, will result in a satisfactory and safe supply.
- Maintain air quality at a level adequate for protection and use of Forest resources and which meets or exceeds applicable Federal and state standards and regulations.
- Provide for exploration, development, and production of a variety of minerals on the Forest consistent with various resource objectives, environmental quality, and cost efficiency.
- Promote human resources, civil rights, and community development within the zone of influence of the Forest. Promote cooperation and coordination with individuals, groups, landowners, Forest users, Native American tribes, and state and Federal agencies in forest management, and community and economic development.
- Provide for the use and occupancy of the Forest by private individuals or Federal, state, and local governments when such use is consistent with Forest management objectives, is in the public interest, and cannot be reasonably served by development on private land.
- Provide an optimum pattern of landownership within the Forest considering resource goals and efficiency of managing the Forest.
- Provide and manage a safe and economical road and trail system and facilities needed to accomplish the land and resource management and protection objectives on the Forest.
- Provide and manage administrative facilities sufficient to serve the public and accomplish land and resource management and protection objectives of the Forest.
- Provide and execute a fire protection and fire use program that is cost efficient and responsive to land and resource management goals and objectives
- Protect forest and range resources and values from unacceptable losses due to destructive forest pests through the practice of integrated resource management.

## Forest Management Objectives

### Noxious Weeds and Poisonous Plants

Noxious weeds now infest an estimated 6,000 acres of the Forest. Areas of infestation are associated with activities such as timber harvest, road construction, livestock grazing, and recreation. With the planned level of activity, the potential exists for expanded infestations of weeds on the Forest.

Control efforts will be initiated on the Forest. The Forest Noxious Weed Control Plan (November 1989) is incorporated into the Forest Plan by reference and provides direction for inventory and treatment of target species, interagency and landowner coordination, and funding. The methods of treatment will also be in accordance with the direction in Managing Competing and Unwanted Vegetation, FEIS, November 1988. Essentially, the forests are directed to emphasize prevention and natural ecosystem processes, and reduce reliance on herbicides. However, all treatment methods are available. Cost of treatments will vary greatly. Hand methods are approximately four to six times as expensive as chemical treatment, and will not keep up with the current level of infestation under the present budgets. If effective biological controls are found or herbicides used, the problem will be contained or lessened. Otherwise, the problem will get progressively worse. Presently, progress is being lost in all areas in the control of noxious weeds.

Several plant species not classed as noxious weeds (but as poisonous plants) have caused economic loss to livestock. Generally, control efforts have not been initiated on the Forest because these species have not been abundant and forage conditions have been favorable. No control efforts have been carried out in recent years, and none are planned for the future. See Table 4-13 for a list of Forest problem plants.

**Table 4-13. Problem plants on the Umatilla National Forest**

PRIMARY NOXIOUS WEEDS OCCURRING ON THE FOREST	
Tansy ragwort	<i>(Senecio jacobaea)</i>
Yellowstar thistle	<i>(Centaurea solstitialis)</i>
Dalmation toadflax	<i>(Linaria dalmatica)</i>
Diffuse knapweed	<i>(Centaurea diffusa)</i>
Spotted knapweed	<i>(Centaurea maculosa)</i>
Canada thistle	<i>(Cirsium arvense)</i>
Scotch thistle	<i>(Onopordum acanthium)</i>
Common St Johnswort	<i>(Hypericum perforatum)</i>

**Table 4-32. Some species of poisonous plants common to the Umatilla National Forest**

Common Name	Scientific Name
Deathcamas	<i>(Zigadenus spp.)</i>
Larkspur species	<i>(Delphinium spp.)</i>
Lupine species	<i>(Lupinus spp.)*</i>
Milkvetches or Locoweed species	<i>(Astragalus spp.)**</i>
Water hemlock	<i>(Circuta douglasii)</i>
Prunus (cherry) species	<i>(Prunus spp.)</i>

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Common Name	Scientific Name
Wild red baneberry	<i>(Actaea rubra)</i>
Green false hellebore	<i>(Veratrum viride)</i>
<p>* <i>Lupinus sabinii</i> is a documented Sensitive plant species on the Forest, <i>Lupinus biddiet</i> and <i>Lupinus cusickil</i> are suspected to occur on or near the Forest.</p> <p>** <i>Astragalus arthuri</i> and <i>Astragalus diaphanus</i> are documented Sensitive plant species on the Forest, <i>Astragalus cusickii</i> is suspected to occur on or near the Forest</p>	

Under no circumstances would any proposed control efforts target documented or suspected Sensitive plant species.

## Standards and Guidelines

### Range Improvements standard ; (page 4-62)

1. The allotment management plan will implement a cost-effective program, consistent with management objectives. Structural improvements such as fences and water developments, and nonstructural improvements such as burning, seeding, and fertilizing may be used to achieve the management goals. Range improvements will be constructed and maintained with consideration for other resource needs (e.g., wildlife, visuals). Other activities such as predator, noxious weed, and unauthorized livestock controls may be necessary.

### Ecosystems & Diversity Standard; (page 4-62)

3. Provide for all seral stages of terrestrial and aquatic plant associations in a distribution and abundance that meets the goal. Early successional stages may be improved through introduced forage species in order to increase production, protect soil resources, and prevent noxious or other undesirable weed invasion.

### Pest Management; (4-90)

1. Integrated pest management (IPM), prevention, and suppression strategies will be utilized to manage pests within the constraints of laws and regulations and to meet Forest-wide management objectives. Methods may include management practices (cultural or silvicultural); biological, mechanical, manual, prescribed fire, or chemical treatments; or regulatory measures.
2. All pest management suppression project proposals will be analyzed through the NEPA process to select an appropriate suppression response.
3. Where practical, noxious weeds and invader plants will be controlled to prevent threats to adjacent agricultural lands or to prevent unacceptable loss of forest and range productivity.
4. Plans for control of competing and unwanted vegetation including noxious weeds will be in keeping with Managing Competing and Unwanted Vegetation (FHS) USDA, Forest Service, 1988. The five-step process, composed of site analysis, strategy selection, project design, action, and monitoring, will be used in managing competing and

unwanted vegetation for site specific projects and will be documented in an environmental analysis.

5. Individual project plans will specify licensing approval and public notification requirements for pesticide use on a case-by-case basis.

## **Management Areas**

### **B1 Wilderness- Range; (page 4-145)**

Use of supplemental feeds for recreation livestock will be encouraged over open grazing. Encourage use of feeds that are free of nonindigenous and noxious weed seed.

## **Wallowa Whitman Forest Plan- Forest Management Direction (USDA, 1990)**

### **Diversity-Chapter 4 pg 2**

**Goal:** To maintain native and desirable introduced or historic plant and animal species and communities. Provide for all seral stages of terrestrial and aquatic plant associations in a distribution and abundance to accomplish this goal. Maintain or enhance ecosystem function to provide for long-term integrity and productivity of biological communities.

### **Standards and Guidelines**

**Project Analysis:** Develop, during project planning, site-specific management prescriptions the goals for diversity and ecosystem function

**Vegetation Manipulation:** Provide and maintain developing an ecologically sound distribution and abundance of plant and animal communities and species at the forest stand, basin, and Forest level. This distribution should contribute to the goal of maintaining all native and desirable introduced species and communities. Base tree species used in planting harvest units on the potential of the site as indicated by plant associations Consideration should be given to regenerating and maintaining a mixture of tree species, where appropriate for the site Retain, through precommercial and commercial thinning, a diversity of tree species based on site potential Allow for all natural species to function following vegetation manipulation. None should be eliminated from the site

### **Threatened, Endangered, and Sensitive Species**

**Goal:** To protect and manage habitat for the perpetuation and recovery of plants and animals which are listed as threatened, endangered, or sensitive. (A list of these species can be found in the Forest Plan EIS) To assure that management activities do not jeopardize the continued existence of sensitive species or result in adverse modification of their essential habitat.

### **Standards and Guidelines**

**Reviews Biological Evaluations:** Review all actions and programs, authorized, funded, or carried out by the Forest Service, to determine their potential effects on threatened, endangered, and sensitive species. Conduct these reviews, including biological evaluations, per direction in **FSM 2670 and appropriate R-6 manual supplements:** Prepare a biological evaluation during

the environmental analysis of each project to determine possible effects of the proposed activity on threatened, endangered, and sensitive species.

**Other Activities:** Restrict or prohibit other activities (e.g., off road vehicles impacting plants or habitats) and monitor activities where necessary to protect threatened, endangered, or sensitive species.

**Cooperation:** Cooperate with the States of Oregon, Washington, and Idaho in all aspects of sensitive plant management under the auspices of the Master Memoranda of Understanding. The Oregon Natural Heritage Data Base and the Washington Natural Heritage Program will be contacted regarding sensitive species information.

Cooperate with the US Fish and Wildlife Service, the States of Oregon, Washington, and Idaho and the Oregon Natural Heritage Data Base and the Washington Natural Heritage Program in the development of Species Management Guides for sensitive species adversely affected by standard management practices.

Cooperate with the same agencies/organizations in the development and implementation of recovery plans for threatened and endangered species. Corrective measures to avoid possible adverse effects on recovery of populations will be implemented.

**Monitoring:** Monitor known populations of sensitive species and their habitats in accordance with the Forest Monitoring Plan.

## **HCNRA Direction**

### **Direction from HCNRA Management Plan (Forest Plan Amendment # 29, USDA 2003)**

Biologically Unique Species, Habitats, and Ecosystems Definition of Biologically Unique Species, Habitats, and Ecosystems

Establishes criteria for identifying biologically unique species, habitats, and ecosystems as those that are: (1) limited in distribution solely or principally to the HCNRA; or (2) limited in distribution within the HCNRA, but may be relatively common within the neighboring ecoregions; or (3) relatively abundant in the HCNRA, but limited in distribution within the three neighboring ecoregions.

Identifies biologically unique species, habitats, and ecosystems as rare plant species (including 'disjunct' populations in the HCNRA that are geographically separated from the main distribution of a species); endemic plant species; rare combinations of aquatic, terrestrial, and atmospheric habitats; and rare combinations of outstanding and diverse ecosystems and parts of ecosystems.

Rare plant species (137) are threatened, endangered, or proposed plants listed by U.S. Fish and Wildlife Service; sensitive species in Regions 1, 4, and 6; or disjunct plant species (separated geographically from the main range of species).

Endemic plant species (9) are restricted to the HCNRA or immediate vicinity (defined as the Snake River Canyon from Oxbow Dam downriver to the Washington State border, the lower Salmon River, the middle and lower portions of the Imnaha River including the tributaries of these river reaches).

Rare combinations of aquatic, terrestrial and atmospheric habitats (6) principally reflect physical environmental features of the landscape that are produced from a unique combination of soils, climate, precipitation, and aspect. Rare combinations of outstanding and diverse ecosystems are plant community types and associations (16) that are biologically unique because they occur in the HCNRA and nowhere else or occur in limited amounts within the HCNRA.

Management Direction manages the HCNRA as an area of high biological diversity and endemism to ensure the maintenance and/or restoration of ecological function and sustainability of species, habitats, and ecosystems that contribute to its biological uniqueness. Provides specific direction for identification, protection, and mitigation of effects for biologically unique species, habitats, and ecosystems through identification, protection, and mitigation of effects during project-level planning. RNAs will continue to be managed under existing direction in the Forest Plan (MA 12) to preserve significant natural ecosystems for comparison with those influenced by humans; for provision of ecological and environmental studies; for preservation of gene pools for typical and rare and endangered plants and animals. In addition, RNAs will also be managed to protect rare combinations of outstanding and diverse ecosystems that occur within RNAs. Fuelwood cutting, commercial mushroom harvesting, and commercial collection of special forest products in proposed and established RNAs will be prohibited.

### **Management Direction for Noxious Weeds**

**Nox-O1:** Manage noxious weeds to reduce negative impacts to native plants, wildlife, and other resources. Use all reasonable and feasible integrated weed management processes available under existing decisions and direction to prevent, restore, eradicate, control, contain, or otherwise reduce negative impacts of noxious weeds.

**Nox-O2:** Evaluate extent of nonnative invasive plants, their relative impacts and potential for restoration. (New) **Nox-O3:** Evaluate the factors contributing toward the spread of nonnative invasive plants and implement appropriate prevention strategies. (New)

**Nox-G1:** Conduct restoration activities on grassland sites in mid-seral or earlier status to improve the ability of native vegetation on site to resist invasion and occupancy by noxious weeds. (New)

**Nox-G2:** Develop a public information and education program on preventing the introduction and spread of noxious weeds. Provide a reporting method for and encourage the public to report new weed sites. (New) **Nox-G3:** Provide for natural restoration of degraded sites by modifying management activities as necessary. (New)

**Nox-G3:** Consider quarantine or closure of some areas, trails, and/or roads to prevent the spread of noxious weeds to adjacent areas. (New)

**Nox-G3:** Consider quarantine or closure of some areas, trails, and/or roads to prevent the spread of noxious weeds to adjacent areas. (New)

**Nox-G6:** When planning PF projects, identify sites of known noxious weeds and/or invasive species of concern. Avoid burning through identified weed sites and/or prescribe management actions that will minimize the potential for creation of site conditions favorable to the spread of invasive weeds. (New) **Nox-G7:** Contain and/or control aggressive noxious weeds and other nonnative plants that reduce ground cover, reduce perennial plant cover, and accelerate erosion. (New)

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**Nox-G7:** Contain and/or control aggressive noxious weeds and other nonnative plants that reduce ground cover, reduce perennial plant cover, and accelerate erosion. (New)

**Rec-S23:** Outfitters and guides will be provided with simple noxious weed and invasive species identification handbooks and forms on which to report changes in the location or presence of noxious weeds and invasive species along their outfitting and guiding routes. As a condition of their permit, the permittee will complete and submit an HCNRA noxious weed form each month in which outfitting and guiding services are provided.

**Rec-S24:** Noxious weed identification sheets/reporting forms will be offered to visitors in all visitor centers and trailheads.

**Wil-S4:** Noxious weeds would be managed within the Wilderness using the minimum management tool to insure the most compatible, but effective means of meeting objectives. (INWMP Plan)

**Acc-G8:** Manage roads and trails in coordination with the Integrated Noxious Weed Management Plan. Where roads or trails are to be maintained, ensure an up to date inventory of all noxious weed sites within the right-of-way and plan for appropriate treatment to prevent the spread of weeds during maintenance activities. Strive to maintain an effective ground cover on all adjacent disturbed surfaces, consistent with safety, to provide a degree of protection against the spread or invasion of noxious weeds. Where roads or trails are to be closed, ensure that pre-planning provides for an inventory of noxious weeds sites and for continued treatment of those sites. During closure activities, ensure that on-site or seeded native plant species are considered with the focus on minimizing bare ground. (INWMP Plan)

**Veg-S1:** Follow the Integrated Noxious Weed Management Plan (USDA 1992) and the USFS Yellow Starthistle Management proposal to manage noxious weeds in the HCNRA. (INWM Plan)

**TES-O4:** Conduct habitat improvement projects for federally listed species. These may include fencing, burning, closing roads, treatment of noxious weeds, plant propagation, or other actions.

The following standards have been adopted into the Umatilla and Wallowa-Whitman National Forests' 1990 LRMP from the 2005 R-6 Pacific Northwest Region Invasive Plant Program ROD.

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	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.

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Standard #	Text of Standard	Implementation Schedule
	emergency situations where cleaning would delay response time.	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
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 leaning 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	This standard will apply to restoration and rehabilitation projects beginning March 1, 2006.

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Standard #	Text of Standard	Implementation Schedule
	<p>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.</p>	
14	<p>Use only APHIS and State-approved biological control agents. Agents demonstrated to have direct negative impacts on non-target organisms would not be released.</p>	<p>This standard will apply to biological control projects beginning March 1, 2006.</p>
15	<p>Application of any herbicides to treat invasive plants will be performed or directly supervised by a State or Federally licensed applicator.</p> <p>All treatment projects that involve the use of herbicides will develop and implement herbicide transportation and handling safety plan.</p>	<p>This standard will apply to herbicide treatment projects as of March 1, 2006.</p>
16	<p>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.<sup>1</sup></p> <p>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).</p> <p>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.</p>	<p>This standard will be applied to invasive plant projects with NEPA decisions signed after March 1, 2006.</p>
17	<p>No standard.</p>	<p>N/A</p>
18	<p>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.</p>	<p>This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.</p>
19	<p>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.</p>	<p>This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.</p>
20	<p>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</p>	<p>This standard will apply to invasive plant treatment projects with NEPA decisions signed after March 1, 2006.</p>

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Standard #	Text of Standard	Implementation Schedule
	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.	
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.		