



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Western Washington Fish and Wildlife Office
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Lacey, Washington 98503

In Reply Refer To:
13410-2007-I-0647

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Scenic Area Manager
Columbia River Gorge National Scenic Area
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This letter responds to your request for consultation under section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act) on the proposed Invasive Plant Treatment Project. Your letter, dated January 19, 2007, was received in the U.S. Fish and Wildlife Service's (Service) Western Washington Fish and Wildlife Office on January 23, 2007. In this letter, you requested concurrence with the determination that the Invasive Plant Treatment Project "may affect, but is not likely to adversely affect" the northern spotted owl (*Strix occidentalis caurina*) (spotted owl), marbled murrelet (*Brachyramphus marmoratus*), and bald eagle (*Haliaeetus leucocephalus*). Your letter also requested formal consultation for bull trout (*Salvelinus confluentus*). Formal consultation for bull trout is provided in a separate Biological Opinion (Service reference number 13410-2007-F-0267).

In addition to formal consultation, you requested concurrence for a specific subset of invasive plant treatment sites that were determined "may affect, not likely to adversely affect" the bull trout.

Summary of the Proposed Action

The Gifford Pinchot National Forest (GPNF) and Columbia River Gorge National Scenic Area (CRGNSA) (Washington side) are proposing to use manual, mechanical, and herbicide treatment methods on approximately 2,710 acres to eradicate, control, or contain invasive plants and restore sites after treatment. A variety of invasive plant species would be treated, including but not limited to bull and Canada thistle, knapweed, hawkweed, knotweed, and reed canarygrass.



Manual techniques include hand pulling, clipping, or digging invasive plants with non-motorized hand tools such as axes, hoes, shovels, and hand clippers. Mechanical methods involve chainsaws, mowers, brush cutters, or other machinery with various kinds of blades to remove plants. Restoration treatments may include hand or machine mulching, seeding, or planting. The tools and methods used for restoration activities are the same as those used for manual and mechanical treatments.

Chemical treatments will be limited to formulations which include the following herbicide compounds: chlorsulfuron, clopyralid, glyphosate, imazapic, imazapyr, metsulfuron methyl, picloram, sethoxydim, sulfometuron methyl, and triclopyr. Herbicide application methods include broadcast, spot spray, and hand/selective. Broadcast methods distribute herbicide over broad areas covering both target plants and non-target plants. Broadcast treatments would typically be used to treat dense patches of target vegetation. Spot spray methods include spraying herbicide directly onto small patches or individual target plants while avoiding non-target plants. Hand/selective methods treat individual target plants. All treatments will follow the project design features listed in Enclosure 1.

Northern Spotted Owl

The Service concurs with the GPNF/CRGNSA determination of “may affect, not likely to adversely affect” for the spotted owl. This concurrence is based on the timing and location of invasive plant treatment activities and on the results of the Syracuse Environmental Research Associates Inc. (SERA) risk assessments.

Manual, Mechanical, and Restoration Treatments

The Service completed a review of scientific literature in 2003 relative to the effects of sound exposure to the spotted owl (U.S. Fish and Wildlife Service 2003). The results of that review concluded that the effects of sound from heavy equipment and motorized tools were insignificant at distances greater than 35 yd, and that the effects of sound from chainsaws were insignificant at distances greater than 65 yd for spotted owls in the early breeding season. The review also concluded that these activities would not be likely to disturb nesting spotted owls during the late breeding season.

Invasive plant treatments will be conducted after June 30 and before March 1. Treatments may occur between March 1 and June 30 if they occur outside disturbance distances (greater than 65 yd for chainsaws and 35 yd for heavy equipment and motorized tools) or if the activities are within ambient levels of sound and human presence. By July 1, spotted owlets are no longer completely dependent upon the adults and are able to thermoregulate, fly, and forage on their own, thereby reducing their susceptibility to disturbance-related effects. Therefore, the Service considers potential disturbance effects to spotted owls from the proposed action are discountable because Project Design Criteria (PDC) J2 (Enclosure 1) restricts invasive plant treatments adjacent to spotted owl nesting habitat during the early nesting season. No suitable spotted owl habitat would be removed by the proposed action.

Herbicide Treatments

The potential for the herbicides to adversely affect spotted owls was determined using quantitative estimates of exposure from worst-case scenarios from the SERA risk assessments conducted for the U.S. Forest Service. A worst-case exposure scenario for the spotted owl was conducted using consumption of prey that had been directly sprayed, and assuming 100 percent absorption of the herbicide. At typical application rates, the estimated doses from the exposure scenarios are all less than the reported “no observable adverse effect level” (NOAEL) for all herbicides and Nonylphenol Polyethoxylate-based (NPE) surfactants, and are therefore insignificant.

There will be no direct exposure to herbicides by treatments under the proposed action. Spotted owls will not be directly sprayed by herbicides because there will be no aerial application as part of the proposed action and no ground applications of herbicide would reach into the canopies of trees where spotted owls nest or roost.

Marbled Murrelet

The Service concurs with the GPNF/CRGNSA determination of “may affect, not likely to adversely affect” for the marbled murrelet (murrelet) for the proposed action. This concurrence is based on the timing and location of invasive plant treatment activities and on the results of the SERA risk assessments.

Manual, Mechanical, and Restoration Treatments

The Service completed a review of scientific literature in 2003 relative to the effects of sound exposure to the murrelet (U.S. Fish and Wildlife Service 2003). The results of that review concluded that the effects of sound from heavy equipment and motorized tools were insignificant at distances greater than 35 yd, and that the effects of sound from chainsaws were insignificant at distances greater than 45 yd for murrelets in the early breeding season.

Treatments will be conducted after August 5 and before April 1. Treatments may occur between April 1 and August 5 if they occur outside disturbance distances (greater than 45 yd for chainsaws and 35 yd for heavy equipment and motorized tools) or if the activities are within ambient levels of sound and human presence. Activities within suitable habitat will take place between 2 hours after sunrise and 2 hours before sunset from August 6 to September 15. After August 5, approximately 70 percent of murrelet chicks have fledged and left the area and for those chicks remaining, the vast majority of meals are delivered early in the morning and at dusk. Therefore, the Service considers that effects to murrelets from the proposed action are discountable because activities are extremely unlikely to overlap with murrelet feedings and will not significantly disrupt normal behaviors.

Herbicide Treatments

Murrelets feed on marine fish, which will not be exposed to herbicides or NPE from control of invasive plants on the GPNF/CRGNSA. However, some murrelets have been reported to feed upon some freshwater fish (Carter and Sealy 1986). Therefore, in order to account for the possibility of exposure due to eating freshwater fish, a scenario involving the consumption of contaminated fish was analyzed. The potential for the herbicides to adversely affect murrelets was determined using quantitative estimates of exposure from worst-case scenarios from the SERA risk assessments conducted for the U.S. Forest Service. The dose estimates for fish-eating birds were calculated using herbicide or NPE concentrations in fish that have been contaminated by an accidental spill of 200 gallons into a small pond. For chronic exposures, the assessments used a scenario where the bird consumes fish from water contaminated by an accidental spill over a lifetime.

The results of these exposure scenarios indicate that herbicides and NPE surfactant do not pose a risk to birds from eating contaminated fish. All expected doses to fish-eating birds for all herbicides and NPE are well below any known NOAEL. According to the assessments, even if a murrelet fed for a lifetime upon fresh-water fish that had been contaminated by an accidental spill of herbicide, they would not receive a dose that exceeds any known NOAEL, and therefore effects to murrelets from exposure to herbicides are insignificant.

There will be no direct exposure to herbicides by treatments under the proposed action. Murrelets will not be directly sprayed by herbicides because there will be no aerial application as part of the proposed action and no ground applications of herbicide would reach into the canopies of trees where murrelets nest.

Bald Eagle

The bald eagle was removed from the Federal List of Threatened and Endangered Wildlife, effective August 8, 2007. Given that the proposed action will be implemented after that date, consultation under section 7(a)2 of the Act is not required. We have therefore not provided concurrence on the GPNF/CRGNSA “may affect, not likely to adversely affect” determination for the bald eagle.

Bull Trout

The Service concurs with the GPNF/CRGNSA determination of “may affect, not likely to adversely affect” for the list of 51 treatment sites submitted for concurrence (Enclosure 2). This concurrence is based on the location of invasive plant treatment activities and the expected effectiveness of project design criteria to prevent water quality contamination.

The Service evaluated the list of 51 treatment sites submitted for concurrence (Enclosure 2). Of the 51 sites evaluated, 19 sites occur within bull trout subwatersheds in the upper Lewis River basin. For the purpose of analyzing the proximity of treatment areas to bull trout habitat, we used a Geographic Information System to map a 50 meter buffer along bull trout streams to

approximate the 150-ft aquatic influence zone identified by the GPNF/CRGNSA. We then overlaid the map of invasive plant treatment sites created by the GPNF/CRGNSA with the stream buffers to identify the locations where treatment areas overlap the aquatic influence zones. None of the invasive plant treatment sites listed in Enclosure 2 occur within aquatic influence zones adjacent to bull trout habitat. The protective riparian buffers, minimization measures, and restricted application methods proposed by the GPNF/CRGNSA are expected to prevent herbicide and/or sediment exposure to bull trout. Potential adverse effects to bull trout associated with invasive plant treatment sites identified in Enclosure 2 are not anticipated, therefore effects to bull trout associated with these proposed treatments are considered to be insignificant.

Conclusion

This concludes informal consultation in accordance with the Act (50 CFR 402.13). This action should be re-analyzed if new information reveals effects of the action that may affect listed species or designated critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to a listed species or designated critical habitat that was not considered in this consultation; and/or, if a new species or critical habitat is designated that may be affected by this project.

The Service appreciates your efforts to protect listed species and the habitats on which they depend while meeting your land management needs. If you have any questions regarding this letter or your responsibilities under the Act, please contact Vince Harke at (360) 753-9529 or Marc Whisler at (360) 753-4410, of my staff.

Sincerely,

/s/ 10/09/2007 Marc Whisler

Ken S. Berg, Manager
Western Washington Fish and Wildlife Office

Enclosures:

- (1) Project Design Criteria
- (2) Invasive Plant Treatment Sites

cc:

Gifford Pinchot National Forest, Vancouver, WA (D. Perez)
Columbia River Gorge National Scenic Area, Hood River, OR (C. Fiedler)

LITERATURE CITED

Carter, H.R. and S.G. Sealey. 1986. Year-round use of coastal lakes by marbled murrelets. *Condor* 88: 473-477.

U.S. Fish and Wildlife Service. 2003. Biological Opinion and letter of concurrence for effects to bald eagles, marbled murrelets, northern spotted owls, bull trout, and designated critical habitat for marbled murrelets and northern spotted owls from Olympic National Forest program of activities for August 5, 2003, to December 31, 2008. (FWS Reference: 1-3-03-F-0833).

Enclosure 1. Project Design Criteria (PDC) for the GPNF/CRGNSA invasive plant treatment program.

PDC Reference	Design Criteria	Purpose of PDC	Source of PDC
A	<i>Pre-Project Planning</i>		
A1	Prior to treatment, confirm species/habitats of local interest, watershed and aquatic resources of concern (e.g. hydric soils, streams, lakes, roadside treatment areas with higher potential to deliver herbicide, municipal watersheds, domestic water sources), places where people gather, and range allotment conditions.	Ensure project is implemented appropriately.	This approach follows several previous NEPA documents. Pre-project planning also discussed in the previous section.
B	<i>Coordination with Other Landowners/Agencies</i>		
B1	Work with owners and managers of neighboring lands to respond to invasive plants that straddle multiple ownerships. Coordinate treatments within 150 ft of Forest boundaries, including lands over which the Forest has right-of-way easements, with adjacent landowners.	To ensure that neighbors are fully informed about nearby herbicide use and to increase the effectiveness of treatments on multiple ownerships.	The distance of 150 ft was selected because it approximates the Aquatic Influence Zone for fish bearing streams.
B2	Coordinate herbicide use within 1000 ft (slope distance) of known water intakes with the water user or manager.	To ensure that neighbors are fully informed about nearby herbicide use.	The distance of 1000 ft was selected to respond to public concern. Herbicide use as proposed for this project would not contaminate drinking water supplies.
B3	Coordinate herbicide use with Municipal Water boards. Herbicide use or application method may be excluded or limited in some areas.	To ensure that neighbors are fully informed about nearby herbicide use and standards for municipal watersheds are met.	1990 Gifford Pinchot National Forest and existing municipal agreements.
C	<i>To Prevent the Spread of Invasive Plants During Treatment Activities</i>		
C1	Ensure vehicles and equipment (including personal protective clothing) do not transport invasive plant materials.	To prevent the spread of invasive plants during treatment activities	Common measure.
D	<i>Wilderness Areas</i> ¹		
D1	No cultural, mechanical or motorized treatments would occur in Wilderness areas.	To maintain Wilderness character and meet environmental standards.	Wilderness Act, 1990 Gifford Pinchot National Forest Plan
D2	Choose minimum impact treatment methods.	To maintain Wilderness values (e.g. solitude, unimpeded natural processes) and comply with environmental laws and policies.	Wilderness Act, 1990 Gifford Pinchot National Forest Plan
E	<i>There are no Design Features under “E”.</i>		

¹ Invasive plant eradication within Wilderness areas meets the “no impact” intent of the Wilderness Act and associated land use policies.

PDC Reference	Design Criteria	Purpose of PDC	Source of PDC
<i>F</i>	<i>Herbicide Applications</i>		
F1	Herbicides would be used in accordance with label instructions, except where more restrictive measures are required as described below. Herbicide applications would only treat the minimum area necessary to meet site objectives. Herbicide formulations would be limited to those containing one or more of the following 10 active ingredients: chlorsulfuron, clopyralid, glyphosate, imazapic, imazapyr, metsulfuron methyl, picloram, sethoxydim, sulfometuron methyl, and triclopyr. Herbicide application methods include wicking, wiping, injection, spot, and broadcast, as permitted by the product label and these Project Design Criteria. The use of triclopyr is limited to spot and hand/selective methods. Herbicide carriers (solvents) are limited to water and/or specifically labeled vegetable oil.	To limit potential adverse effects on people and the environment.	Standard 16, 2005 R6 ROD; Pesticide Use Handbook 2109.14
F2	Herbicide use would comply with standards in the Pacific Northwest Regional Invasive Plant Program – Preventing and Managing Invasive Plants FEIS (2005), including standards on herbicide selection, restrictions on broadcast use of some herbicides, tank mixing, licensed applicators, and use of adjuvants, surfactants and other additives. See Appendix B for tank mixture analysis.	To limit potential adverse effects on people and the environment.	2005 R6 ROD Treatment Standards (see Chapter 1).
F3	POEA surfactants, urea ammonium nitrate or ammonium sulfate would not be used in applications within 150 ft of surface water, wetlands or on roadside treatment areas having high potential to deliver herbicide.	To protect aquatic organisms.	The distance of 150 ft was selected because it is wider than the largest buffer and approximates the Aquatic Influence Zone for fish bearing streams.
F4	Lowest effective label rates would be used for each given situation. In no case would broadcast applications of herbicide or surfactant exceed typical label rates. NPE would never be broadcast at a rate exceeding 0.5 active ingredient per acre, and other classes of surfactants besides NPE would be favored wherever they are expected to be effective. In no case would imazapyr exceed 0.70 lbs.	To eliminate possible herbicide or surfactant exposures of concern to human health, wildlife, and/or fish.	SERA Risks Assessments, Appendix Q of the R6 2005 FEIS
F5	Herbicide applications would occur when wind velocity is between two and eight miles per hour. During application, weather conditions would be monitored periodically by trained personnel.	To ensure proper application of herbicide and reduce drift.	These restrictions are typical so that herbicide use is avoided during inversions or windy conditions.

PDC Reference	Design Criteria	Purpose of PDC	Source of PDC
F6	To minimize herbicide application drift during broadcast operations, use low nozzle pressure; apply as a coarse spray, and use nozzles designed for herbicide application that do not produce a fine droplet spray, e.g., nozzle diameter to produce a median droplet diameter of 500-800 microns.	To ensure proper application of herbicide and reduce drift.	These are typical measures to reduce drift. The minimum droplet size of 500 microns was selected because this size is modeled to eliminate adverse effects to non-target vegetation 100 ft or further from broadcast sites (see Chapter 3.2 of GPNF/CRGNSA DEIS for details).
<p><i>G Herbicide Transportation and Handling Safety/Spill Prevention and Containment</i></p> <p>An <i>Herbicide Transportation and Handling Safety/Spill Response Plan</i> would be the responsibility of the herbicide applicator. At a minimum the plan would:</p> <ul style="list-style-type: none"> ✓ Address spill prevention and containment. ✓ Estimate and limit the daily quantity of herbicides to be transported to treatment sites. ✓ Require that impervious material be placed beneath mixing areas in such a manner as to contain small spills associated with mixing/refilling. ✓ Require a spill cleanup kit be readily available for herbicide transportation, storage and application (minimum FOSS Spill Tote Universal or equivalent). ✓ Outline reporting procedures, including reporting spills to the appropriate regulatory agency. ✓ Ensure applicators are trained in safe handling and transportation procedures and spill cleanup. ✓ Require that equipment used in herbicide storage, transportation and handling are maintained in a leak proof condition. ✓ Address transportation routes so that traffic, domestic water sources, and blind curves are avoided to the extent possible. ✓ Specify conditions under which guide vehicles would be required. ✓ Specify mixing and loading locations away from water bodies so that accidental spills do not contaminate surface waters. ✓ Require that spray tanks be mixed or washed further than 150 ft of surface water. ✓ Ensure safe disposal of herbicide containers. ✓ Identify sites that may only be reached by water travel and limit the amount of herbicide that may be transported by watercraft. 		To reduce likelihood of spills and contain any spills.	FSH 2109.14, Bonneville Power Administration Biological Assessment, Buckhead Knotweed Project, Willamette NF Biological Assessment
<i>H</i>	<i>Soils, Water and Aquatic Ecosystems</i>		
H1	<p>Herbicide use buffers have been established for perennial and wet intermittent streams; dry streams; and lakes and wetlands. These buffers are depicted in the Tables 5, 6, and 7 below. Buffers vary by herbicide ingredient and application method.</p> <p>Tank mixtures would apply the largest buffer as indicated for any of the herbicides in the mixture.</p>	<p>To reduce likelihood that herbicides would enter surface waters in concentrations of concern.</p> <p>Comply with R6 2005 ROD Standards 19 and 20.</p>	<p>Buffers are based on label advisories, and SERA risk assessments. Buffer distances are based on the Berg's 2004 study of broadcast drift and run off to streams, along with Washington State Dept. of Agriculture's 2003-2005 monitoring results.</p>

PDC Reference	Design Criteria	Purpose of PDC	Source of PDC
H2	<p>The following treatment methods are shown in order of preference (if effective and practical), within roadside treatment areas having high risk of herbicide delivery and aquatic influence areas, especially adjacent to fish bearing streams:</p> <p>(1) Manual methods (e.g., hand pulling). (2) Application of clopyralid, imazapic, and metsulfuron methyl, aquatic glyphosate, aquatic triclopyr, aquatic imazapyr. (3) Application of chlorsulfuron, imazapyr, sulfometuron methyl. (4) Application of glyphosate, triclopyr, picloram, and sethoxydim (see H3, picloram on non-aquatic triclopyr would not be used on roadside treatment areas that have a high risk of herbicide delivery).</p>	<p>To protect aquatic organisms by favoring lower risk methods where effective.</p>	<p>Herbicides were classed into low, moderate and higher risk to aquatic organisms based on SERA Risk Assessments. Lower risk herbicides are preferred where effective. Non-herbicide, manual methods have the least potential for impact, therefore they would be preferred.</p>
H3	<p>No use of picloram or triclopyr BEE and no broadcast of any herbicide on roadside treatment areas that have a high risk of herbicide delivery to surface waters (see Appendix A for map and list of these roads).</p>	<p>To ensure herbicide is not delivered to streams in concentrations that exceed levels of concern.</p>	<p>SERA Risk Assessments, R6 2005 FEIS Fisheries Biological Assessment Extra caution is warranted on the Gifford Pinchot National Forest and Columbia River Gorge National Scenic Area (Washington side) because of the many aquatic Species of Local Interest in Forest streams.</p>
H4	<p>Aquatic labeled herbicides or herbicides associated with lower risk to aquatic organisms would be applied using spot or hand/selective methods within 15 ft of the edge of a wet roadside ditch. For treatments of target vegetation emerging out of the wet roadside ditch only aquatic labeled herbicides would be used.</p>	<p>To ensure herbicide is not delivered to streams in concentrations that exceed levels of concern.</p>	<p>SERA Risk Assessments R6 2005 FEIS and Fisheries Biological Assessment BPA Columbia River Biological Opinion Extra caution is warranted on the Gifford Pinchot National Forest and Columbia River Gorge National Scenic Area (Washington side) because of the many aquatic species of local interest in Forest streams.</p>
H5	<p>Vehicles (including all terrain vehicles) used to access or implement invasive plant projects, would remain on roadways, trails, parking areas or other previously disturbed areas to prevent damage to riparian vegetation and soil, and potential degradation of water quality and aquatic habitat.</p>	<p>To protect riparian and aquatic habitats.</p>	<p>BPA Columbia River Biological Opinion</p>
H6	<p>Avoid use of clopyralid on high-porosity soils (coarser than loamy sand).</p>	<p>To avoid leaching/ground water contamination.</p>	<p>Label advisory.</p>
H7	<p>Avoid use of chlorsulfuron on soils with high clay content (finer than loam).</p>	<p>To avoid excessive herbicide runoff.</p>	<p>Label advisory.</p>

PDC Reference	Design Criteria	Purpose of PDC	Source of PDC
H8	Avoid use of picloram on shallow or coarse soils (coarser than loam.) No more than one application of picloram would be made within a two-year period, except to treat areas missed during initial application.	To reduce the potential for picloram to enter surface and/or ground water and/or accumulate in the soil. Picloram has the highest potential to impact organisms in soil and water, and tends to be more persistent than the other herbicides.	SERA Risk Assessment. Based on quantitative estimate of risk from worst-case scenario and uncertainty
H9	Avoid use of sulfometuron methyl on shallow or coarse soils (coarser than loam.) No more than one application of sulfometuron methyl would be made within a one-year period, except to treat areas missed during initial application.	To reduce the potential for sulfometuron methyl accumulation in the soil. Sulfometuron methyl has some potential to impact soil and water organisms and is second most persistent.	SERA Risk Assessments. Based on quantitative estimate of risk from worst-case scenario and uncertainty.
H10	Lakes and Ponds – No more than half the perimeter or 50 percent of the vegetative cover or 10 contiguous acres around a lake or pond would be treated with herbicides in any 30-day period.	To reduce exposure to herbicides by providing some untreated areas for some organisms to use.	SERA Risk Assessments. Based on quantitative estimate of risk from worst-case scenario and uncertainty regarding effects to reptiles and amphibians.
H11	Wetland vegetation would be treated when soils are driest. If herbicide treatment is necessary for emergent target plants when soils are wet, use aquatic labeled herbicides. Favor hand/selective treatment methods where effective and practical.	To reduce exposure to herbicides by providing some untreated areas for some organisms to use.	SERA Risk Assessments. Reduces exposure to herbicides by providing untreated areas for organisms to use. Abates risks associated with worst-case models for treatment of emergent vegetation.
H12	Broadcast spraying would not occur within 50 ft of wells. Follow label guidance relative to water contamination.	Safe drinking water.	Label advisories and state drinking water regulations.
H13	With the exception of hand/select methods, herbicides would be applied at typical (or lower) rates within Aquatic Influence Zones.	To ensure herbicide exposures are below thresholds of concern for aquatic ecosystems.	SERA Risk Assessments, Biological Assessment
H14	Treatments above bankfull, within the aquatic influence zone, would not exceed 10 acres along any 1.5 mile of stream reach within a 6 th field subwatershed in any given year. In addition, treatments below bankfull would not exceed 7 acres total within a 6 th field subwatershed in any given year.	Limits the extent of treatment within the Aquatic Influence Zone so that adverse effects are within the scope of analysis.	Based on SERA risk assessment worksheets and emergent vegetation analysis.
H16	Plan and schedule project activities to avoid disturbance of spawning fish or damage to redds.	Minimize adverse impacts within waterbodies.	Memorandum of Understanding between WDFW and USDA Forest Service, January 2005
H17	Limit the numbers of people on any one site at any one time while treating areas within 150 ft of creeks.	To minimize trampling and protect riparian and aquatic habitats.	The distance of 150 ft was selected because it approximates the Aquatic Influence Zone for fish bearing streams.

PDC Reference	Design Criteria	Purpose of PDC	Source of PDC
H18	Fueling of gas-powered equipment with gas tanks larger than 5 gal. would not occur within 150 ft of surface waters. Fueling of gas-powered equipment with gas tanks smaller than 5 gal. would not occur within 25 ft of any surface waters.	To protect riparian and aquatic habitats.	The distance of 150 ft was selected because it approximates the Aquatic Influence Zone for fish bearing streams. Filling of smaller tanks has inherently less risk.
J	<i>Wildlife Species of Local Interest</i>		
J1	Bald Eagle		
J1a	Treatment of areas within 0.25 mile, or 0.50 mile line-of-sight, of bald eagle nests would be timed to occur outside the nesting season of January 1 to August 31, unless treatment activity is within ambient levels of noise and human presence (as determined by a local specialist). Occupancy of nest sites (i.e. whether it is active or not) would be determined each year prior to treatments.	To minimize disturbance to nesting bald eagles and protect eggs and nestlings	Bald Eagle Management Guidelines for OR-WA (Anonymous); U.S. Fish and Wildlife Service 2003, p. 9
J1b	Noise-producing activity above ambient levels would not occur between October 31 and March 31 near known winter roosts and concentrated foraging areas. Disturbance to daytime winter foraging areas would be avoided.	To minimize disturbance and reduce energy demands during stressful winter season	Bald Eagle Management Guidelines for OR-WA (Anonymous); Gifford Pinchot National Forest Programmatic BA (USDA Forest Service 2001,)
J2	Spotted Owl		
	Chainsaw use within 65 yd, and mower or heavy equipment use within 35 yd, of any nest site, activity center, or un-surveyed suitable habitat will be timed to occur outside the early nesting season of March 1 to June 30, unless treatment activity is within ambient levels of noise and human presence (as determined by a local specialist). There is no seasonal restriction on the use of roadside broadcast sprayers.	To minimize disturbance to nesting spotted owls and protect eggs and nestlings	Gifford Pinchot National Forest Programmatic BA (USDA Forest Service 2001)
J3	Marbled Murrelet		
J3a	Chainsaw or motorized tool use within 45 yd, and mower or heavy equipment use within 35 yd of any known occupied site or un-surveyed suitable habitat will be timed to occur outside April 1 to August 5, unless treatment activity is within ambient levels of noise and human presence (as determined by a local specialist). There is no seasonal restriction on the use of roadside broadcast sprayers.	To minimize disturbance to nesting marbled murrelets and protect eggs and nestlings	Gifford Pinchot National Forest Programmatic BA (USDA Forest Service 2001)
J3b	After August 5 and before April 1, activities generating noise above 92 dB may occur within the disturbance distances listed above, but must still be conducted between 2 hours after sunrise and 2 hours before sunset.	To minimize disturbance to marbled murrelets returning to nest tree during the late breeding season.	Gifford Pinchot National Forest Programmatic BA (USDA Forest Service 2001)

Table 5. Perennial and wet intermittent stream buffers.

Herbicide	Perennial and Wet Intermittent Stream Buffers		
	Broadcast (ft)	Spot (ft)	Hand/ Select (ft)
Chlorsulfuron	100	50	Bankfull
Clopyralid	100	15	Bankfull
Glyphosate	100	50	50
<i>Glyphosate (Aquatic Formula)</i>	50	No buffer**	No buffer
Imazapic	100	15	Bankfull
Imazapyr	100	50	Bankfull
<i>Imazapyr (Aquatic Formula)</i>	50	No buffer	No buffer
Metsulfuron Methyl	100	15	Bankfull
Picloram	100	50	50
Sethoxydim	100	50	50
Sulfometuron Methyl	100	50	Bankfull
Triclopyr-BEE	None Allowed	150	150
Triclopyr-TEA (Aquatic Formula)	None Allowed	15	No buffer

**No buffer means that treatment may occur anywhere across the stream channel where target vegetation exists including backwater channels, braided streams, floodplains, etc even when water is present.

Table 6. Buffers for streams that are dry at the time of treatment.

Herbicide	Buffers For Streams That Are Dry At The Time Of Treatment		
	Broadcast (ft)	Spot (ft)	Hand/ Select (ft)
Chlorsulfuron	50	15	Bankfull
Clopyralid	50	Bankfull	No buffer
Glyphosate	100	50	50
Glyphosate (Aquatic Formulation)	50	No buffer	No buffer
Imazapic	50	Bankfull	No buffer
Imazapyr	50	15	Bankfull
Imazapyr (Aquatic Formulation)	50	No buffer	No buffer
Metsulfuron Methyl	50	Bankfull	No buffer
Picloram	100	50	50
Sethoxydim	100	50	50
Sulfometuron Methyl	50	15	Bankfull
Triclopyr-BEE	None Allowed	150	150
Triclopyr-TEA (Aquatic Formula)	None Allowed	15	No buffer

**No buffer means that treatment may occur anywhere across the stream channel where target vegetation exists including backwater channels, braided streams, floodplains, etc even when water is present.

Table 7. Buffers for wetlands, high water table areas, lakes and ponds.

Herbicide	Wetlands, High Water Table Areas, Lakes and Ponds		
	Broadcast (ft)	Spot (ft)	Hand/ Select (ft)
Chlorsulfuron	100	50	Water's Edge
Clopyralid	100	15	Water's Edge
Glyphosate	100	50	50
Glyphosate (Aquatic Formula)	50**	No buffer	No buffer
Imazapic	100	15	Water's Edge
Imazapyr (Aquatic Formula)	50**	No buffer	No buffer
Imazapyr	100	50	Water's Edge
Metsulfuron Methyl	100	15	Water's Edge
Picloram	100	50	50
Sethoxydim	100	50	50
Sulfometuron Methyl	100	50	Water's Edge
Triclopyr-BEE	None Allowed	150	150
Triclopyr-TEA (Aquatic Formula)	None Allowed	15	No buffer

** If wetland, pond or lake is dry, there is no buffer. No buffer means that treatment may occur anywhere across the stream channel where target vegetation exists including backwater channels, braided streams, and floodplains.

Enclosure 2 – Invasive Plant Treatment Sites Evaluated in this Letter of Concurrence.

Table 1. Gifford Pinchot NF and CRGNSA, WA side - Treatment Areas outside of the 100 ft buffer of streams with Federally-listed fish			
TREATMENT_ID	SITE_DESCRIPTION	TREATMENT_ID	SITE_DESCRIPTION
31-01q	Quarry	33-11	RoadPlus
31-08q	Quarry	33-11q	Quarry
31-08r2	CampDispersed	33-11r1	Campground
31-08r3	Parking	33-11r3	Parking
31-09q	Quarry	33-12q	Quarry
31-09qa	Quarry	33-12r1	Campground
31-09r2	CampDispersed	33-12r3	Parking
31-10q	Quarry	33-12r4	Viewpoint
31-10qa	Quarry	35-13q	Quarry
31-10r1	Campground	35-14m	Meadow
31-10r3	Parking	35-14m2	Meadow
31-10r4	Viewpoint	35-14p	Plantation
31-19q	Quarry	35-14q	Quarry
33-03q	Quarry	35-14qa	Quarry
33-03qa	Quarry	35-14r1	Campground
33-05	RoadPlus	35-14r3	Parking
33-05q	Quarry	35-14r4	Viewpoint
33-05qa	Quarry	35-16qa	Quarry
33-05r2	CampDispersed	35-16r4	Viewpoint
33-05r3	Parking	35-17q	Quarry
33-06q	Quarry	35-17qa	Quarry
33-06qa	Quarry	35-18q	Quarry
33-07m	Meadow	35-18r3	Parking
33-07q	Quarry	CRGNSA sites outside of 100 foot buffer	
33-07r0	Admin	Portions of 22-09 Burdoin/Catherine/Major Cks	Forest
33-07r2	CampDispersed		
33-07r3	Parking		
33-07r4	Viewpoint		
Source feature class: ListedFish.mdb\TA_gp_outside100ft (qryTA_gpWin100ft_switch)			

Table 2. Gifford Pinchot NF and CRGNSA, WA side - Treatment Areas entirely outside of subwatersheds containing Federally-listed fish – determined as No Effect to ESA Fish and Designated Critical Habitat			
TREATMENT_ID	SITE_DESCRIPTION	TREATMENT_ID	SITE_DESCRIPTION
31-08qa	Quarry	33-05m4	Meadow
31-09r1	Campground	33-05p1	Plantation
31-19qa	Quarry	33-05p2	Plantation
31-19r2	CampDispersed	33-05r0	Admin
33-04	RoadPlus	33-05r1	Campground
33-04m1	Meadow	33-05r4	Viewpoint
33-04p1	Plantation	33-11m1	Meadow
33-04q	Quarry	33-11qa	Quarry
33-04r1	Campground	33-11r2	CampDispersed
33-04r3	Parking	33-12qa	Quarry
33-04r4	Viewpoint	35-14m1	Meadow
33-05m1	Meadow	35-14m3	Meadow
33-05m3	Meadow	35-17r1	Campground
CRGNSA sites outside ESA fish distribution			
22-02 Mount Pleasant	Clearing	22-15 South BZ	Clearing
22-14 Wishram	Grassland		
Source Feature Class: ListedFish.mdb\TA_gpOutsideESAhuc6			