

United States Government

Department of Energy
Bonneville Power Administration

memorandum

DATE: March 9, 2005

REPLY TO
ATTN OF: KEP-4

SUBJECT: Supplement Analysis for the Transmission System Vegetation Management Program FEIS
(DOE/EIS-0285/SA-245) Big Eddy – Ostrander **Project #: V-R-04/03**

to: Elizabeth Johnson
Natural Resource Specialist - TFN/The Dalles

Proposed Action: Vegetation Management for portion of the Big Eddy - Ostrander 230-500 kV transmission line located from tower structure 1/1 to 39/3.

Location: Project location is within Wasco and Hood River County, Oregon and is within the BPA Redmond Region.

Proposed by: Bonneville Power Administration (BPA).

Description of the Proposal: BPA proposes to clear targeted vegetation within the right-of-way and along access roads and remove danger trees outside the right-of-way where appropriate. The project objective is to remove vegetation that may impede the operation and maintenance of the subject transmission line. See Section 1.1 through 1.4 of the attached checklists for a complete description of the proposed action.

Analysis: The subject corridor traverses a mixture of private, and public (State and County) owned lands. Coordination has occurred with the various landowners. Applicable findings and mitigation measures are discussed below.

Water Resources:

Specialized treatment zones/mitigation for wetlands, perennial & intermittent streams:

Specialized treatment zones include vegetation located within 35 feet on both sides of stream/wetlands. Vegetation management methods include: manual, mechanical, spot and localized herbicide. Herbicide treatments will include non-toxic formulations and slightly toxic (to aquatic species) formulations of triclopyr (Garlon 3A), which may be prescribed for cut-stump, basal-stem, stem-injection, and spot-foliar treatments (localized).

No mechanical treatments within 35 feet of streams or wetlands except along access roads and tower sites.

Irrigation Source, Wells, or Springs:

See Section 3.2 of the attached Checklist for a complete listing. Herbicides will not be applied within 165 ft. of any irrigation water source, well, and spring.

Specialized treatment zones for streams containing listed threatened and endangered species:

Specialized treatment zones include vegetation located within 100 feet on both sides of a stream with ESA listed species. Vegetation management methods include manual, mechanical, spot and localized herbicide. Herbicide used within 100 feet of the waters edge will be formulations triclopyr (Garlon 3A) for cut-stump, basal-stem, stem-injection, and spot-foliar treatments (localized). No highly toxic or very highly toxic herbicides (to fish) will be used within 400 feet of a T&E stream. Mechanical treatment will be used within 50 feet of listed streams except along access roads and tower sites. A 25-foot no-herbicide width may be used if one of the following conditions applies: (1) recommended by Mt. Hood NF, Hood River Ranger District, Fisheries Biologist for a particular water body, or (2) variable weather conditions exist that may cause drift uncertainty.

Threatened and Endangered Species/Essential Fish Habitat:

Pursuant to its obligations under the Endangered Species Act, BPA has made a determination of whether its proposed project will have any effects on any listed species. A species list was received from the United States Fish and Wildlife Service (USFWS) on November 24 2004, identifying threatened and endangered species and Critical Habitat Units potentially occurring in the project area. In addition a review of species under the jurisdiction of NOAA Fisheries was conducted. A biological evaluation/assessment were prepared in cooperation with the USFS-Mount Hood National Forest Service-Hood River Ranger District for the potential impacts/mitigation/avoidance measures for Threatene, Endangered and Region 6 Sensitive species. A determination of "No Effect" was made for Northern Spotted Owl, Northern Spotted Owl critical habitat and Chinook salmon (Lower Columbia River). A determination of "No Effect" was made for Essential Fish Habitat waters that occur in the project area. A determination of "May Affect Not Likely to Adversely Affect" was made for Steelhead (Lower/Middle Columbia River), Bull trout (Columbia River), and Coho salmon (Southwest WA/Lower Columbia River) for the project action area. BPA initiated informal consultation with the services on January 10, 2005. BPA received concurrence letters from NOAA Fisheries on January 26, 2005 and from USFWS on February 15, 2005.

No additional conservation measures were received from the services.

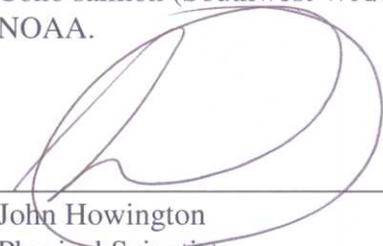
Cultural Resources:

No cultural resources were identified within the project area.

Confederated Tribes of Warm Springs – A copy of this checklist will be provided to the offices of Natural Resources, Fish and Wildlife, and cultural/traditional uses. If a site is discovered during the course of vegetation control, work will be stopped in the vicinity and the appropriate tribe, the BPA Environmental Specialist, and the BPA archeologist will be contacted.

Findings: This Supplement Analysis finds that (1) the proposed actions are substantially consistent with the Transmission System Vegetation Management Program FEIS (DOE/EIS-0285) and ROD, and; (2) there are no new circumstances or information relevant to environmental concerns and bearing on the proposed actions or their impacts. Therefore, no further NEPA documentation is required.

This Supplement Analysis also finds the proposed actions will not affect Northern Spotted Owl, Northern Spotted Owl critical habitat and Chinook salmon (Lower Columbia River) threatened or endangered. However our findings did reveal that the proposed action may affect not likely to adversely affect Steelhead (Lower/Middle Columbia River), Bull trout (Columbia River), and Coho salmon (Southwest WA/Lower Columbia River) with concurrence from USFW and NOAA.



John Howington
Physical Scientist

CONCUR 
Thomas C. McKinney
NEPA Compliance Officer

DATE: 3/9/2005

Attachments:

cc: Daina L. Bambe, District Ranger, Hood River Ranger District, Mt. Hood NF, 6780 Hwy 35,
Mt.Hood-Parkdale, OR 97031

bcc:

L. Croff – KEC-4

T. McKinney – KEC-4

J. Meyer – KEP-4

F. Walasavage – KEP/Celilo

J. Sharpe – KEPR-4

H. Adams – LC-7

J. Hilliard Creecy – T-DITT2

M. Johnson – TF/DOB-1

R. Melzer – TFR/Redmond

M. Oakland – TFRF/Redmond

Environmental File – KEC-4

Official File – KEP (EQ-14)

Vegetation Management Checklist
Big Eddy – Ostrander Transmission Line Corridor 1/1-39/3

Project #: V-R-04/03

1. IDENTIFY FACILITY AND THE VEGETATION MANAGEMENT NEED

1.1 Big Eddy-Ostrander Transmission Line Corridor 1/1-39/3.

Corridor Name	Corridor Length & kV	Easement width	Miles of Treatment
Big Eddy-Ostr Big Eddy-Trout Big Eddy-Chem Big Eddy-McGl 1 & 2	39 miles 500kV Other 230 kV lines w/in corridor	Varies from 425' to 712.5' wide	Approx. 39 miles

Right-of-Way – clearing in right-of-way - Approximately 2,478 acres

Transmission Structures – clearing around structures, includes mowing & herbicide applications.

Access Road clearing - approximate miles – Approx. 17-20 miles

Reclaim (“C”) Trees - occasional

Other – Noxious weeds: See list below.

1.2 Describe the vegetation needing management.

Vegetation Types: Douglas fir, Hemlock, True Fir, Alder, Maple, Willows, Chinquapin, Wild Cherry. Vine Maple, spirea, ocean spray, and numerous other low growing shrubs and grasses.

□ Density: Medium (50 – 250 stems/per acre)

□ Noxious weeds: Listed by common name

□

Common name	Family	Scientific name
<u>Bull thistle</u>	Asteraceae	<i>Cirsium vulgare</i>
<u>Diffuse knapweed</u>	Asteraceae	<i>Centaurea diffusa</i>
<u>Meadow knapweed</u>	Asteraceae	<i>Centaurea pratensis</i>
Ragweed	Asteraceae	<i>Ambrosia artemisiifolia</i>
Rush skeletonweed	Asteraceae	<i>Chondrilla juncea</i>
<u>Scotch broom</u>	Fabaceae	<i>Cytisus scoparius</i>
Spotted knapweed	Asteraceae	<i>Centaurea maculosa</i>
Tansy ragwort	Asteraceae	<i>Senecio jacobaea</i>
Hawkweed	Asteraceae	<i>Hieracium aurantiacum</i>
Yellow starthistle	Asteraceae	<i>Centaurea solstitialis</i>

1.3 List measures taken to help promote low-growing plant communities.

Bonneville’s overall goal is to have low-growing plant communities along the rights-of-way to control the development of potentially threatening vegetation.

Tall-growing vegetation that is currently or will soon be a hazard to the line will be removed.

Vegetation that will grow tall will be selectively eliminated *before* it reaches a height or density to begin competing with low-growing species.

Desirable low-growing plants will not be disturbed unless the distance from the ground to the conductor is less than 20 feet. Only selective vegetation control methods that have little potential to harm non-target vegetation will be used.

Herbicides proposed for vegetation outside of riparian areas include: Garlon 4(Triclopyr BEE), Tordon 22K (Picloram), Trooper/Vanquish (Dicamba), Glyphosate formulations. Application methods may include broadcast, localized or spot treatment.

Riparian areas – the objective is to selectively cut & treat only tall growing vegetation within the riparian areas. Generally, most alders, cottonwood, willow, wild cherry, and big leaf maple would be cut and stump treated with herbicide to prevent resprouting. Where the transmission lines span across riparian areas and the ground-to-conductor clearance is > than 125 feet, only trees with tops within 40' to the line would be identified and selectively cut and stump treated if hardwood species. All other tall growing trees, shrubs & grasses will left intact.

Proposed herbicides to be used for vegetation control within Specialized Treatment Zones (riparian areas) both USFS and private lands include: Garlon 3A (Triclopyr TEA) and aquatic formulations of glyphosate. Widths or distances described within these zones may, at any time, be revised if mandated by court order.

To compete with future tall growing trees and enhance stream side habitat within riparian areas, native shrubs and plants such as elderberry, vine maple, ocean spray, spirea, wild rose, chinquapin, and coyote willow may be planted to recover riparian processes and functions associated with the removal of the tall growing trees. If required, a vegetation plan will be developed that is responsive to the biological and physical characteristics of the site. Planting sites may require digging, grubbing roots, scalping sod, decompacting soil, and removing existing vegetation. Work to restore the habitat with native shrubs and plants may entail the use of heavy equipment, power tools, and/or hand crew. (Note: Heavy equipment on USFS lands would be used only after additional environmental review is conducted and approved.) If handpulling of noxious weeds is required, weeds will be bagged and properly disposed.

1.4 Overall management scheme/schedule.

Description of the Proposed Action: During the summer of FY 05', BPA proposes to clear unwanted vegetation along the Big Eddy-Ostrander right-of-way (1/1-39/4), along access roads and around tower structures that may impede the operation and maintenance of the subject transmission line. All work will be in accordance with the National Electrical Safety Code and BPA Veg. Management FEIS, dated 2000. BPA plans to manage vegetation with the goal of removing tall growing vegetation that is currently or will soon become a hazard to the transmission line. (A hazard is defined as one or more branches, tops, and/or whole trees that could fall or grow into the minimum safety zone of the transmission line(s) causing an electrical arc, relay and/or outage.) BPA's overall goal is to have low-growing plant communities along the rights-of-way to control the development of potentially threatening vegetation. Hardwood trees over 1 foot tall and conifers over 5 feet tall will be cut and hardwood stumps treated with herbicides. The width of the ROW easement varies from 425 to 712.5 feet. All work will be accomplished by selective vegetation control methods (except for access roads and tower sites) to ensure that there is little potential harm to non-target vegetation and to low-growing plants. The work will provide system reliability.

From structure 38/4-39/1+200', a dense stand of alder exists that needs to be converted to low growing plant community. Treatment of this site has been minimal over the years due to USFS riparian and herbicide restrictions. The rapidly growing dense stand of alder trees has become a hazard to the conductors due to low ground clearance as well as unmanageable and safety hazard

for hand crews. Preferred treatment of this site includes cutting/mowing of alder and stump treatment w/an aquatically approved formulation of herbicide. Low growing shrubs such as vine maple may be planted to augment stand conversion.

BPA's goals for managing noxious weeds are to prevent and eradicate new invaders, and to control established infestations. The proposed action is designed to achieve these goals by implementing an integrated noxious weed management program on USFS and private lands within the transmission line corridor. The proposed action would involve one or a combination of management approaches including manual/mechanical, biological, and chemical methods to control noxious weeds. Determining which method(s) to use, when and how often, will be based on (but not limited to) the following factors: (1) Physical growth characteristics of target weeds (rhizomatous vs. tap-rooted, *etc.*); (2) seed longevity and germination; (3) infestation size; (4) relationship of the site to other infestations; (5) relationship of the site to listed species and/or proposed for listing under the ESA; (6) distance to surface water; (7) accessibility to site for equipment; (8) type and amount of use of the area by people; (9) effectiveness of treatment on the target weed; and (10) cost. Due to these various factors, one or several treatment methods may be needed in a given area annually for 5 or more years. Manual/mechanical, and biological treatments are used to the extent that they are practical, but tend to be less effective and more costly than chemical treatments. Manual/mechanical treatments have limited effectiveness because they often fail to remove noxious weed roots. This type of treatment is costly, and feasible only in small areas. Biological controls (insects) have promise as a method of noxious weed management and are currently being used by Wasco & Hood River County on private lands. However, BPA and the Counties have found that chemical (herbicide) controls are the cheapest and most effective at controlling noxious weeds.

A cooperative effort to control noxious weeds is also proposed. Currently, BPA annually contracts with Wasco and Hood River County Weed Departments to identify, survey, manage and control noxious weeds on BPA right-of-ways within the counties. To date, Hood River County's method of controlling noxious weeds on USFS lands has been minimal due to the number of acres, density of noxious weeds and herbicide restrictions. Dense stands of Scotch broom can be found along the ROW from the 34-38 mile and knapweed can be found throughout the right-of-way and along access roads and structures. On private lands, both the county and BPA typically apply herbicide to control noxious weeds within the width of the corridor.

Noxious weeds would be controlled within riparian areas. Garlon 3A (Tryclopyr TEA) is the proposed herbicide to be used for noxious weed within riparian areas on both USFS and private lands. Application methods may include localized or spot treatments. No broadcast methods would be allowed within the riparian areas.

Herbicides proposed for noxious weeds outside of riparian areas include: Garlon 4 (Tryclopyr BEE), Tordon 22K (Picloram), Trooper/Vanquish (Dicamba), Glyphosate formulations. Application methods would include localized or spot treatment and broadcast on monocultures of non-desirable species.

Tordon is being considered since it is one of the most effective products known to control scotch broom and other broadleaf species. Due to the potential of this herbicide to leach into ground and surface water, the herbicide will not be used on vegetation growing in soils which are highly permeable or possess little organic content (e.g. sandy, gravelly, alkaline soils).

Initial entry –

The purpose of the vegetation management on the right-of-way is to clear tall growing vegetation and establish a self-sustaining low growing plant community. Removal of this vegetation will

ensure continued reliability and stability of the transmission line corridor. Vegetation to be cut includes trees/brush (conifers& hardwoods) that is currently or will soon pose a hazard to the lines. Hardwood trees stumps and re-sprouts will be treated with herbicides (spot and localized treatments) to ensure that the roots are killed preventing new sprouts. Method of application and herbicide will vary according to location and proximity to water resources (see section 3.1). Contractors will selectively eliminate tall growing vegetation before it reaches a height or density to begin competing with low-growing vegetation. Areas may be replanted or reseeded with low-growing vegetation if there is limited vegetation to re-establish the site. Desirable low-growing plants will not be disturbed on the right-of-way by using selective control methods and by keeping trucks and equipment on designated access roads and trails. All work will take place in existing rights-of-ways. Slash and debris will be mulched or lopped and scattered.

Access roads and tower sites will be treated using selective and non-selective methods including hand cutting, mowing, and herbicide spot, localized and broadcast applications including cut stubble and localized granular treatments.

The selection of methods and herbicides for noxious weed management will be based on their location and proximity to water resources. Treatment will be limited to spot, localized and ground broadcast treatments (see descriptions page). Non-selective treatments using ground broadcast methods may be required in areas of high infestation (monocultures) of weeds and along access roads and tower sites. Localized Granular treatments will also be considered.

Contractor will identify and mark on plan maps any danger trees found off the right-of-way. Cutting of the danger trees will not be done until landowners have been notified and agreed to their removal.

Subsequent entry–

Due to the amount of rainfall, low ground-to-conductor clearance, density and typical growth of hardwood trees, the segment of right-of-way between 24/4-39/4 will need to be treated every 3 years until the hardwood stands are under control. The treatment cycle from 1/1-24/4 will be every 5-7 yrs. The same prescription as stated in the initial entry will apply although the amount of cutting and herbicide use will drop off with each subsequent entry as low growing plant communities take over.

BPA's specialized danger tree crew will identify and mark for removal any hazard tree off the right-of-way that is potentially unstable and could fall near or within BPA's minimum distance zones. Trees that are an imminent hazard (emergency) will be removed when identified. The danger tree crew will appraise the trees and negotiate with the USFS and private landowners on the details of falling the tree. The tree remains the property of the landowners.

Future cycles–

The vegetation management cycle between 24/4-39/4 will eventually be extended to a 5-year maintenance free interval if hardwood stands can be converted into low growing plant communities. Future entry prescriptions will be similar to the initial entry although the amount of cutting and herbicide treatment will be significantly reduced due to the in vegetation manipulation.

2. IDENTIFY SURROUNDING LAND USE AND LANDOWNERS/MANAGERS

2.1 Landowners and land uses along the corridor.

Longview Fibre – Industrial Forest lands

USFS – MT. Hood National Forest. Landownership is checkerboard from 31/2 to 39/3 between Longview Fibre and USFS.

Private/rural

Agricultural – numerous orchards occur between 1/1-6/2 and Hwy 35 – 27/1

County Lands: Hood River County & Middle Fork Irrigation District

2.2 Method for notifying right-of-way landowners and requesting information

Longview Fibre – discuss the project with Steve Hansen, Longview manager. As in the past, Steve verbally approves the method of vegetation management on the ROW that traverses thru Longview's land.

Prior to entry, BPA will work cooperatively with USFS/Tribe/Oregon Fish & Wildlife to develop a vegetation management plan. Given the TES species found in Threemile, Mill Cr. including North & South Forks, Emil, Elk, McGee, Ladd, and the East/Middle/West Fork of Hood River and the proposed critical habitat along Elk Cr., it is likely ESA consultation will be necessary. The consultation process will be coordinated between the USFS, ODF&W, Confederated Tribes of Warm Springs, BPA and other interested groups using the process outlined in the *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NOAA Fisheries 1996) with the expectation the work will be completed by summer of 2004.

Confederated Tribes of Warm Springs – A copy of this checklist will be provided to the offices of Natural Resources, Fish and Wildlife, and cultural/traditional uses. ESA consultation process will include members of the Tribes.

Oregon Dept of Fish and Wildlife – Rod French & Keith Cole will be provided a copy of the checklist for their review. Comments, recommendations, and mitigation requirements will be considered and incorporated in the vegetation management plan.

Private landowners will be sent letters 1 month in advance of commencement of work notifying them of the planned work schedule and requesting information on any wells, springs, or domestic water sources not yet identified.

2.3 Specific land owner/land use measures:

For all lands:

When using herbicides, ensure that treated areas are posted and reentry intervals are specified and enforced in accordance with label instructions.

Prevent the spread of noxious weeds by cleaning seeds from equipment used off-road and before entering USFS lands, cropland, etc.

On grazing lands where there is potential for pine needle poisoning, do not lop and scatter pine tree vegetative debris—machine-chip or haul debris off-site.

When using herbicides on grazing lands, comply with grazing restrictions as required per herbicide label.

When using herbicides near crops for consumption, comply with pesticide-free buffer zones, if any, as per label instructions.

For rights-of-way adjacent to agricultural fields, observe appropriate buffer zones necessary to ensure that no drift will affect crops.

In the following places, trees may be replaced with a low-growing species along TES streams:

Span		Landowner	Species	Replace/regulator?
21/3	21/4	USFS – W. Fork of Neal Cr.	Low growing shrubs.	Replace
24/6	25/1	Private – East Fork of Hood River	Low growing shrubs.	Replace
27/1	27/2	Private – Middle Fork of Hood River	Low growing shrubs.	Replace
36/2	36/3	USFS – Ladd Cr.	Low growing shrubs.	Replace
36/3	36/4	USFS – Redhill Cr.	Low growing shrubs.	Replace
37/1	37/2	Longview Fibre – W. Fork of Hood River	Low growing shrubs.	Replace
39/1	39/2	Elk Cr. & proposed critical habitat	Low growing shrubs.	Replace

In the following places, herbicide treated areas will be posted with reentry intervals.

Herbicide	Posting times
All herbicide application	7 days before and 30 days after throughout project area.

2.4 Existing landowner agreements (e.g. tree/brush Permits or Agreements).

Currently, veg. mgmt activities on USFS lands have been directed by the 1996 Categorical Exclusion (Cat Ex) written by the Hood River Ranger District. The Cat Ex allowed BPA to cut tall growing trees along ROW except in riparian areas. For riparian areas, BPA was allowed to cut only trees within 40’ of the conductors. No herbicides were allowed on USFS lands.

Between 22/3 and 23/2, a developed spring exists and is used by the Faulkender family. USFS have permitted the use of the spring many years ago. Another spring exists off the ROW between 24/3 and 24/4. At the request of the landowners in this area, it has been agreed that no herbicide will be used on the ROW near the springs.

Numerous orchards exist on the ROW between 1/1-6/2 and Hwy 35 & 27/1. Orchards are excluded from treatment.

Casual informal use of the right-of-way by non-owner publics:

Hunters, berry pickers, herb and medicinal plant collectors, and recreationists may occasionally use the row. The planned entry is not expected to affect their use.

2.6 Other potentially affected people, agencies, or tribes (that are not landowners/managers) that need to be notified or coordinated with.

Confederated Tribes of Warm Springs – Will request their participation, especially regarding traditional plant use, TES streams and critical habitat areas.

Oregon Dept. of Fish & Wildlife, Hood River County, Middle Fork Irrigation District.

3. IDENTIFY NATURAL RESOURCES

3.1 Water resources (streams, rivers, lakes, wetlands) that may be impacted by vegetation control activities. For each water body, the control methods and requirements or mitigation measures that will be used are described. (Note: Distances identified within the Specialized Treatment Zones may be revised if mandated by court order.)

General requirements:

Leave vegetation intact, where possible.

Under the Clean Water Act, any discharge of material (displaced soils, and in certain circumstances, vegetation debris) within a water of the U.S. may possibly be subject to fill and removal permitting by U.S. Army Corps of Engineers and the Oregon Department of State lands.

Do not permit debris from tree falling, cutting, or disposal to fall into or be placed in any watercourse, spring, pond, lake, or reservoir, unless there is approval from the appropriate authorities for stream habitat projects. For specific requirements, see Section 4.1 – Vegetation control methods.

No refueling, herbicide mixing, or washing any equipment or vehicles within 300’ of a riparian area.

THE FOLLOWING TABLE IS CONTINGENT ON BA AND USFS REVIEW

Span		Waterbody	ESA Fish & Riparian Acres Potentially Affected	Riparian Acres Proposed for Treatment	Specialized Treatment Zone Widths, ² Herbicide & application method.	Other
From	To					
2/1	2/2	Threemile Cr.	Steelhead 2.5 acres		100’ both sides. Spot/localized Garlon 3A	See #1 below. ³ Spanned Canyon > 120’
5/2	5/3	Dry Hollow Cr.		.9	35’ both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 120’
7/1	7/2	Perennial stream		.9	35’ both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150’
7/3	8/1	Whisky Gulch		.9	35’ both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150’

8/4	8/5	Intermittent Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150'
8/5	9/1	Intermittent Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150'
9/1	9/2	Perennial Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150'
9/2	9/3	Intermittent Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150'
9/3	9/4	Intermittent Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150'
9/4	10/1	Intermittent Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150'
10/1	10/2	Perennial Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150'
10/3	10/4	Perennial Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 150'
11/3	11/4	So. Fork of Mill Cr.	2.5 acres Steelhead & Coho		100' both sides. Spot/localized Garlon 3A	See #1 below. Spanned Canyon > 150'
11/4	12/1	No. Fork of Mill Cr.	2.5 acres Steelhead & Coho		100' both sides. Spot/localized Garlon 3A	See #1 below. Spanned Canyon > 150'
12/3	13/1	Perennial Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 120'
13/4	14/1	Brown Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 120'
14/1	14/3	Brown Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below.
16/3	16/4	Perennial Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 120'
16/5	17/1	Mosier Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 120'

17/1	17/2	Spring Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 120'
18/1	18/2	West Fork of Mosier Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 100'
20/5	21/1	Perennial Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 120'
21/3	21/4	West Fork of Neal Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below.
22/1	22/2	Perennial Stream		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon > 120'
22/4	23/2	Perennial stream		Manual ¹ Mechanical ¹ only.	35' both sides. Spot/localized Garlon 3A	See #2 below.
24/3	24/4	Yellow Jacket Cr., Irrigation Canal, & wetlands		Manual Mechanical only.	No herbicides – landowner agreement	See #2 below.
24/5	24/6	Wetlands		2	35' both sides. Spot/localized Garlon 3A	See #2 below.
24/6	25/1	East Fork of Hood River	Bull Trout; Coho; Steelhead 4 acres		100' both sides. Spot/localized Garlon 3A	See #1 below.
25/3	25/4	Emil	0.9		35' both sides. Spot/localized Garlon 3A	See #2 below.
25/4	25/5	Wisehart Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below.
26/3	26/4	Trout Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. ³ Spanned Canyon >130'
27/1	27/2	Middle Fork of Hood River	Coho; Steelhead; Bull Trout 1.9 acres		100' both sides. Spot/localized Garlon 3A	See #1 below.
28/2	28/3	Perennial Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon >150'

28/3	28/4	Tony Cr.	Steelhead Bull Trout 1.9 acres	1.9	100' both sides. Spot/localized Garlon 3A	See # 1 below. Spanned Canyon >150'+
29/3	29/4	Perennial Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon >150'+
29/5	30/1	Perennial Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below. Spanned Canyon >150'+
31/2	31/3	Camp Cr.	Steelhead 1.9Acres		100' both sides. Spot/localized Garlon 3A	See #1 below. Spanned Canyon >150'+
32/2	32/3	Intermittent & perennial streams		1	35' both sides. Spot/localized Garlon 3A	See #2 below.
33/1	33/2	Dry Run Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below.
33/2	33/3	Marco Cr.	Steelhead 1.9Acres		100' both sides. Spot/localized Garlon 3A	See #1 below. Spanned Canyon >130'
33/5	34/1	Tumbledown Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below.
34/1	34/2	Perennial Cr. & wetlands		1.5	35' both sides. Spot/localized Garlon 3A	See #2 below.
34/2	34/3	Intermittent Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below.
34/3	34/4	Perennial Cr. & wetlands		1.5	35' both sides. Spot/localized Garlon 3A	See #2 below.
34/4	35/1	Perennial Cr. & wetlands		1.5	35' both sides. Spot/localized Garlon 3A	See #2 below.
35/4	36/1	Redhill Cr.	Bull Trout Steelhead 1.9 acres		35' both sides. Spot/localized Garlon 3A	See #1 below.
36/1	36/2	Wetland		.5	35' both sides. Spot/localized Garlon 3A	See #2 below.
36/2	36/3	Ladd Cr.		.9	35' both sides. Spot/localized Garlon 3A	See #2 below.
37/1	37/2	West Fork of Hood River and wetlands	Steelhead Bull trout 4 acres		100' both sides. Spot/localized Garlon 3A	See #1 below.

37/2	37/3	Elk Cr. & wetlands	Steelhead 3 acres		100' both sides. Spot/localized Garlon 3A	See #1 below.
37/5	38/5	Elk Cr. & wetlands	Steelhead 1.9 acres		100' both sides. Spot/localized Garlon 3A or Rodeo®	See #1 below.
38/3	38/4	Elk Cr.	Steelhead 1.9 acres		100' both sides. Spot/localized Garlon 3A	See #1 below. Spanned Canyon >130'
39/1	39/2	Elk Cr. & wetlands	Steelhead 3 acres		100' both sides. Spot/localized Garlon 3A	See #1 below. Proposed Critical Habitat Alder Conversion necessary
			Total Acres = 35.7 Acres	Total Acres = 36.9		

¹Manual methods include: cutting trees & brush with hand and power tools such as machetes, shears, clippers, chainsaws, brush saws, or axes; and girdling by cutting a ring around the trunk of the tree. (See 4.1 for complete discussion.)

¹Mechanical methods include: Mowing, tilling, disking or plowing, chopper/shredders, walking brush controllers, feller-buncher machines, roller-choppers, and blading. Mechanical control may be carried out over large areas or be confined to smaller areas. (See 4.1 for complete discussion.)

²Herbicide methods include: application of site specific herbicides in liquid or granular form through the use of wand or broom sprayers mounted on or towed by trucks, backpack equipment containing a pressurized container with an agitation device, injection, hand wicking cut surfaces, and ground application of granular formulas. Herbicides will be mixed with water as a carrier (no oil-based carriers will be used) and may also contain a variety of additives (see attached adjuvant list) to promote saturation and adherence, to stabilize, or to enhance chemical reactions. (See 4.1 for complete discussion.)

³Spanned Canyon: Where the conductors span canyons and the conductors are greater than 38.1 m (125 ft.) vertical distance from the ground surface, the Contractor will be directed to cut only of individual trees (single tree cuts) with tops/branches encroach into the transmission corridor danger zone (40').

#1 SPECIALIZED TREATMENT ZONES/MITIGATION FOR ESA STREAMS:

Widths: Vegetation located within 100 feet on both sides of a listed stream. All widths will be surveyed and flagged prior to treatment. Width or distances measured from high water mark and may be revised if mandated by court order.

Methods allowed: Manual, mechanical, spot and localized herbicide, and biological treatments.

Herbicide: Within 100 feet of the waters edge, only formulations of triclopyr (Garlon 3A) may be prescribed for cut-stump, basal-stem, stem-injection, and spot-foliar treatments (localized). Spray

application would be prohibited when wind speeds are greater than 8 kilometers per hour (5 mph). Broadcast treatments with handgun only on access roads and tower sites. No highly toxic or very highly toxic (to fish) will be used within 400 feet of a TES stream.

Mechanical: None within 50 feet of listed streams except along access roads and tower sites.

Additional Contingency Widths: A 25-foot no-herbicide width may be used if one of the following conditions applies: (1) recommended by Mt. Hood NF, Hood River Ranger District, Fisheries Biologist for a particular water body, or (2) variable weather conditions exist that may cause drift uncertainty. The option of a contingency width is provided because little empirical toxicity data are available for aquatic organisms under field applications. However, available toxicological literature has failed to find toxic effects on aquatic organisms when applied at the approved application rates.

Water body	Herbicide	Application Technique	Specialized Treatment Zone/Widths	Other
TES Streams Threemile, North Fork & South Fork Mill Cr., Marco, Camp, Redhill Cr., East Fork, Middle Fork, & West Fork of Hood River, Tony, Elk, & McGee Creeks	Tryclopyr (Garlon 3A)	Spot, localized	100' both sides.	All Areas will be surveyed and flagged before treatment

#2. SPECIALIZED TREATMENT ZONES/MITIGATION FOR WETLANDS, PERRENIAL & INTERMITTENT STREAMS:

Widths: Vegetation located within 35 feet on both sides of stream/wetlands. All widths will be surveyed and flagged prior to treatment. Width or distances measured from high water mark and may be revised if mandated by court order.

Methods allowed: manual, mechanical, spot and localized herbicide, and biological treatments.

Herbicide: Only Non-toxic formulations (to aquatic species) of triclopyr (Garlon 3A) may be prescribed for cut-stump, basal-stem, stem-injection, and spot-foliar treatments (localized). Spray application would be prohibited when wind speeds are greater than 8 kilometers per hour (5 mph).

Mechanical: None with 35 feet of streams or wetlands except along access roads and tower sites.

Contingency Widths: 25-foot no-spray width may be used if one of the following conditions applies: (1) recommended by Mt. Hood NF, Hood River Ranger District, Fisheries Biologist for a particular water body, or (2) variable weather conditions exist that may cause drift uncertainty. The option of a contingency width is provided because little empirical toxicity data are available for aquatic organisms under field applications. However, available toxicological literature has failed to find toxic effects on aquatic organisms when applied at the approved application rates.

Water body	T&E?	Herbicide	Application Technique	Specialized Treatment Zones/Widths	Other
Creeks Streams Wetlands	No	Tryclopyr (Garlon 3A)	Spot, localized	35' both sides	All Areas will be surveyed and flagged before treatment

In all riparian areas, vegetation cut shall be treated as follows:

Where possible, larger diameter trees (greater than 10 inches diameter at breast height (DBH) may be felled within riparian areas to span streams. Prior to cutting, landowner shall be notified and agree with the direction and number of tree(s) to be fell as further permitting may be required.

Other trees that need to be felled should be felled uphill and/or parallel to the stream or water body.

A minimum of 20-foot wide gaps through this down material are required every 100 feet of the stream in order to provide for wildlife access.

Slash piles shall not be located within 50 feet slope distance of the stream.

No trees shall be felled across stream course in any area where there is obvious stream instability.

Specialized Treatment
Widths for Herbicides
Non T&E Streams

Herbicide	Ground water Advisory	Water Advisory	Highest Aquatic Toxicity Invertebrates/Vertebrates	Spot treat	Localized	Broadcast	Rates (range)
Garlon 3A Tryclopyr TEA			Practically Non Toxic	Up to edge	Up to edge	35 ft	0.25 to 3 gallons per ac.
Garlon 4 Tryclopyr BEE			Highly Toxic	35 ft	35 ft	100 ft	1 to 8 qts per acre
Glypro/Accord Glyphosate			Practically Non Toxic	35 ft	35 ft	35 ft	1.5 to 7.5 qts/acre not to exceed 8 qts/ac/yr
Tordon 22K	x	x	Moderately Toxic	35 ft	35 ft	100 ft	1 to 4 pts/ac not to exceed 2 qts/yr/ac
Vanquish	x	x	Slightly Toxic	35 ft	35 ft	100 ft	2 to 4 pts/ac not to exceed 4 pts/ac/yr

3.2 If planning to use herbicides, list locations of any known irrigation source, wells, or springs (landowners maybe able to provide this info if requested).

Springs and waterline between 22/3-Hwy 35. Spring is used by Faulkender. Other springs located to the south of this portion of transmission line corridor.

3.3 List below the areas that have Threatened or Endangered Plant or Animal Species and the name of the species, and any special measures that need to be taken due to their presence. Attach any Bas, T&E maps, or letters from US Fish and Wildlife.

Plant survey completed 10/97, no TES species found on corridor.

Span		T&E Species	Method/mitigation or avoidance measures
To	From		
2/1	2/1	ESA Listed Fish (Threemile Cr.)	See #1 Specialized treatment zones & mitigation discussion above.
11/3	11/4	ESA Listed Fish (South Fork of Mill Cr.)	See #1 Specialized treatment zones & mitigation discussion above.
11/4	12/1	ESA Listed Fish (No. Fork of Mill Cr.)	See #1 Specialized treatment zones & mitigation discussion above.
24/6	25/1	ESA Listed Fish (East Fork Hood River)	See #1 Specialized treatment zones & mitigation discussion above.
27/1	27/2	ESA Listed Fish (Middle Fork Hood River)	See #1 Specialized treatment zones & mitigation discussion above.
28/3	28/4	ESA Listed Fish (Tony Creek)	See #1 Specialized treatment zones & mitigation discussion above.
31/2	31/3	ESA Listed Fish (Camp Creek)	See #1 Specialized treatment zones & mitigation discussion above.
33/2	33/3	ESA Listed Fish (Marco Creek)	See #1 Specialized treatment zones & mitigation discussion above.
35/4	36/1	ESA Listed Fish (Redhill Creek)	See #1 Specialized treatment zones & mitigation discussion above.
37/1	37/2	ESA Listed Fish (McGee and Elk Creeks)	See #1 Specialized treatment zones & mitigation discussion above.
38/3	38/4	ESA Listed Fish (Elk Creek)	See #1 Specialized treatment zones & mitigation discussion above.

39/3 -310	39/3 +875	ESA Spotted Owl Critical Habitat Area #138	<p>Small portion of the SE corner of habitat area within .25 mile of 39/3. No work activities to occur from 3/1-6/30.</p> <p>For Future entries, Examine any large danger trees (11” diameter at breast height) that need to be removed in spotted-owl habitat for evidence of owls. If a tree has evidence of owl nesting activity, conduct formal consultation with the USFWS. In case of an emergency danger tree removal—a tree suddenly becoming an imminent threat to the line, posing a danger to life and property—immediately examine the felled tree for evidence of owl nesting. If such evidence is found, start emergency consultation with the USFWS, or, if the situation occurs during off-duty hours, conduct after-the-fact emergency consultation the next business day.</p>
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Potential impacts and mitigation and avoidance measure for Threatened and endangered and Forest Service Region 6 Sensitive fish, wildlife and plant species that are known or may occur in the project area or vicinity need to be addressed in a Biological Evaluation.

Herbicide Toxicities and Characteristics

Herbicide	Mammals	Avian	Aquatic	Leaching	Groundwater
Dicamba Vanquish/ Trooper	Slightly toxic	Practically non toxic	Slightly toxic to fish	High	Low
Glyphosate Various brands	Practically non toxic	Practically non toxic	Slightly toxic Depends on formulation	Low	High
Glyphosate Various brands	Practically non toxic	Practically non toxic	Slightly toxic Depends on formulation	Low	High
Tryclop yr TEA Garlon 3A	Practically non toxic	Slightly toxic	Practically non toxic	High	Low
Tryclop yr BEE Garlon 4	Practically non toxic	Slightly toxic	Highly toxic	Low	Low
Picloram Tordon 22K	Practically non toxic	Practically non toxic	Moderately toxic	High	Low

3.4 List any other measures to be taken for enhancing wildlife habitat or protecting species.

Where possible and appropriate, leave brush piles for small animal habitats.

Where possible and appropriate, top and leave tall dead trees (snags) in place for wildlife habitat.

3.5 List any visually sensitive areas and the measures to be taken at these areas.

Selective cutting techniques will limit visual effects.

3.6 List areas with cultural resources and the measures to be taken in those areas.

None known. Soil disturbance not expected, and if any, will be limited to access roads and tower sites using mechanical equipment. Soil disturbance will not exceed 6 inches below the soil surface. Actions will be contingent on Tribal comments and FS approval.

Areas with steep slopes or potential erosion areas and the measure and methods to be applied in those areas.

Mechanical treatments limited to roads and structure sites.

No ground (soil)-disturbing mechanical equipment on slopes over 20%.

Perform mechanical clearing when the ground is dry enough to sustain heavy equipment.

Avoid using granular or total vegetation management (non-selective) herbicides on slopes over 10%.

No herbicides prescribed that have a high potential for surface runoff.

Perform mechanical clearing when the ground is dry enough to sustain heavy equipment.

Reseed or replant seedlings on slopes with potential erosion problems and/or take other erosion control measures as necessary.

Manual and herbicide methods allowed. **Herbicide:** Glyphosate, Picloram (Tordon 22K), triclopyr (Garlon 3A and Garlon 4), and dicamba (Trooper/Vanquish) may be prescribed for wick, cut-stump, stem-injection, basal-stem, spot-foliar, or broadcast foliar treatments. Do not apply granular herbicide when slope exceeds 10%.

3.7 List areas of spanned canyons and the type of cutting needed.

Where the conductors span canyons and the conductors are greater than 38.1 m (125 ft.) vertical distance from the ground surface, the Contractor will be directed to cut only of individual trees (single tree cuts) that could encroach into the transmission corridor danger zone (40').

Manual: Hand tools and chainsaws. Refer to Riparian treatment specifications

Mechanical: Only on Access Roads and Tower sites

Herbicide: For the treatment of noxious weeds only. Refer to Riparian treatment specifications.

No ground (soil)-disturbing mechanical equipment to clear on slopes over 20%.

Avoid using granular or total vegetation management (non-selective) herbicides on slopes over 10%.

No herbicides prescribed that have a high potential for surface runoff.

Perform mechanical clearing when the ground is dry enough to sustain heavy equipment.

Reseed or replant seedlings on slopes with potential erosion problems and/or take other erosion control measures as necessary.

Spanned Canyons

Span		Methods, cutting
From	To	
2/1	2/2	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Threemile Cr.)
5/2	5/3	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Dry Hollow Creek)
7/1	7/2	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
7/3	8/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Whiskey Gulch)
8/4	8/5	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
8/5	9/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
9/1	9/2	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
9/2	9/3	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
9/3	9/4	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
9/4	10/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
10/1	10/2	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
10/3	10/4	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
11/3	11/4	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (S. Fork Mill Creek)
11/4	12/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (N. Fork of Mill Creek)
12/3	13/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
13/4	14/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Brown Creek)
16/3	16/4	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
16/5	17/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Mosier Creek)
17/1	17/2	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Spring Creek)
18/1	18/2	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (W. Fork Mosier Creek)
20/5	21/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)
22/1	22/2	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Creek)

26/3	26/4	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Trout Creek)
28/2	28/3	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Perennial Cr.)
29/3	29/4	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Perennial Creek)
29/5	30/1	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Perennial Creek)
31/2	31/3	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Camp Creek)
32/2+ 900	32/2 +350	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated.
33/2+ 700	33/2 +1100	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Marco Creek)
38/3+ 400	38/3 +900	Cut only individual trees within 40' of conductors. Spot treatment on stumps. No ground disturbance anticipated. (Elk Cr.)

4. DETERMINE VEGETATION CONTROL METHODS

4.1 List Methods that will be used in areas not previously addressed in steps above.

APPLICATION METHOD DESCRIPTIONS

Herbicide application methods: - liquid or granular forms of herbicides would be applied either with machinery or by hand. Mechanized application would be done with vehicle-mounted (pick-up, 4-wheeler, or tractor) fixed-booms, or spray guns. Hand application methods to be used are: (1) Spot-spraying with hand-held spray nozzles either mounted on a vehicle or attached to a backpack system; (2) hand-spreading granular formulations; and (3) wicking, wiping, dripping, painting, or injecting target vegetation.

Spot Herbicide Application

A spot application treats individual plant(s) with the least amount of chemicals possible. The methods include, but are not limited, to the following:

Stump treatments. Herbicide is applied by hand (squirt bottle) or backpack to freshly cut stumps of broadleaf trees and shrubs to prevent re-sprouting.

Injection and notch treatments. Herbicide is injected into the tree around the base using tubular injectors (lances); or herbicide is squirted or sprayed into frills, notches, or cups chopped around the base of individual trees or shrubs. These very selective treatments are only used for specific trees or shrubs and within sensitive areas such as near water.

Wick and carpet roller applications. The herbicide is wiped on the plant(s) (noxious weeds) using hand held or equipment mounted rope wicks, sponges, fiber covered wipers, or carpet wiper designs. This application device uses saturated ropes, wick or sponges that are used to apply the herbicide selectively on the plant. This method is effective where drift or sensitive water sources are a concern.

Localized Herbicide Application

“Localized” herbicide application is the treatment of individual or small groupings of plants. This application method is normally used only in areas of low-to-medium target-plant density. The application methods for this application group include, but are not limited to, the following:

Basal treatment. The herbicides are applied by hand (squirt bottle) or by backpack. Herbicides are applied at the base of the plant (the bark or stem) from the ground up to knee height. The herbicide is usually mixed with an oil carrier to enhance penetration through the bark, and applied to the point short of run-off. These treatments can be done during the dormant season or active growing season.

Low-volume foliar treatment. Herbicides are applied with the use of a backpack sprayer, all terrain vehicle (ATV), or tractor with a spray gun. Herbicide is applied to the foliage of individual or clumps of plants during the growing season, just enough to wet them lightly. A relatively high percentage of herbicide is used mixed with water. Thickening agents are added where necessary to control drift. Dyes may also be added to see easily what areas have been treated.

Localized granular application. Granular or pellet forms of herbicide are hand-applied to the soil surface beneath the drip lines of an individual plant, or as close to a tree trunk or stem base as possible. Herbicide is applied when there is enough moisture to dissolve and carry the herbicide to the root zone—but not so much water that it washes the granules off-site.

Broadcast Ground Herbicide Application

Broadcast herbicide applications treat an area, rather than individual plants. Broadcast applications are used to treat right-of-ways that are thickly vegetated (heavy stem density) with non-desirable species, access roads, and noxious weeds. The application methods for this group include, but are not limited to, the following:

High-volume foliar treatments. Herbicides are applied by truck, ATV, or tractor with a spray gun, broadcast nozzle, or boom. A hydraulic sprayer mounted on a rubber-tired tractor or truck or tracked-type tractor is used to spray foliage and stems of target vegetation with a mixture of water and a low percentage of herbicide. The herbicide mixture is pumped through hoses to a hand-held nozzle. A worker activates the nozzle and directs the spray to the target vegetation. Boom application methods involve a fixed nozzle or set of nozzles that spray a set width as the tractor passes over an area.

Cut-stubble treatment. Herbicide is sprayed from a truck with a mounted boom over large swaths of freshly mechanically cut areas. This treatment is the broadcast style of cut-stump treatments. It is intended to keep plants from re-sprouting.

Other herbicide conservation measures:

The measures listed below are for terrestrial application of chemicals only, and are designed to prevent chemicals from entering any surface waters. Aquatic application of chemicals is not covered under this Checklist. Applicators will only use the herbicides and adjuvants as proposed in this Checklist.

Within the specialized treatment zones identified in Section 3, applicators will time all vegetation management activities described in this Checklist to occur when aquatic ESA species are not likely to be present during spawning and/or sensitive life stages.

Product label directions will be followed as required by the Federal Insecticide, Fungicide, and Rodenticide Act, including “mandatory” statements (such as registered uses, maximum use rates, application restrictions, worker safety standards, restricted entry intervals, environmental hazards, weather restrictions, and equipment cleaning).

All product label “precautionary” statements such as environmental hazards, physical or chemical hazards, soil and climate application restrictions, wildlife warnings, and threatened and endangered species warnings will be followed.

Herbicides will only be applied by a licensed applicator (valid for the state where the work is located) and only in accordance with EPA labeling or the restrictions identified in the Checklist, whichever are more restrictive. Applicators will use the herbicide specifically targeted for a particular vegetation species that will cause the least impact to non-target vegetation.

Applicators will keep records of each application, the active ingredient, formulation, application rate, date, time, location, etc. Records will be available to state and Federal inspectors, and will be supplied to applicable regulatory agencies and land managers as requested.

Applicators will also supply application information to BPA for the annual NOAA Fisheries reporting and monitoring requirements described in the Reporting, Monitoring, Evaluation, and Adaptive Management portion of this section.

Applicators will never leave herbicides or equipment unattended in unrestricted access areas.

Only the minimum area necessary for the control of noxious weeds will be treated. *Prior to application*, applicators will thoroughly review the site to identify and mark, if necessary, the specialized treatment area requirements. The most restrictive widths for the conditions at the site will apply.

Applicators will observe restricted entry intervals specified by the herbicide label.

No 2,4-D ester formulations of any kind will be used.

Only glyphosate that is factory-formulated *without* a surfactant will be used within 100 feet of any surface waters.

No carrier other than water will be used for tank mixing.

Drift and Leach Reduction Conservation Measures.

Applicators will use drift reduction agents, as appropriate, to reduce the drift hazard when applying herbicides as broadcast or localized foliar treatments.

Colorants will be used to the extent practicable to ensure proper coverage and targeting.

Herbicides/adjuvants with a groundwater or surface water label advisory will not be used within 100 feet of any surface water.

For basal bark/stem and stump applications, applicators will directly spray the root collar area, sides of the stump, and/or the outer portion of the cut surface, including the cambium, until thoroughly wet, but not to the point of runoff, in order to avoid or minimize deposition to surrounding surfaces. A marker colorant/dye is recommended to establish coverage and prevent plant runoff.

Treatment will be delayed if precipitation is forecasted to occur within 24 hours, except for pellet application.

Mixing Conservation Measures.

Applicators will prepare spray mixtures in accordance with the label(s) instructions and will not exceed the amount of herbicide per acre specified on the label.

Applicators will mix and load herbicides at least 100 feet from any surface waters and only in locations where accidental spills cannot flow into waters, or contaminate groundwater.

Spills and Misapplication Conservation Measures.

Applicators will conduct regular testing on field calibration and calculations to prevent gross application errors.

The applicator will develop a Spill Containment and Control Plan (SCCP) prior to herbicide application. The plan will contain notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment. All individuals involved, including any contracted applicators, will be instructed on the plan.

In addition to an applicator's SCCP, applicators will report spills and misapplications to EPA, Dept. of Environmental Quality, and the USFS in accordance with the BPA's Government Agency Plan. Applicators will report spills and misapplications and clean up according to Federal and applicable state laws and regulations. At a minimum:

Handling Conservation Measures.

During transportation, applicators will secure herbicide containers to prevent movement within the vehicle or loss from the vehicle during the operation of the vehicle.

When spray equipment is not being used, applicators will ensure that all valves and tank covers will be closed during any movement of the vehicle.

Applicators will firmly secure any portable tanks used for herbicide application to the frame of the vehicle.

Storage of Herbicides, Containers, and Equipment Conservation Measures.

Applicators will follow label requirements for storage.

Storage of herbicides will be in strict compliance with the relevant regulations of the State in which the herbicides are being stored.

Applicators will inspect storage areas frequently for leakage and clean up spill areas immediately.

Applicators will store only minimum amounts of chemicals at field and temporary locations, and will order out no more chemicals than necessary.

Applicators will dispose of unwanted or unusable products promptly and correctly.

In temporary storage locations, such as the field, applicators will store all chemicals in buildings or vehicles that can be locked up and no closer than 300 feet from any surface water.

Disposal Conservation Measures.

Applicators will use water-soluble packaging (WSP) when available, to eliminate the need for container disposal (BPA 2000).

Applicators will not burn paper and carton-type containers unless stated as permissible on the label.

Applicators will dispose of containers or cartons in one of three ways:

- o Triple rinse containers of liquid herbicides before disposal. The rinse solution will be poured into the mix-tank and used for treatment. Each rinse solution will be equal to at least 10% of the container volume. Dispose of the empty containers as non-contaminated waste, at any legal landfill dump.
- o Use a rinsing nozzle (instead of triple rinsing). A rinsing nozzle has a sharp point that can puncture a plastic or metal empty herbicide container and flush the container's contents into the mix tank.
- o Return returnable "mini-bulk" type containers to the distributor for refill (BPA 2000).

Applicators will observe the applicable buffers when washing or rinsing spray tanks near waters.

Applicators will dispose of unwanted or unusable herbicide products as contaminated waste at an approved waste facility.

Applicators will dispose of contaminated materials (including contaminated soil) resulting from cleanup procedures according to EPA directives.

5. DETERMINE DEBRIS DISPOSAL AND REVEGETATION

5.1 Describe the debris disposal methods to be used and any special considerations.

Lop and Scatter (Branches of a fallen tree are cut off (lopped) by ax or chainsaw, so the tree trunk lies flat on the ground. The trunks are occasionally cut in 1-to-2-m (4-to-8-ft.) lengths. The cut branches and trunks are then scattered on the ground, laid flat, and left to decompose.) Some mulching will occur where mowers can be used.

5.2 List areas of reseeded or replanting (those areas not already described in steps 1, 2, or 3).

No ground disturbance or exposed soil expected.

Suggested Seed mixture to reduce and prevent noxious weeds.

Seed Mixture/Per USFS District approval	*Native	Reason for seeding																
<p>Suggested Seed mix for Erosion Control – <u>west side.</u></p> <table border="0"> <thead> <tr> <th style="text-align: left;">Name</th> <th style="text-align: left;">% by wt.</th> </tr> </thead> <tbody> <tr> <td>California Brome (Bromus carinatus)</td> <td>30%</td> </tr> <tr> <td>Sheep fescue (Festuca ovina)</td> <td>40%</td> </tr> <tr> <td>Blue wildrye (Elymus glaucus)</td> <td>20%</td> </tr> <tr> <td>Canada bluegrass (Poa compressa)</td> <td>10%</td> </tr> <tr> <td>Sickle-keeled lupine</td> <td>5 oz./100# seed</td> </tr> <tr> <td>And/or Lupinus bicolor</td> <td>5 oz./100# seed</td> </tr> <tr> <td>America vetch (Vicia Americana)</td> <td>5 oz./100# seed</td> </tr> </tbody> </table> <p>Developed by USFS Botanist from the Columbia Gorge Area.</p>	Name	% by wt.	California Brome (Bromus carinatus)	30%	Sheep fescue (Festuca ovina)	40%	Blue wildrye (Elymus glaucus)	20%	Canada bluegrass (Poa compressa)	10%	Sickle-keeled lupine	5 oz./100# seed	And/or Lupinus bicolor	5 oz./100# seed	America vetch (Vicia Americana)	5 oz./100# seed	Yes	Re-seeding and Fertilization after noxious weed treatments has been shown to be effective in preventing the re-establishment of noxious weeds and which reduces the need for future herbicide applications
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*Native to the Washington area. Westside Cascade Mtn. plant communities have limited natives that are available for re-seeding that are true natives to the site.

5.3 If not using native seed/plants, describe why.

NA.

5.4 Describe timing and any follow-up that will need to take place to ensure germination/success of seeding/planting.

If seeding becomes necessary, seeding should be completed when there is enough moisture to allow for 2 months of growth.

6. DETERMINE MONITORING NEEDS

Right-of-way will be visited during operations and late summer after contractor has completed work to determine if target vegetation was cut and treated effectively, whether desired results were achieved for riparian as well as non-riparian areas and if mitigation measures were appropriately utilized and effective.

6.1 Describe the follow-up/monitoring cycle that will be used to evaluate the effectiveness of the vegetation control methods used.

Annually field verify results of previous veg. mgmt schemes and look for new alternatives for treatment, etc.

6.2 Describe any follow-up or monitoring needed to determine if mitigation measures were effective.

Review TLM patrol reports and aerial patrol tapes.

7. PREPARE APPROPRIATE ENVIRONMENTAL DOCUMENTATION

Checklist and plan/profile maps will be submitted to environmental staff to ensure compliance with BPA's Veg. Mgmt. EIS. Upon approval, BPA's NEPA compliance officer will issue a Supplemental Analysis.

7.1 Describe any potential project impacts or project work that are different than those disclosed in the Transmission System Vegetation Management Program EIS. Describe how those differences impact natural resources and if the differences are "substantial".

None

7.2 Is there a need for additional NEPA documentation (i.e. Forest Service requirement, Record of Decision, supplemental EIS)? If so, attach.

Upon discussing veg. mgmt activities with USFS fish biologist, it is clear that a Biological Evaluation will need to be done for the TES streams and proposed critical habitat area near Elk Cr. To be able to manage the vegetation according to BPA standards and in an efficient and cost effective manner, the TES stream management issues need to be resolved.