Biological Evaluation

Historic Columbia River Highway State Trail, Wyeth — Starvation Creek, Segments A-D

Prepared for

U.S. Department of Transportation
Federal Highway Administration

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Biological Evaluation

for the

Historic Columbia River Highway State Trail Project,

Wyeth—Starvation Creek Trail Segments (Segments A-D)

1.0 Introduction

The Federal Highway Administration (FHWA), Western Federal Lands Highway Division, is proposing to construct connecting sections of Historic Columbia River Highway State Trail (HCRHST). The proposed Wyeth—Starvation Creek Trail Segments (Segments A-D) are part of the Historic Columbia River Highway State Trail (HCRHST) Project, an effort to connect intact and abandoned segments of the Historic Columbia River Highway (HCRH) for recreational use, as originally called for in the 1986 Columbia River Gorge National Scenic Area (CRGNSA) Act. While parts of the HCRH are still drivable, portions have been abandoned, removed and fragmented by the construction of I-84. Federal Highway Administration (FHWA) funds will partially finance this project and constitute the federal nexus. Oregon Department of Transportation (ODOT) will be responsible for administering the funds for the project.

Trail Segments A-D are within a Special Management Area (SMA) of the CRGNSA. The CRGNSA Management Plan specifically calls for the following within the SMA:

> "Intact and usable highway segments should be connected with recreation trails to create a continuous route through the Columbia River Gorge that links local, state, and federal recreation and historic sites" (CRGC 2011).

Since 1987, nearly 12 miles of the HCRHST have been completed. Proposed construction of the Wyeth—Starvation Creek Trail Segments (Segments A-D) project will complete the trail between the Wyeth campground (east of Cascade Locks) and Starvation Creek State Park (Figure 1). This Biological Evaluation (BE) addresses only those portions of the proposed trail that will be located on land managed by the Mt. Hood National Forest Columbia River Gorge National Scenic Area Unit, which is limited to tax assessor parcel 02N09E04 00400 (Figures 2 and 3). A section of the trail bisects Mt. Hood National Forest parcel 02N09E05 00300; however, this trail section will be completely within the existing footprint of a remnant section of the Historic Columbia River Highway and appears to be within State of Oregon right of way.

This BE was prepared for the USDA Forest Service, Mt. Hood National Forest. Forest management activities that may alter the habitat or affect individuals or populations of special status species require a BE to be completed as part of the National Environmental Policy Act process (FSM 2671.44 and FSM 2670.32; USFS 2014). The BE is a documented Forest Service review of Forest Service programs or activities in sufficient detail to determine how an action or proposed action may affect any Proposed, Endangered, Threatened, and Sensitive (PETS) species. The BE process is intended to conduct and document activities necessary to ensure proposed management actions will not likely jeopardize the continued existence or cause adverse modification of habitat for: (1) species listed or proposed to be listed as endangered (E) or threatened (T) by the USDI Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS); and (2) species listed as sensitive (S) by USDA Forest Service Region 6 (FSM 2672.43).

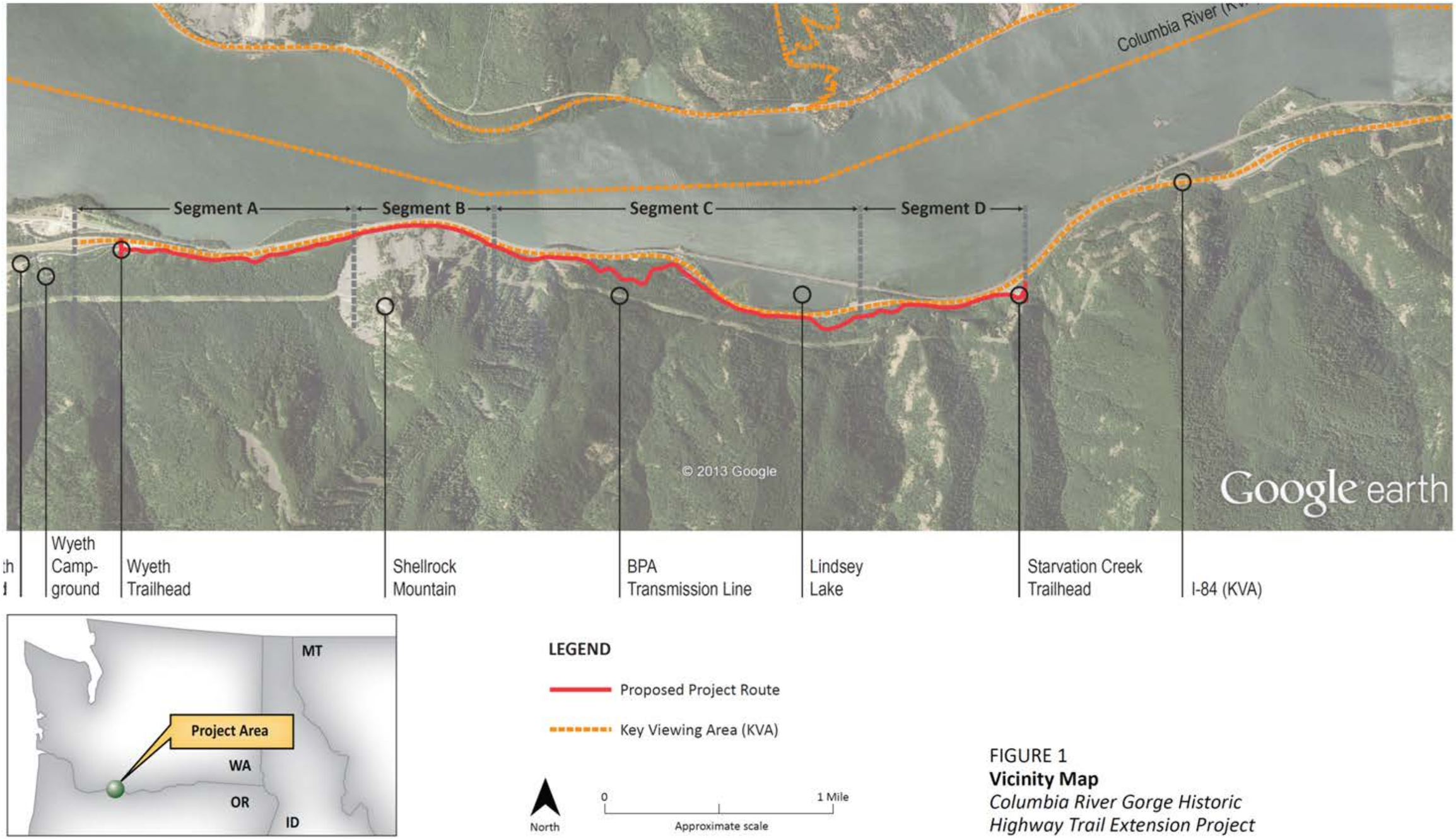

FIGURE 1
Vicinity Map
Columbia River Gorge Historic Highway Trail Extension Project

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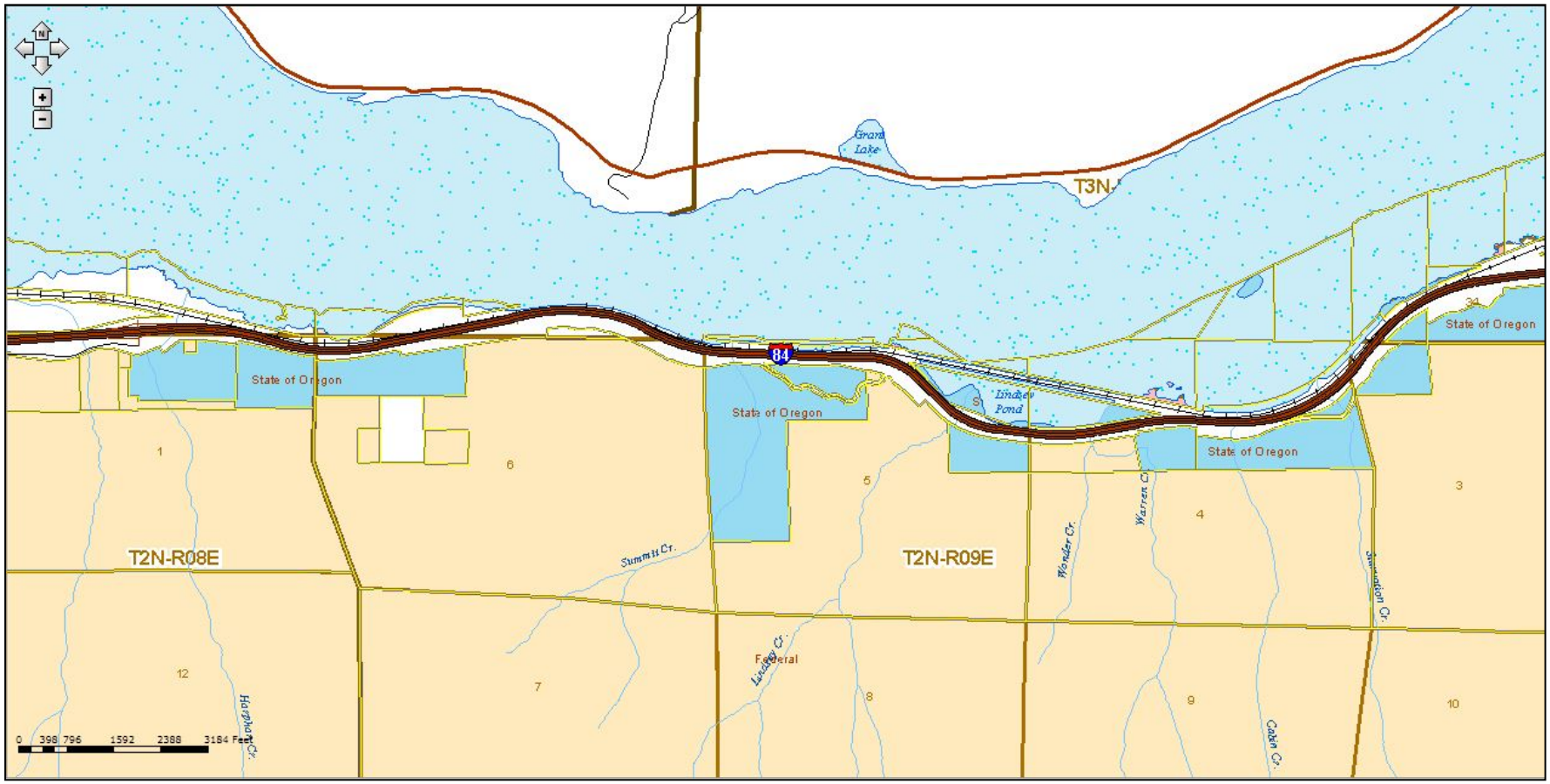

FIGURE 2

USFS Land along the HCRHST API

Historic Columbia River Highway

State Trail Project

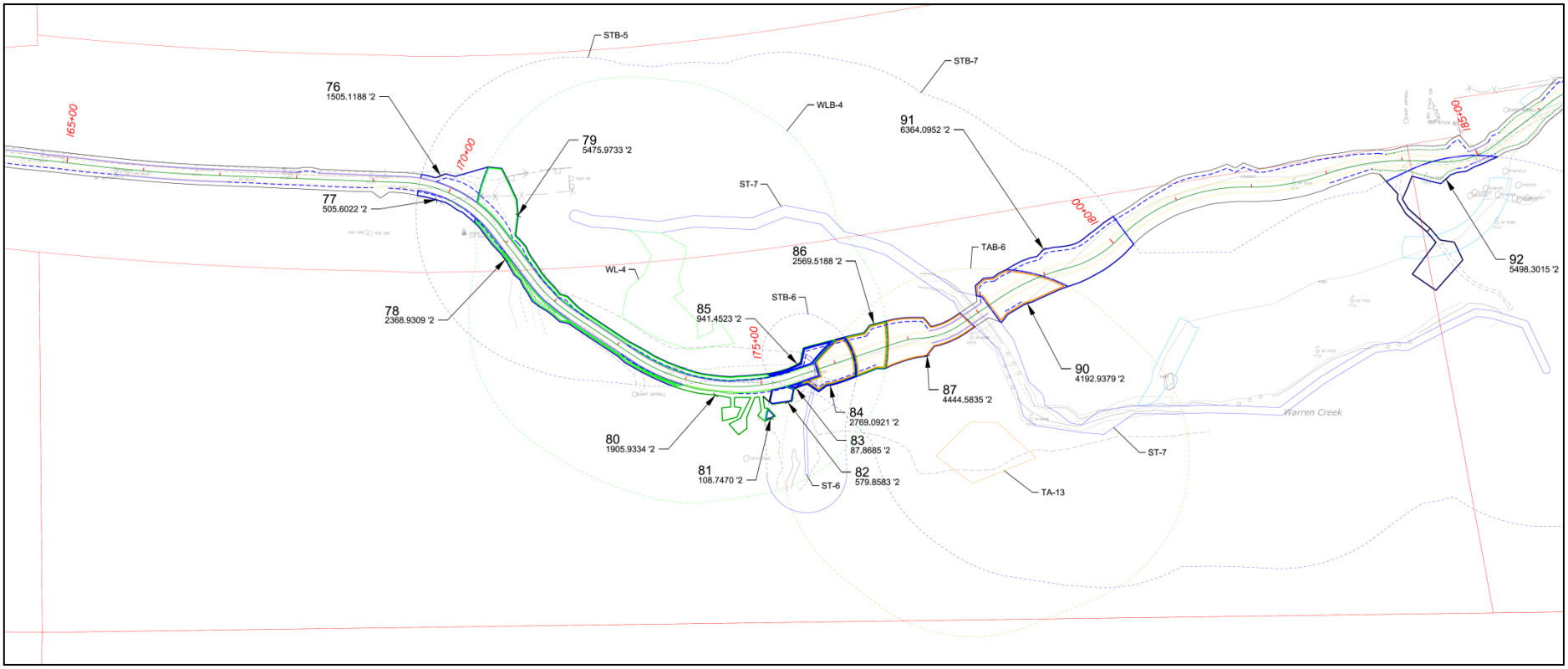

FIGURE 3

USFS Area of Potential Impact

Historic Columbia River Highway State Trail Project

According to Carol Hughes/USFS Regional Survey and Manage Coordinator, the proposed trail construction is exempt from Survey and Manage requirements because the project footprint is less than 5 acres on USFS land (Carré 2012a). The portion of the trail to be constructed on USFS land is only 0.2 acre (600' long X 16' wide).

The three steps for completing a biological evaluation are outlined in the USDA Forest Service Manual (2672.42, 2672.43). Step 4 also may be required in certain circumstances. The steps are as follows.

Step 1. Pre-Field Review: Each area potentially affected by management actions is investigated for potential threatened, endangered species, and sensitive (PETS) plant habitat in the pre-field review. To determine whether potential habitat exists in the proposed project area, a number of sources should be used, including the Region 6 Regional Forester's Sensitive Species List (Sensitive Flora and Fauna List of Species for the Oregon Side of the CRGNSA), Oregon Biodiversity Information Center, aerial photos, topographic maps, and knowledge provided by individuals familiar with the area. Each PETS species that is documented or suspected to occur on the Mt. Hood National Forest is to be considered.

Step 2. Field Reconnaissance: Field reconnaissance is conducted when Step 1 has determined that there is a potential for PETS species to occur within or adjacent to the project area. Surveys must be conducted during the time of year when the target species can be identified.

Step 3. Effects Analysis/Impact Determination: If a PETS species is found on or adjoining a site where an action is proposed, a risk assessment of the effects of the proposed action on the species and its habitats must be completed. A risk assessment considers: (a) the likelihood of beneficial or adverse effects to the population or individuals from the proposed activities, and (b) the consequences of these effects to determine what the cumulative effects will be to the species as a whole. The risk assessment then makes a determination of No Effect, Beneficial Effect, or May Effect on the species. The process and rationale for the determination is documented in the NEPA document. Recommendations are offered for removing, avoiding, or mitigating for adverse effects.

Step 4. Biological Investigation: When a risk assessment determines that information is insufficient to assess the significance of the effects, a Biological Investigation is required. This procedure involves an additional investigation that essentially becomes background information for a conservation strategy. The result is a determination of significance of effects on species conservation and population objectives.

Each PETS species associated with the proposed project area was evaluated based on these steps. The evaluation of impacts on a given species could be completed at the end of Step l, or could be complete only after Step 4.

2.0 General Project Description

Segments A-D of the HCRHST Project are located in the CRGNSA between Wyeth and Starvation Creek in Hood River County, Oregon. The bike/ped project was originated by the Oregon Parks and Recreation Department (OPRD) and ODOT, then transferred to FHWA's Western Federal Lands Highway Division (WFLHD). FHWA and ODOT will be responsible for administering the funds and constructing the project. Partial funding is provided by the Federal-Aid Highway Program.

Segments A-D of the trail alignment are 3.93 miles long and located on ODOT right-of-way; Oregon Parks and Recreation Department properties including Lang State Park, Lindsey Creek Scenic Corridor, and Starvation Creek State Park; and land managed by USFS Columbia River Gorge National Scenic Area Unit (Figures 1 and 2).

The trail will be located adjacent to or near I-84 for most of its length. The segments cross several drainages including ESA fish streams. The project typically includes 12-foot-wide trail with 2-foot-wide shoulders. Except for the Wyeth Campground Trailhead, the proposed facilities will be pedestrian-and-bike-only. The proposed project will follow the HCRH State Trail Guidelines (ODOT 2011).

The portion of the HCRHST Project on the Mt. Hood National Forest includes the following components:

- Geotechnical investigation.
- Clearing and grubbing of permanent and temporary impact areas. About a dozen mid-size conifers and a few larger maples would need to be cleared from USFS parcel 02N09E04 00400.
- Grading, base, paving and drainage for a paved pedestrian/bicycle path, 10-12 feet wide with two 2-foot shoulders, with grades generally up to 5%.
- Retaining walls to support the trail and minimize the footprint.
- New 47-foot-long single span pedestrian/bicycle bridge over Warren Creek.
- New pervious rock crossing at Wonder Creek.
- Viewing area and scenic spur trail.
- Planting of disturbed areas with native grasses, shrubs and trees.
- Intersection with a Bonneville Power Administration access road.
- Rehabilitation and incorporation of remnant section of the HCRH (within ODOT right of way).

2.1 Area of Potential Impact

The Area of Potential Impact (API) for the purpose of this BE consists of only portions of trail construction on land managed by the Mt. Hood National Forest Columbia River Gorge National Scenic Area Unit, which is limited to tax assessor parcel 02N09E04 00400 (Figure 3; Table 1). The API on this Mt. Hood National Forest parcel will be approximately 1.19 acres in size.

On tax assessor parcel 02N09E04 00400, the physical disturbance area includes the proposed trail footprint and temporary construction impacts, including geotechnical investigation, access roads, staging areas, and allowances for vegetation clearing. A variable width will be cleared on either side of the permanent trail footprint (trail surface and embankment) for sight distance, removal of hazard trees, and for temporary construction activity. The typical trail surface will be 12 feet in width, with 2 foot shoulders (for a total of 16 feet in width) (Figure 4). Occasionally and where safe for trail users, the surface will be narrowed to 10 feet wide to avoid removals of large trees (Figure 3). Also, spatial allowance will be provided for overlooks, rest stops, interpretive areas, and auxiliary trails, widening the total area of disturbance at those locations. Auxiliary trails will be 4-6 feet wide with gravel surfaces. The width of disturbance beyond the trail surfaces will depend on terrain and the types of appurtenances (e.g., retaining walls, railing). On average, vegetation clearing might extend about 10 feet beyond the trail surface; less where the trail profile is close to existing grade and more where cut or fill slopes occasionally extend farther up or down slopes. Also within this parcel, the API will traverse riparian forest associated with Warren and Wonder creeks, mixed deciduous/coniferous forest, young and mid-seral coniferous forest, and ruderal herbaceous vegetation. The span length of the new pedestrian/bicycle bridge over Warren Creek will be at least 1.5 times the active channel width (Figure 5). The fenced staging areas will be located at previously developed areas and within the proposed trail footprint.

As noted above, another portion of the API will be entirely on a remnant section of the Historic Columbia River Highway within ODOT right of way that splits Mt. Hood National Forest parcel 02N09E05 00300. This remnant highway section will be refurbished to accommodate bikes and pedestrians. Construction on this section will be limited to historic restoration, without any ground disturbance or

Table 1. HCRHST (Segments A-D) on the Mt. Hood National Forest, Columbia River Gorge National Scenic Area Unit.

Project Name:	Wyeth—Starvation Creek Trail Segments (Segments A-D) Project
FHWA Project #:	OR DOT CRGNSA 100(1), Historic Columbia River Highway State Trail
Federal Aid Number:	WFL14AE013
Ownership:	Land managed by USDA Forest Service (USFS), Mt. Hood National Forest, Columbia River Gorge National Scenic Area Unit
Location of Project on Mt. Hood N.F.:	Hood River County Tax lot 02N09E04 00400 (This BE assumes that the remnant highway section running through Tax lot 02N09E05 00300 is on ODOT right of way, not federal land.)
Size of API on Mt. Hood N.F.:	1,260 feet long; 1.19 acres (on Tax lot 02N09E04 00400)
USGS Quadrangle Map Location:	Mount Defiance, OR Quadrangle; T2N R9E Sec 4 and 5
Watershed (6th Field HUC):	Columbia River Tributaries (Grays Creek 170701050903)
City:	N/A
County:	Hood River County
Project Staff:	Mike Odom (WFLHD), Erin Chipps (WFLHD), Steve Mader (CH2M HILL), Pamela Porter (ODOT Biologist).
Field Reconnaissance:	May 7, 2009; October 13, 2010; April 25 and 28, May 2, June 10 and 13, 2011; May 11 and 25, 2012, June 13, 2012; September 26, October 2-4 and 14-15, November 14 and 29, 2013; [April 15-16, 2014]
Current Land Use(s):	National Scenic Area
Waterways on USFS Parcel:	Wonder and Warren creeks; wetlands.
River Mile:	Columbia River RM 158.5 – 159.5

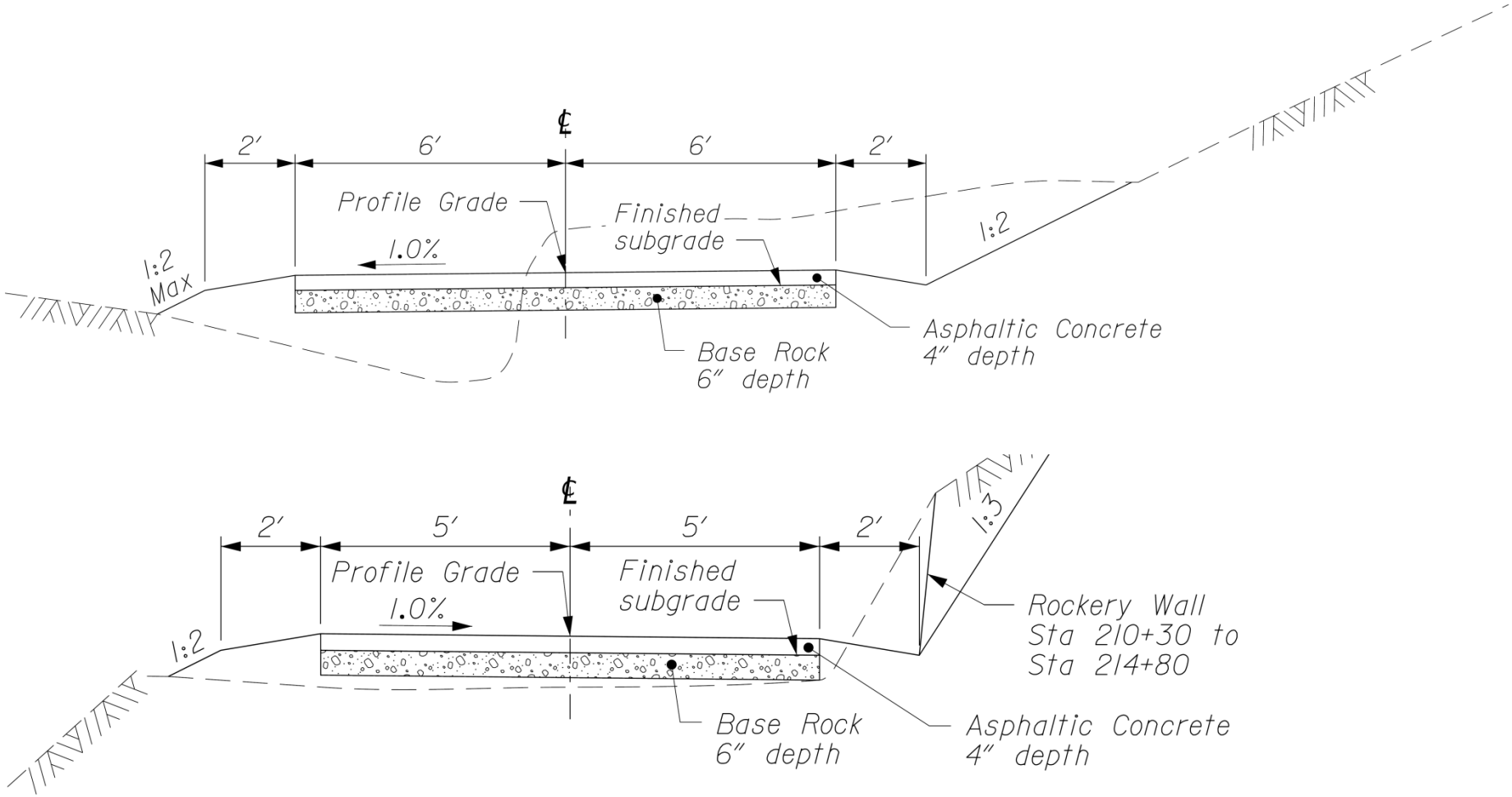

FIGURE 4

Typical Sections; USFS

Historic Columbia River Highway State Trail Project

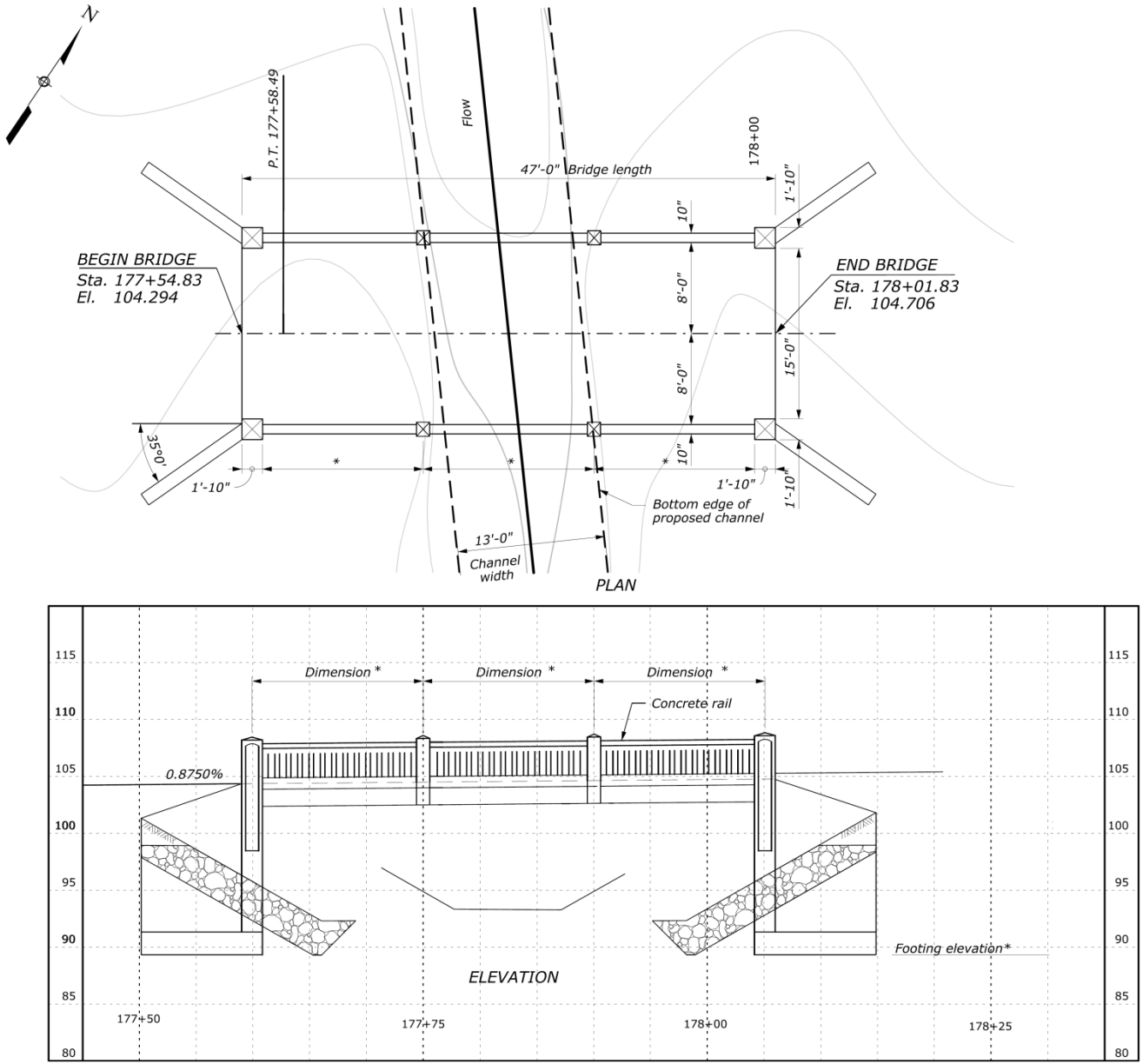

FIGURE 5

Warren Creek Bridge; USFS

Historic Columbia River Highway State Trail Project

tree removal extending beyond the footprint of the existing highway facility. (Actually, a legal review of the boundary survey may reveal that the remnant section of the Historic Columbia River Highway may not lie entirely within the recorded ODOT right of way. Therefore, a legal review of the highway ownership may be warranted to verify that the historic highway at this location lies on land owned by the State of Oregon rather than federal land managed by the Mt. Hood National Forest.)

The API is located within the Western Cascades Lowlands and Valleys level IV ecoregion (Thorson et al. 2003), typified by lush, western hemlock-Douglas fir stands. This ecoregion is found on the lower slopes of the Cascades, and contains steep valleys with high-gradient rivers and streams that support cold-water salmonids. The API is within the Columbia River Gorge, a low elevation river passage carved through the Cascade Range and forming the present boundary between Oregon and Washington. The Gorge is characterized by steep slopes that often rise hundreds to thousands of feet within just a few miles of the river. Cliff faces at different elevations may be comprised of layers of dense (often columnar) basalt, or of much looser, usually sedimentary material. Due to slope steepness, heavy seasonal rainfall, and the highly variable stability among rock layers, debris slides are not uncommon and many relatively level surfaces near I-84 are actually comprised of colluvium from old slides. The trail alignment passes over old colluvium in several places, especially where it moves south and upslope away from I-84 to avoid wetlands or other obstacles. Portions of the alignment closest to the highway cross surfaces that have been disturbed by road construction or other human activities. The trail alignment reaches its maximum distance from I-84 at the proposed Warren Creek bridge crossing, where the alignment is nearly 300 feet south of the highway.

The trail will pass through mixed deciduous/coniferous forest, mature coniferous forest, and young coniferous forest. The riparian forest associated with Warren Creek is primarily composed of big-leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), and vine maple (*Acer circinatum*). Adjacent hillslopes are forested with a mix of Douglas-fir (*Pseudotsuga menziesii*) and western hemlock (*Tsuga heterophylla*). The understory vegetation is dominated by salmonberry (*Rubus spectabilis*), sword fem (*Polystichum munitum*), vine maple, and snowberry (*Symphoricarpos albus*).

The open areas dominated by non-native species have a history of disturbance, for example, staging and waste soil areas for I-84 highway construction. Common open area species include tall fescue (*Festuca arundinacea*), red fescue (*Festuca rubra*), bentgrass (*Agrostis* spp.), orchardgrass (*Dactylis glomerata*), and sweet vernal grass (*Anthoxanthum odoratum*). Common weedy species include vetch (*Vida* spp.), ox-eye daisy (*Chrysanthemum leucanthemum*), St. John's wort (*Hypericum perforatum*), Himalayan blackberry (*Rubus armeniacus*), and English ivy (*Hedera helix*).

The Columbia River Gorge has a long, complex land use history prior to and after Euro-American settlement. Major alterations to the API have occurred within the last century due to I-84 construction and, before that, operation of the Historic Columbia River Highway. Highway construction had necessarily impacted a wider corridor than the currently paved areas. Localized hydrology was permanently altered by construction in some areas. Road cuts, reshaping of slopes, wasting of excess soil and rock, and flood control has altered the location and character of groundwater seepages at the API. Perennial streams may also have been temporarily impacted during construction of I-84 structures and approaches. Warren Creek has been realigned and its stream channel modified for flood control.

General wildlife use of the API is likely to be low to moderate due to the proximity to human disturbance, including I-84 and the active Union Pacific Railroad. Larger animals likely use the API, especially as a travel path in the evenings. The forests in the API provide moderate quality foraging habitat for black-tailed deer (*Odocoileus hemonius columbianus*) and black bear (*Ursus americanus*); however, use of the API by these species is likely to be limited due to regular human disturbances (i.e.,

noise and visual disturbance from activity along I-84 and the railroad). A small portion of the proposed trail, where older Douglas-fir are present, provides moderate quality browse and cover for large mammals, such as deer and elk. Deer and elk winter range areas are outside of the API and will not be affected by the proposed project. Bats or birds may nest in trees and snags within the API. Pileated woodpecker (*Dryocopus pileatus*) and osprey (*Pandion haliaetus*) were observed nearby. Talus slopes within and adjacent to the API provide suitable habitat for a variety of species, including the Larch Mountain salamander (*Plethedon larselli*). Low elevation pika (*Ochotona princeps*) and red tree vole (*Arborimus longicaudus*) have been sighted in the vicinity but not in the API. In addition, abundant down wood at several places in the API might provide suitable habitat for terrestrial mollusks.

The forest habitat in the project area contains some of the functional habitat elements required to support northern spotted owl (NSO) life history. Mt. Hood National Forest contains NSO critical habitat. Field observations indicate that forest structure may be suitable for NSO to forage, disperse, and avoid avian predation. NSO nesting habitat is unlikely to be present within the API due to:

- the lack of old growth forest
- the high noise levels
- vulnerability to predation
- better habitat upslope (south) within Mt. Hood National Forest

General occupancy of this habitat by NSO must nevertheless be assumed. However, as indicated above, any owls occupying this area would already be acclimated to high levels of human activity and traffic-related noise disturbance.

3.0 Pre-Field Review

Threatened, endangered, and sensitive species that potentially occur in the API are listed in Appendix A, along with their listing status and habitat requirements.

Early coordination, pre-consultation, and site visits for the proposed project took place on several occasions. On October 18, 2010, MB&G and ODOT personnel met on site with David Leal (USDI Fish and Wildlife Service [USFWS]), Brett Carré (CRGNSA, USDA Forest Service[USFS]), and Kelly Reis (Oregon Department of Fish and Wildlife [ODFW]) to evaluate wildlife habitat (Carré 2010). MB&G conducted further consultations with USFS biologist Brett Carré to refine the target species for supplemental amphibian and mollusk surveys (Leal and Tuerler 2011; Carré 2012a; Carré 2012b).

During October 31 and November 14 and 29, 2013, coordination continued between Erin Chipps/WFLHD, Brett Carré/USFS, Steve Mader/ODOT-Qualified Biologist, and Kevin Maurice/ODOT-USFWS Liaison (Carre 2013; Mader 2013a; Mader 2013b). The purpose of pre-consultation was to discuss the potentials for encountering forest sensitive species, to evaluate the status of northern spotted owl (NSO) habitat within the project area, to discuss project design constraints and construction details, and to identify conservation measures to avoid and/or minimize project effects to the species.

To address potential take of ESA-listed species under jurisdiction of the USDI Fish and Wildlife Service (USFWS) by the proposed action, FHWA prepared a Biological Assessment (BA) for compliance with Section 7c of the ESA of 1973, as amended (Appendix B; CH2M HILL 2014a). Section 7 of the ESA assures that, through consultation with the USFWS, federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat, under the Service's jurisdiction. The BA addressed in detail three USFWS PETS species known to occur in Hood River County—northern spotted owl (*Strix occidentalis caurina*; Threatened),

whitebark pine (*Pinus albicaulis*; Candidate), and bull trout (*Salvelinus confluentus*; Threatened). The finding of effect for northern spotted owl was Not Likely to Adversely Affect (NLAA); and the findings of effect for whitebark pine and bull trout were No Effect. Other USFWS species were determined to have no potential to occur in the action area and were not addressed further in that BA. Consequently, that BA is incorporated into this BE by reference and the species under USFWS jurisdiction will not be discussed further in this BE.

The Area of Potential Impact (API) overlaps with listed species, Critical Habitat, and Essential Fish Habitat under the jurisdiction of NOAA Fisheries. One or more listed species and EFH may occur in Warren Creek. Additional listed species may be affected by stormwater runoff from vehicular surfaces that discharge to Columbia River tributaries. On September 26, CH2M HILL biologist Steve Mader met on site with Tom Loynes/ODOT-NMFS liaison and Pam Porter/ODOT to review the proposed crossing of Warren Creek, an ESA-listed fish stream. [Also reviewed was the proposed Wyeth Trailhead, the vehicular roadways of which will require treatment for stormwater runoff.] The NMFS representative determined that the proposed trail project is eligible for ESA coverage by NMFS under the FHWA-ODOT Federal-Aid Highway Program Programmatic Biological Opinion (NOAA Fisheries 2012). On November 13, 2013, Rod French/ODFW District Fish Biologist provided determinations of fish presence or absence for all streams in the API (French 2013).

To address potential take of ESA-listed species and Essential Fish Habitat (EFH) under jurisdiction of NOAA Fisheries by the proposed action, FHWA prepared a Notification Form to verify coverage under the Federal Aid Highway Program Programmatic Biological Opinion (BO) (Appendix C; CH2M HILL 2014b; NOAA Fisheries 2012). NMFS concluded that the proposed program is not likely to jeopardize the continued existence of the following species, or result in the destruction or adverse modification of their designated critical habitats, except for LCR coho salmon, for which critical habitat has not been proposed:

- Lower Columbia River (LCR) Chinook salmon (*Oncorhynchus tshawytscha*)
- Upper Willamette River (UWR) Chinook salmon
- Upper Columbia River (UCR) spring-run Chinook salmon
- Snake River (SR) spring/summer run Chinook salmon
- SR fall-run Chinook salmon
- Columbia River (CR) chum salmon (*O. keta*)
- LCR coho salmon (*O. kisutch*)
- Oregon Coast (OC) coho salmon
- Southern Oregon/Northern California Coasts (SONCC) coho salmon
- SR sockeye salmon (*O. nerka*)
- LCR steelhead (*O. mykiss*)
- UWR steelhead
- MCR steelhead
- UCR steelhead
- Snake River Basin (SRB) steelhead
- Southern green sturgeon (*Acipenser medirostris*)
- Eulachon (*Thaleichthys pacificus*)

The NOAA Fisheries BO ensures compliance with Section 7c of the ESA of 1973, as amended, for covered transportation projects such as HCRHST. Consequently, that NOAA Fisheries FAHP Programmatic Biological Opinion is incorporated into this BE by reference and the species under NOAA Fisheries jurisdiction will not be discussed further in this BE.

3.3 Forest Sensitive Species

Species on the Regional Forester's Sensitive Species List, their habitat associations, and suitable habitat are listed in Appendix A (see Pre-Field Review column for usual habitat in Oregon). Table A of Appendix A contains a list of sensitive fauna species for Oregon side of CRGNSA, and Table B of Appendix A lists sensitive flora species for Oregon side of CRGNSA. The complete list was reduced to indicate species with potential presence within the API, based on species' life history, results of rare plant surveys, biologists' best professional judgment, consultation with agency personnel, and ORBIC database records. These species are indicated in the Appendix A tables by "Yes" under the column labeled "Fall/Spring Survey?" Floristic surveys of vascular plants by Otak, Inc. (for FHWA) are scheduled to occur during Spring 2014, and those results should be used to update this BE.

Among those with potential to occur in the API, certain species have the highest probabilities of occurring based on consultations with USFS biologist Brett Carré or known previous occurrences. The amphibian species with greatest probability of occurring are (Carré 2012a; Carré 2012b): Oregon slender salamander (*Batrachoseps wrighti*) and Larch Mountain salamander (*Plethodon larselli*). The mollusk species with greatest probability of occurring are: Puget Oregonian (*Cryptomastix devia*), Columbia Oregonian (*Cryptomastix hendersoni*), and crowned tightcoil (*Pristiloma pilsbryi*).

Three confirmed observations of sensitive wildlife were made within or adjacent to the API during the April and May, 2011 site investigations, including osprey (*Pandion haliaetus*) (AN-1), pileated woodpecker (*Dryocopus pileatus*) (AN-2), and Larch Mountain salamander (AN-3) (Cook, et al. 2011). Peregrine falcon (*Falco peregrinus anatum*) is known to occur farther east, near Mitchell Point.

Several sensitive plant species have the potential to occur in the vicinity of the proposed action based on potential distribution and habitat information. One observation of long-bearded hawkweed (*Hieracium longiberbe*) (PL-1) is confirmed in talus near the I-84 shoulder and just west of Summit Creek (Cook, et al. 2011).

Only those species with potential to occur in or near the API were targeted for Field Reconnaissance.

4.0 Field Reconnaissance

Field reconnaissance for the BE was performed by multiple parties on multiple dates: May 7, 2009; October 13, 2010; April 25 and 28, May 2, June 10 and 13, 2011; May 11 and 25, 2012, June 13, 2012; September 26, October 2-4 and 14-15, November 14 and 29, 2013; and April 15-16, 2014 [planned]. Attempts were made to optimize the timing of surveys to improve the probabilities of species observations. Field procedures followed USFS survey protocol (BLM 1999; BLM 2003; Corkran and Thoms 2006; Crisafulli, et al. 2008; Duncan, et al. 2008; Nordstrom and Milner 1997).

The field reconnaissance focused on streams, snags, logs; talus slopes and cliffs; mature forest habitat; and early seral habitat that provide potential habitat for PETS species. Descriptions of potential habitats and findings from field reconnaissance can be found in Appendix A. The field reconnaissance found no PETS species, other than certain species under the jurisdiction of USFWS or NOAA Fisheries and referenced in separate biological assessments.

5.0 Effects Analysis/Impact Determination

The project BA for the USFWS addressed in detail three PETS species known to occur in Hood River County—northern spotted owl, whitebark pine, and bull trout (CH2M HILL 2014a). The finding of effect for northern spotted owl is **Not Likely to Adversely Affect** (NLAA) based on probable construction activities and measures to minimize habitat impacts. Also, no northern spotted owl (NSO) nest sites or

critical habitat is located near the API (ORBIC 2013). The finding for whitebark pine is **No Effect** because the tree species has no potential to occur in the API. The finding for bull trout is **No Effect** because the species is unlikely to occur in the API and is only an infrequent migrant in the Columbia River. Other USFWS species were determined to have no potential to occur in the action area and were not addressed further in that BA.

The findings of effects on ESA-listed anadromous fish, their critical habitat, and EFH in the NOAA Fisheries BO are reported in Table 2 and Table 3 (NOAA Fisheries 2012). The effects on ESA-listed anadromous fish assume that a covered activity of the project will be stormwater discharge from vehicular road surfaces, which is why effects would be expressed on species not occurring within the physical API of the Project.

Table 2. Affected Species and Determinations; NOAA Fisheries.

ESA-Listed Species in the API (including Stormwater API)		ESA Status	Is the action likely to adversely affect this species or its critical habitat?	Is the action likely to jeopardize this species?	Is the action likely to destroy or adversely modify critical habitat for this species?
Lower Columbia R. Chinook salmon	*Oncorhynchus tshawytscha*	T	Yes	No	No
Upper Willamette Chinook salmon		T	Yes	No	No
Upper Columbia River spring-run Chinook salmon		E	Yes	No	No
Snake River spring/summer run Chinook salmon		T	Yes	No	No
Snake R. fall-run Chinook salmon		T	Yes	No	No
Columbia River chum salmon	*O. keta*	T	Yes	No	No
Lower Columbia River coho salmon	*O. kisutch*	T	Yes	No	N/A
Oregon Coast coho salmon		T	Yes	No	No
Snake River sockeye salmon	*O. nerka*	E	Yes	No	No
Lower Columbia River steelhead	*O. mykiss*	T	Yes	No	No
Upper Willamette River steelhead		T	Yes	No	No
Middle Columbia River steelhead		T	Yes	No	No
Upper Columbia River steelhead		T	Yes	No	No
Snake River Basin steelhead		T	Yes	No	No
Southern green sturgeon	*Acipenser medirostris*	T	Yes	No	No
Eulachon	*Thaleichthys pacificus*	T	Yes	No	No

Table 3. Affected Essential Fish Habitat Determinations; NOAA Fisheries.

Fishery Management Plan that Describes EFH in the API	Would the action adversely affect EFH?	Are EFH conservation recommendations provided?
Pacific Coast Salmon	Yes	Yes

The API spans Warren Creek, a tributary to the Columbia River that provides habitat for listed salmonid species (Lower Columbia River (LCR) Evolutionary Significant Unit (ESU) Chinook salmon, coho salmon, and steelhead), as well as native cutthroat trout. The Columbia River is separated from the API by I-84 and railway line. However, no construction activities will occur below the OHWM of this creek, and riparian vegetation to be removed is located outside of the active floodplain of the waterway. The proposed new Warren Creek bridge will at least span 1.5 times the active channel width of the stream. Furthermore, an erosion and sediment control plan will be written well in advance of construction; best management practices (BMPs) employed by the plan will ensure that sediment does not reach the waterbody during construction. Stormwater runoff from the pedestrian/bike trail will not cause take of

listed fish. [Engineered stormwater facilities will treat stormwater runoff from vehicular roadways at the Wyeth Campground Trailhead.] Riparian trees removed for construction of the trail will not negatively affect fish species as they are generally located away from the stream channel, and providing only indirect shade to the channel. Potential future LWD inputs lost from the removal of these trees will be offset by the placement of the down trees throughout the upland areas surrounding the proposed trail. As a result, sensitive fish species will not likely be adversely affected by the proposed project. The trail improvements are designed to meet criteria for ESA coverage by the FHWA-ODOT FAHP Programmatic Biological Opinion to fulfill project-wide federal Endangered Species Act (ESA) requirements.

The determinations of effect for all other USFS sensitive species is **No Effect** because potential habitat is lacking for these species or none were observed as present in the API. The API does not contain known nesting, roosting, or foraging habitat for sensitive species, or the species are not expected to occur in the API on a regular basis, or would not be present when construction impacts would occur.

Sensitive wildlife species may be present within the API, and several have been documented within a five-mile radius of it (ORBIC 2013). Effects to these sensitive species and their habitats include vegetation clearing and ground disturbance, noise and human disturbance from construction and use of the trail, and the introduction of the paved trail surface to the local environment. These effects will be minimized by several factors. First, the careful alignment of the trail (to avoid sensitive resources) will protect existing wildlife resources, such as large diameter trees. Second, the trees felled during construction will be placed in surrounding uplands to enhance wildlife habitat; additionally, snags will also be created to enhance habitat for wildlife species, such as osprey and pileated woodpecker. Location of snags will be determined using guidelines developed by USFS. Third, erosion and sediment control plans and stormwater management plans will protect sensitive resources, including Warren and Wonder creeks. Fourth, vegetation clearing along the trail is scheduled to occur outside the breeding season for many species, including northern spotted owl, bald eagle (*Haliaeetus leucocephalus*), and osprey. And finally, the proposed trail is located in a previously disturbed area. It is unlikely that noise and human disturbance from construction and trail use will cause a change in baseline conditions and disturb sensitive wildlife species. The trail surface may even provide a travel corridor for species movement. Alteration of vegetation may alter insect community composition, but is unlikely to affect forage success of sensitive species.

Although no nests of red tree vole (*Arborimus longicaudus*) have been sighted in the API, no trees containing their nests will be removed. Low elevation pika (*Ochotona princeps*) have been sighted in the vicinity, but not in the API; their preferred rocky habitats will be avoided.

Amphibian surveys along the proposed trail have been negative, except for a single occurrence of Larch Mountain salamander on talus slope outside the API, south of the Starvation Creek State Park parking area. The salamander may utilize the API for foraging and dispersal. The potential effects to the salamander are related to vegetation clearing and ground disturbance within the talus habitat and talus buffer. However, the Larch Mountain salamander is unlikely to be present within the API because talus slopes are not present. The proposed trail layout and construction methods have been modified to minimize the impact on Larch Mountain salamander habitat. Restricting salamander movement toward the highway may decrease mortality associated with vehicular traffic. Trees felled to facilitate construction will be placed in adjacent uplands to enhance wildlife habitat. This may be specifically beneficial to the Larch Mountain salamander, as they utilize LWD within the habitats they occupy. Trail design will be refined to identify areas of concern where construction techniques will be modified to limit excavation, maintain natural slope hydrology, and add organic matter to the soil duff. Direct

impacts to Larch Mountain salamander will be avoided by aligning the trail to avoid talus areas and limiting the clearing of vegetation in the vicinity of talus.

Project impacts to osprey will be avoided or reduced by timing blasting noises (outside the API) to exclude the osprey nesting season. Project impacts to pileated woodpecker will be reduced by avoiding or reducing impacts to snags and older trees—key habitat elements for this species.

Peregrine falcon and bald eagle may also be present within the API, and have been documented within a five-mile radius of it (ORBIC 2013). However, the project is not expected to affect either species. Peregrine falcon nest in tall cliff faces. While this habitat is available adjacent to the API, it is not present within the API. Additionally, noise and human disturbance associated with the construction and operation of the proposed project will not be greater than baseline conditions because those include noise and visual disturbance from high volumes of traffic and maintenance along I-84 and the railway. The nearest documented peregrine falcon nest to the API is near Mitchell Point.

Bald eagles utilize large trees and snags. Few or no trees greater than 24 inches DBH will be removed for construction of the project. The removal of smaller trees will not affect bald eagle, as there are many other suitable trees for roosting within and adjacent to the API. Furthermore, no documented nesting sites for bald eagle occur near the API (ORBIC 2013).

Mollusk surveys along the proposed trail alignment in the API have been negative; however, several terrestrial and aquatic mollusks may be present. Construction of the proposed trail may impact these mollusks due to ground disturbance and vegetation clearing. Construction techniques may be modified to limit excavation, maintain natural slope hydrology and position felled trees on forest floor. However, trees felled to facilitate construction will be placed in adjacent uplands to enhance wildlife habitat, especially for terrestrial mollusks, which utilize LWD.

No Step 4 Biological Investigations are included in this biological evaluation because risk assessment did not determine that information is insufficient to assess the significance of the project effects.

6.0 Interrelated, Interdependent, and Cumulative Impacts

Secondary impacts include interrelated projects that have no independent utility apart from the proposed action, and interdependent projects that are a part of a larger action and depend on the larger action for justification. Cumulative impacts are those impacts that "result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions" (40 CFR 1508.7). The cumulative effects of an action may be undetectable when viewed in the individual context of direct and even secondary impacts, but can nonetheless add to other disturbances and eventually lead to a measurable environmental change.

Future federal actions are subject to the consultation requirements established in Section 7 of the Endangered Species Act and, therefore, are not considered cumulative in the proposed action. There are no known significant non-federal projects occurring near the API or within the watershed that are available for the analysis of secondary or cumulative impacts. It is anticipated that this project, even in combination with future federal projects, would not have a significant impact on PETS species.

7.0 Conservation Measures

Conservation measures for species, critical habitat, and EFH under jurisdiction of USFWS and NOAA Fisheries are specified in the biological assessment and biological opinion issued by the Services (CH2M HILL 2014a; NOAA Fisheries 2012).

Additionally, a Natural Resource Mitigation Plan for HCRHST Segments A through D will be prepared and implemented on and adjacent to the Mt. Hood National Forest to address requirements of the Hood River County National Scenic Area permitting and land use regulations. The Natural Resource Mitigation Plan will be a separate document that includes descriptions and impacts of wildlife/plant species and their habitat types; avoidance and impact minimization measures; and a proposal for replacing the affected functions of the natural resources within the proposed project API. The Natural Resource Mitigation Plan shall include maps detailing areas designated for restoration or enhancement. The plan should include measures to ensure that species listed in Appendix A would not be negatively affected by ecosystem restoration or enhancement activities. In particular, invasive species control measures should ensure the use of only authorized herbicides and methods to prevent herbicide spray drift. The herbicide application methods should eliminate the potential for herbicides reaching any area potentially occupied by forest sensitive species, including Oregon slender or Larch Mountain salamanders in concentrations sufficient to cause harm.

8.0. Conclusions

Based on the proposed action, field investigations, review of literature, available data, and conversations with USFWS, NOAA Fisheries, and USFS staff, effects determinations were made. Effects on resources under jurisdiction of USFWS and NOAA Fisheries are reported separately in referenced biological assessment and biological opinion (CH2M HILL 2014a; NOAA Fisheries 2012).

The proposed project would have **No Effect** on the USFS sensitive species listed in Appendix A because potential habitat is lacking for these species or none were observed as present in the API.

No Survey and Manage species are expected to occur in the project area, although they may occur in the adjacent forested areas. No surveys are required.

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APPENDIX A

BIOLOGICAL EVALUATION OF THE POTENTIAL IMPACTS TO SENSITIVE FLORA AND FAUNA

LIST OF SPECIES FOR OREGON SIDE OF CRGNSA

TABLE A. List of sensitive fauna species for Oregon side of CRGNSA[1].

Sensitive Wildlife Species						
			PLANNING		FIELD RECONNAISSANCE	
SPECIES (population segment)	**STATUS***	**PRE-FIELD REVIEW Usual Habitat in Oregon**	**Fall/Spring Survey?**	**Species-Specific Protocol?**	**Habitat/ Range Present at USFS?**	**Species Present at USFS?**
Cope's giant salamander *(Dicamptodon copei)*	FS(OR), OR-SV	W. WA, NW OR: Clear, cold mountain streams w/rocky substrate.	Yes	Terrestrial Mollusks	Yes	No
Cascade torrent salamander *(Rhyacotriton cascadae)*	FS(WA), WA-C, OR-SV	Cascade Mtns of southern WA and northern OR: in and adjacent to cold, fast, mountain streams or seeps w/rocky substrate.	Yes	Terrestrial Mollusks	Yes	No
Oregon slender salamander *(Batrachoseps wrightorum)*	OR-SV	N and Central OR Cascades: Forests with large down logs and moist talus with abundant wood debris	Yes	Terrestrial Mollusks	Yes	No
Clouded salamander (*Aneides ferreus*)	OR-SV	Associated with stumps and logs in Douglas-fir forests, and in talus and rock outcrops.	Yes	Terrestrial Mollusks	Yes	No
Larch mountain salamander *(Plethodon larselli)*	FS, WA-S, OR-SV	Cascades mountains of S. WA/N. OR: Largely in moss-covered talus slopes, or other rocky substrate, at low-mid elev.	Yes	Larch Mt. Salamander	Yes	No
Coastal tailed-frog *(Ascaphus truei)*	OR-SV	Cold, clear, fast moving, rocky streams in mature forest.	Yes	Terrestrial Mollusks	Yes	No
Columbia spotted frog *(Rana luteiventris)*	FS, WA-C, OR-SV	Columbia basin (east of Cascades Range): In or near permanent slow ponds, streams, marshes with abundant veg. (one known site at Conboy). No current sites in NSA.	No	Columbia Spotted Frog	No	
Foothill yellow-legged frog (*Rana boylii*)	OR-SV	Lives in streams and rivers with off-channel habitat in pools or streams. More likely in Western Gorge than Eastern.	No	Terrestrial Mollusks	No	
Cascade frog (*Rana cascadae*)	OR-SV	In lentic environments. Usually starting at 1300 feet elevation. Few lakes/ponds in CRGNSA at that elevation.	No	Terrestrial Mollusks	No	
Oregon spotted frog (*Rana pretiosa*)	C, FS, WA-E, OR-SC	The Oregon spotted frog was historically found in the Puget Trough from the Canadian border to the Columbia River and east into the southern Washington Cascades. In or near large perennial lakes/marshes. Closest extant population at Crane prairie reservoir in Deschutes County.	Yes	Oregon Spotted Frog	Yes	No

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Northern leopard frog (*Rana pipiens*)	WA-E, OR-SC	Lowland marsh/ponds with dense vegetation; presently found in Grant county only. Likely extirpated in Gorge.	No	Terrestrial Mollusks	No	
Western toad (*Anaxyrus boreas*)	WA-C, OR-SV	Widespread distribution in WA and OR: Most common near marshes and small lakes (breeding sites in midspring); can travel readily overland and be found along streams/seeps. Known within the Scenic Area near White Salmon, Major and Catherine creeks. Presently no known sites within the Oregon portion of the Scenic Area.	Yes		Yes	No
Pacific pond turtle (*Actinemys marmorata*)	FS, WA-E, OR-SC	Streams, lg. rivers, slow sloughs, and quiet waters with nesting habitat (open meadow) within ½ mi. Occurs <3,000 feet.	Yes		No habitat	No
Painted turtle (*Chrysemys picta*)	FS(OR), OR-SC	Slow water ponds, marshes, rivers below 3,000 feet. Widely introduced outside CRG and CR basin.	Yes		Yes	No
Sagebrush lizard (*Sceloporus graciosus*)	FS-WA OR-SV WA-C	Found in sagebrush habitats, possibly on the extreme edge of CRGNSA.	No		No	
California mtn king snake (*Lampropeltis zonata*)	FS(WA), WA-C, OR-SV	Main population in CA and Klamath mtns, with disjunct pop. in CRG (Klickitat, Skamania county area): oak/pine woodland, rocky riparian within logs/rocky cover. No confirmed specimens on OR side of NSA, although unconfirmed sightings have been reported at The Dalles and Maupin areas.	No		No	
Sharptail snake (*Contia tenuis*)	WA-C, OR-SV	East slope of WA Cascades, CRG, W OR: rocky slopes often in open pine/oak woodland w/prey species of small slugs. Often in moist riparian east of Cascades. Extremely secretive and subterranean habits.	Yes		No habitat	No
Bald eagle (*Haliatus leucocephalus*)	FS WA-S, OR-T	Shoreline (generally within 1 mi of large water bodies) with large trees and prey base of primarily fish. Diet also includes some waterfowl, turtles, and carrion.	Yes		Yes	No

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Sensitive Wildlife Species						
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SPECIES (population segment)	**STATUS***	**PRE-FIELD REVIEW Usual Habitat in Oregon**	**Fall/Spring Survey?**	**Species-Specific Protocol?**	**Habitat/ Range Present at USFS?**	**Species Present at USFS?**
Golden eagle (*Aquila chrysaetos*)		Build nests on cliffs or largest trees. Hunt in open or semi-open areas. May breed in lowlands. Avoid nesting near urban or densely forested habitat.	No		No	
Northern spotted owl (*Strix occidentalis caurina*)	T, WA-E, OR-T	Mature coniferous forest generally used for nesting, roosting, and foraging. Will disperse in early or mid-seral forests.	Yes		Yes	No
Northern spotted owl Critical Habitat		Within the NSA: Designated Critical Habitat includes most Oregon FS land between Wahkeena Creek and Hood River, as well as headwater areas of the little Wind River and Brush Creek watershed in WA.	No		No	
Swainson's hawk (*Buteo swainsoni*)	OR-SV	In summer, found at the eastern edge of the Gorge in plains and steppe. Nests in trees or cliff edges.	No		No	
Ferruginous hawk (*Buteo regalis*)	FS(WA), WA-T, OR-SC	Open prairie and shrub steppe in eastern WA and OR.	No		No	
American peregrine falcon *(Falco peregrines anatum)*	FS, OR-SV, WA-S	Tall cliff (nest) sites within 1 mi of water with sm. bird prey base.	Yes		Yes	No
Northern goshawk (*Accipiter gentilis*)	WA-C, OR-SV	Typically more common east of Cascades in a wide variety of forest ages, structural conditions, and successional stages. Uses stands of mature forest as nesting sites. Typically found between 1,900 and 6,100 feet in Oregon.	No		No	
Burrowing owl (*Athene cunicularia*)	OR-SC WA-C	Breed on eastern side of the Gorge near mammal burrows in sparse vegetation. Detected at Dalles Mtn. Road area.	No		No	
Flammulated owl (*Otus flammeolus*)	WA-C, OR-SV	E. Cascades: cavity nester in mature ponderosa pine and mixed conifer forests with open understory at mid-elevations. Insectivore. Winters S. of US border.	No		No	

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Horned grebe (OR only) (*Podiceps auritus*)	FS (OR), OR-SP	Common winter resident on Columbia River within NSA. Breeds in E OR/WA lakes/reservoirs with rushes/cattails.	Yes		Yes	No
Red-necked grebe (*Podiceps grisegena*)	FS(OR), OR-SC	Breeds in extensive clear, deep-water marshy lakes and ponds in timbered regions.	Yes		Yes	No
Harlequin duck (*Histrionicus histrionicus*)	FS	Winters at coast. Breeds at CRGNSA on ground, usually with 10m of fast moving Cascade tribs. of the Lower and Middle Columbia River, often on rocky islands and banks.	Yes		Yes	No
Bufflehead (*Bucephala albeola*)	FS(OR)	Nests in tree cavities and winters in small flocks on lakes and large rivers.	Yes		Yes	No
Long-billed curlew (*Numenius americanus*)	OR-SV	Found on fields, dry prairie, as well as mudflats. Confirmed only on WA side of CRGNSA, east end of Gorge just east of Smithville.	No		No	
American white pelican (*Pelecanus erythrorhynchos*)	WA-E, OR-SV	Gregarious birds that nest in large colonies on islands within shallow water and marshes free of human disturbance and mammalian predators. Post breeders sometimes seen in Col R. (such as Klickitat Delta). Winters in S U.S. through Mexico.	Yes		Yes	No
Sandhill crane (*Grus canadensis*)	WA-E, OR-SV (tabida ssp.)	Riverine wetland, isolated mtn. meadows/basins. No current breeding popns. in the NSA, some migration.	No		No	
Yellow-billed cuckoo (*Coccyzus americanus*)	C, WA-C, OR-SC	Historical range in WA and OR. No reported breeding occurrences since the 1950s, although individuals have been sighted east of Cascades sporadically. Riparian forests, with cottonwood/thick willow; neotropical migrant. Considered extirpated from WA and OR.	Yes		Yes	No

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Lewis' woodpecker (*Melanerpes lewis*)	FS, WA-C, OR-SC	Open pine/oak woodland, conifer forests, and riparian woodland. Regionally displays seasonal migration to lower elevations during non-breeding season, although in NSA, it is often resident year-round at same location. In NSA, the species found in eastern portions in dry forest types of oak and pine. Cavity nester.	No		No	
White-headed woodpecker (*Picoides albolarvatus*)	FS, WA-C, OR-SC	Central/E. WA/OR closely associated with mature and open ponderosa pine forests. Cavity nester. Not currently documented in NSA.	Yes		Yes	No
Black-backed woodpecker (*Picoides arcticus*)	WA-C, OR-SV	Uncommon Cascades resident usually at mid to high elevations; bulk of range in Canada. Scattered and variable distribution as populations are highly associated with post-fire, insect-infested, habitats in mature forests. Dependent on high density of dead and insect-ridden trees.	No		No	
American three-toed Woodpecker *(Picoides dorsalis)*	OR-SV	Found in conifer forests at mid-high elevations. Especially found in burned areas or areas infested with bark beetles.	No		No	
Pileated woodpecker (*Dryocopus pileatus*)	WA-C OR-SV	Conifer/mixed conifer forests, as well as deciduous stands in valley bottoms with large dead or live trees (or remnants) for foraging and nesting. Primary cavity nester.	Yes		Yes	No
Sage sparrow (*Amphispiza belli*)	WA-C OR-SC	Eastern WA/OR; flat terrain highly associated with big sagebrush, may also use chaparral, and dry foothills. On periphery of habitat in NSA; in the extreme eastern end. No known current pops., although migrants may pass through the NSA. Winters in S OR, and SW U.S. states.	No		No	
Loggerhead shrike (*Lanius ludovicianus*)	WA-C OR-SV	East of Cascades: dry grassland and sagebrush desert habitats. On periphery of habitat in NSA with sightings in east Klickitat county. Neotropical migrant.	No		No	

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Grasshopper sparrow (*Ammodramus savannarum*)	OR-SV	Confirmed in only one area within the Scenic Area boundary (east end) in WA at Stacker Butte. Prefers native bunch grass/steppe with no sage.	No		No	
Oregon vesper sparrow (*Pooecetes gramineus affinis*)	WA-C OR-SC	This subspecies found in the lowland valleys of W WA and OR (Willamette, Klamath, Puget sound) in sparsely vegetated grasslands with scattered tall structures used for song perches, including ag. lands. On periphery of habitat in NSA. Ground nester.	Yes		Yes	No
Slender-billed white-breasted nuthatch (*Sitta carolinensis aculeata*)	OR-SV, W-C	A west-side subspecies of the white-breasted nuthatch. Found in open oak and oak/Douglas-fir forests in western Washington (Skamania, Clark and Cowlitz Counties). Decline directly related to loss of this habitat.	No		No	
Olive-sided flycatcher (*Contopus cooperi*)	OR-SV	Breeds only in conifer forests. Found more in fragmented late-seral forests than less fragmented. May utilize lowland mixed riparian in non-breeding time. Prefers edge.	Yes		Yes	No
Willow flycatcher (*Empidonax traillii adastus*)	OR-SV	Sub-species that exists more in riparian areas (willow thickets) in the Eastern Gorge and east.	Yes		Yes	No
Little willow flycatcher (*Empidonax traillii brewsteri*)	OR-SV	Sub-species that exists more in riparian areas (willow thickets) in the Western Gorge and west.	No		No	
Western bluebird *Sialia mexicana*	OR-SV	Breeds in heart of wooded Gorge (cavity nester) and migrates in eastern Gorge. Seen in small groups in fields or open woods.	Yes		Yes	No
Streaked horned lark (*Eremophila alpestris strigata*)	OR-SC	Nests on sparsely vegetated areas with grasses and forbs. Seen in western Gorge on sand/grass islands. Could be at Sandy River Delta.	No		No	
Black swift (*Cypseloides niger*)	FS(OR), OR-SP	Nests in waterfalls, steep cliffs, and damp caves out of direct sunlight. Highly suspected to be in NSA. Neotropical migrant.	Yes		Yes	No

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SPECIES (population segment)	**STATUS***	**PRE-FIELD REVIEW Usual Habitat in Oregon**	**Fall/Spring Survey?**	**Species-Specific Protocol?**	**Habitat/ Range Present at USFS?**	**Species Present at USFS?**
Purple martin (*Progne subis*)	FS(OR), OR-SC, WA-C	W WA/OR up through Gorge to W Wasco County in OR and Bingen in WA: cavity/crevice nester, often near water. Forages over open water/fields/ forest canopy. Winters in S. America.	Yes		Yes	No
North American wolverine (*Gulo gulo luscus*)	FS, WA-C, OR-T	Conifer Forests. Intolerant of human encounters/disturbance and requires very large home ranges. Locally there has been one confirmed sighting in last several decades from a road-killed juv. male on I-84, near Starvation Creek, Jan 1990.	Yes		Yes	No
Pacific fisher (*Martes pennanti*)	C, FS, WA-E, OR-SC	Found in low and mid-elevation late successional conifer forest, with high canopy cover and large down logs for nesting. Requires large home ranges. Likely extirpated in NSA and adjacent forests; undetected in multi-year surveys.	Yes		Yes	No
Columbian white-tailed deer (Lower Col. R pop only) (*Odocoileus virginianus leucurus*)	E, WA-E, OR-SV (OR = coast pop only)	Historical distribution in floodplains and bottomland riparian of Willamette and Lower Col. R. east to the Klickitat River. Severe riparian habitat loss presently limits this sub-population to a small area between Skamokawa, WA and Clatskanie, OR.	No		No	
White-tailed jackrabbit (*Lepus townsendii*)	WA-C, OR-SV	East of Cascades: open areas with native bunchgrass, sagebrush plains, can also be found in coniferous forests and subalpine meadows. On periphery of habitat in NSA at The Dalles/Dallesport.	No		No	
Washington ground squirrel (*Spermophilus washingtoni*)	C, WA-C, OR-E	Presently found in Columbia basin of WA state in sagebrush/grassland w/ sandy soils; also Giliam, Morrow and Umatilla counties, OR. May have historically been within the eastern edge of NSA.	No		No	
Western gray squirrel (*Sciurus griseus*)	FS(WA), OR-SV WA-T	Associated with open mixed oak/conifer woodland, typically within ½ mi of water source. WA is its northernmost range, with core habitat in Klickitat county. Known to occur in Hood River and nearby areas east, within OR. Easily confused with non-native/ invasive Eastern gray squirrels and fox squirrels.	No		No	

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Townsend's big-eared bat (*Corynorhinus townsendii*)	FS, WA-C, OR-SC	Throughout Western U.S. Roost and hibernaculum sites within caves, buildings, mines and bridge undersides, with exacting temp, humidity, and physical requirements. Very intolerant of human disturbance which results in loss of critical fat reserves during torpid period.	Yes		Yes	No
Spotted bat (*Euderma maculatum*)	OR-SV	Wasco County record along Deshutes River in dry steppe. Found by streams, cliffs. CRGNSA presence unknown.	No		No	
Fringed myotis (*Myotis thysanodes*)	FS(OR), OR-SV	Nursery colonies and roosts in mines, caves, oak trees, mesic coniferous forest, buildings and similar. Intolerant of human disturbance. Sub-species suggested to occur west of the Cascades in southern WA, Oregon, and northern CA. Documented in Little W. Salmon subbasin in 1996.	Yes		Yes	No
Pacific pallid bat (*Antrozous pallidus*)	FS, OR-SV	Arid area specialist east of Cascades. Roosts in rock crevices, caves (buildings), and sometimes large trees, especially when near open and dry areas. Feeds primarily on the ground on large insects, scorpions, lizards, and other small prey.	Yes		Yes	No
California myotis (*Myotis californicus*)	OR-SV	Found in coniferous forest, oak and ponderosa pine woodlands. Roosts beneath loose bark and tree crevices. Maternity colonies in cliff crevices, buildings and bridges. Winter in mines/caves/buildings.	Yes		Yes	No
Long-legged myotis (*Myotis volans*)	OR-SV	Maternity roosts include older conifers (>100 years), rock crevices, cliffs, buildings. Prefer edge in areas that get daily sun. Hibernates in winter.	No		No	
Hoary bat (*Lasiurus cinereus*)	OR-SV	Roost in trees 10-15 feet up along forest borders. Active at night. Migrate south in winter returning in spring.	Yes		Yes	No

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Silver-haired bat (*Lasionycteris noctivagans*)	OR-SV	Prefer roosting behind loose tree bark in old growth areas (conifer, mixed, or deciduous). Maternity colonies in tree cavities. Area with high snag densities utilized. Forage in disturbed areas at low elev. in clearings, by roadways or water. Hibernate in trees, cliffs.	Yes		Yes	No
Western ridged mussel (*Gonidea angulata*)	FS	Low to mid-elevation cold clean streams and rivers of the Western U.S. Mainly east of the Cascades locally. Known stronghold in the larger rivers of the Snake and Columbia River systems.	No		No	
Giant Columbia River limpet or Shortface lanx (*Fisherola nuttalli*)	FS-(OR), WA-C	In CRGNSA, found in the lower Col. R. near Bonneville Dam in OR. Also found in Deschutes R. (OR). Inhabits cold, unpolluted, medium to large streams with fast-flowing, well-oxygenated water and cobble boulder substrate at edge of rapids.	Yes		Yes	No
Great Columbia River spire snail or Columbia pebblesnail (*Fluminicola Columbiana or F. fuscus*)	FS-(OR) WA-C	Confirmed in a few sites along the Columbia, Okanogan, Wenatchee and Methow Rivers in WA, and the Deschutes River in OR. Found in larger tributaries and rivers on upper surfaces of stable rocks in fast current in rel. shallow, cold, oxygenated water.	Yes		Yes	No
Puget Oregonian (*Cryptomastix devia*)	FS	Western Cascade Range in Low/Mid elevations (CRGNSA, GPNF, Clackamas RD. HR RD, ZZ RD, Olympic NF, Salem BLM, Hebo RD, Wenatchee NF, MBSNF): Moist conifer forests, associated with big-leaf maple. Often found on or under hardwood logs, leaf litter, or under sword fern, moist rocks/talus. Young devia may be under mosses on trunk of big-leaf maple.	Yes		Yes	No

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Columbia Oregonian (*Cryptomastix hendersoni*)	FS, WA-C	Two known locations only: the CRG, in scattered locations near seeps and streams along both sides of the Columbia River, from near The Dalles to near Rufus, OR; and from upland locations in the Mount Hood National Forest. Within 328 feet of streams, seeps, and springs (low elev.) in steppe communities. May also be in mid elev. mature closed canopy forests among moist talus, leaf litter, or shrubs, or under logs or other debris.	Yes		Yes	No
Evening fieldslug (*Deroceras hesperium*)	FS-(OR)	Low to mid-elevation from the Cascade range to the Pacific Ocean, with majority of the currently documented sites east of the Cascade crest. The evening fieldslug is associated with perennially wet meadows in forested habitat, microsites include a variety of low vegetation, litter and debris and rocks/talus.	Yes		Yes	No
Barren juga (*Juga hemphilli hemphilli*)	FS	Limited distribution in Columbia River Gorge (Clark and Skamania Co, WA.), Johnson Creek, and Mt. Hood NF. Also suspected to occur in Gifford-Pinchot NF. Found in smaller low elevation streams, with low gradient, stable gravel substrate, moderate velocity, and highly-oxygenated, cold water.	Yes		Yes	No
Purple-lipped juga (*Juga hemphilli maupinensis*)	FS-(OR)	Suspected in CRGNSA on the east side (OR). Documented in Deschutes drainage. Found at low-elevation large streams in well-oxygenated and minimally impacted gravel-cobble riffles in cold water.	No		No	
Dalles juga (*Juga hemphilli dallesensis*)	FS-(OR)	The genus *Juga* grazes on rock surfaces and deciduous leaf litter, with seasonal migrations both upstream and downstream. Dalles juga found at low elevation large springs and small-medium streams with a stable gravel substrate and fast-flowing, unpolluted, highly-oxygenated cold water. Found ~5 mi w. of Hood River to The Dalles in the Columbia Gorge and Mill Creek.	Yes		Yes	No

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Columbia Gorge caddisfly (*Neothremma andersoni*)	FS-(OR)	Known only in the CRG in Wahkeena Creek, Multnomah Co., OR – apparently endemic to this creek system. Larvae and pupa common above Gorge escarpment, less so as stream flows out onto the Col R. floodplain.	No		No	
Wahkeena Falls flightless stonefly (*Zapada wahkeena*)	FS-(OR)	Flightless – dispersal is only by aquatic matures. Known only in seeps by waterfalls at Wahkeena Falls – CRGNSA. Water quality important.	No		No	
Dalles sideband (*Monadenia fidelis minor*)	FS, WA-C	Known from watersheds tributary to the Columbia Gorge from Hood River east to the vicinity of The Dalles (on both sides of the Columbia River) and in upland sites in watersheds tributary to the lower Deschutes River in Wasco County. Within 656 feet of streams, seeps, or springs, in steppe or dry forest plant communities (within talus and moist rocky areas). May be found among rocks, shrubs/veg. and down wood.	No		No	
Crowned tightcoil (*Pristiloma pilsbryi*)	FS-(OR)	Historical range probably from southern AK to southern OR. Currently known from Clallam and Pacific Co., WA, suspected in Grays Harbor, Wahkiakum, Cowlitz and Clark Co., WA and Multnomah, Clatsop and Columbia Co., OR. Found in very moist forests, including floodplains, in decaying leaf litter, commonly under dense salal, vine maple, waterleaf or other deciduous vegetation.	No		No	
Yuma skipper butterfly (*Ochlodes yuma*)	FS-(OR)WA-C	Main pop. in Great Basin area w/outliers in central and eastern OR/WA. The only record within CRGNSA, in 1999, found at Maryhill on ornamental *Miscanthus*. Found around reed beds in and around freshwater marshes, streams, oases, ponds, seeps, sloughs, springs, and canals. It is closely associated with its primary host plant *Phragmites australis* (giant or common reed). Flies early July to early September only.	No		No	

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Johnson's hairstreak butterfly *(Callophrys [Mitoura] johnsoni)*	FS, WA-C	Cascades, Coast, Siskiyou, Blue, Wallowas mtns: coniferous forest old-growth obligate.	No		No	
Jackson Lake springsnail (*Pyrgulopsis robusta*)	FS-(OR)	Occupies coldwater habitats, predominantly large springs, and spring-influenced portions of streams, lakes, rivers. Found on a variety of substrates, including gravel to cobble-size substrates. Important to maintain perennial water quality.	Yes		Yes	No
Caddisfly (*Farula constricta*)	FS-(OR)	Presently known in only four to five small, cold-water streams in the Gorge (Eagle Creek (2003); Mist Falls near Wahkeena Creek (1989); Oneonta Creek in Oneonta Gorge (2003); a small unnamed stream 0.9 mile west of Oneonta Creek (1989); and a stream between Multnomah Falls and Oneonta Falls (2003, possibly the same stream as the 1989 record). It is possible that the species is extremely isolated in its distribution and confined to a few short reaches of the above streams. Threats: sedimentation, eutrophication, chemical runoff from e.g., road projects.	No		No	
Mardon skipper (*Polites mardon*)	C, FS, WA-E	Historical distribution unknown. Present known distribution is disjunct: N CA, Puget sound and south Cascades of WA. Habitat of open fescue grasslands, riparian, or meadows with nectar plant source. No known populations in the NSA. Species decline likely due to loss of native grass meadows and prairie habitat throughout NW.	No		No	

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Tall agoseris *Agoseris elata*	OR-2 WA-S FS-S	Meadows and open woods to mid-elevations.				
Howell's bentgrass *Agrostis howellii*	OR-1 FS-S Endemic	Moist rocks on south side of Gorge Multnomah and Hood River counties.				
Grand redstem *Ammannia robusta*	OR-3	Riparian mudflat wetlands, around ponds, rivers and other wet places, riverine emergent wetland communities growing in areas that are inundated until mid-summer and periodically throughout the growing season.				
Sickle-pod rock cress *Arabis sparsiflora* var. *atrorubens*	OR-2 FS-S	Eastside, low elevation. Arid, sagebrush and ponderosa pine habitats.				
Northern wormwood *Artemesia campestris* spp. *borealis* var. *wormskioldii*	OR-E OR-1 WA-E FS-S US-C	Gravely beach areas of Columbia. Miller Island in Gorge.				
Hood River milk-vetch *Astragalus hoodianus*	OR-2 Endemic	Dry open areas of east Gorge. Grows in dry hillsides, savannas.				
Puget balsamroot *Balsamorhiza deltoidea*	FS-strategic	Salt water shorelines, prairies, meadows, shrub steppe and other open areas at low elevations.				
Oregon bolandra *Bolandra oregana*	WA-S FS-S	Wet basalt cliffs				
Lance-leaved grape-fern *Botrychium lanceolatum*	OR-2 FS-S	Moist, wet areas in mountains.				
Moonwort *Botrychium lunaria*	OR-2 FS-S	Moist wet areas but rarely in meadows.				

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Mountain grapefern *Botrychium montanum*	OR-2 FS-S	Forested/open areas in conifer forest zones.				
Brewer reedgrass *Calamagrostis breweri*	OR-2 FS-S	Stream banks, lake margins, sub-alpine to alpine meadows.				
Howell's reedgrass *Calamagrostis howellii*	Endemic	Rocky banks and crevices of cliffs within the Gorge.				
Long-bearded sego lily *Calochortus longebarbaus* var. *longebarbatus*	WA-S FS-S	East slope of Cascades.				
Dense sedge *Carex densa*	WA-T FS-S	Wet areas on both sides of Cascades.				
Lesser panicled sedge *Carex diandra*	OR-SEN	Swampy, marshy, or boggy areas, including wet meadows, fens, swales, ditches, and wet sandy beaches of non-alkaline lakes and pond edges.				
Different nerve sedge *Carex heteroneura* *Carex atrata* var. *erecta*	FS-S	Montaine.				
Flaccid sedge *Carex leptalea*	OR	Mossy or wet woods, conifer swamps and bogs, wet, often calcareous (including subalpine) meadows, fens, swales, lakeshores, stream banks, also damp, shaded rock ledges, marshy fields, and swampy ditches; 0–8,858 ft. Occasional in sphagnum bogs and swamps, often along small streams, lake shores, and on low, wet ground. Lower to higher elevations.				
Pale sedge *Carex livida*	OR-2 FS-S	Willamette Valley.				
Large-awn sedge *Carex macrochaeta*	WA-T OR-2 FS-S	Moist open places, coastal but suspected in Gorge.				

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Retrorse sedge *Carex retrorsa*	OR	Wet thickets, swamps, marshes, lake shores.				
Native sedge *Carex vernacula*	OR-2 FS-S	Alpine to sub-alpine. Dwarf size.				
Golden paintbrush *Castilleja levisecta*	T OR-E OR-1 WA-E FS-S	Open fields west side of Cascades.				
Cliff paintbrush *Castilleja rubicola*	OR-2 FS-S	Rocky cliffs at low to moderate elevations.				
Golden chinquapin *Chrysolepis chrysophylla*	WA-S FS-S	Open to closed forest openings Low to mid elevations.				
Bulb-bearing water-hemlock *Cicuta bulbifera*	OR-2 WA-S FS-S	Wet places to standing water. Low elevations.				
Tall bugbane *Cimicifuga elata*	OR-1 WA-S FS-S	Hardwood and mixed forest on west side.				
Few-flowered blue-eyed Mary *Collinsia sparaiflora* var. *bruceae*	WA-S FS-S	Dry slopes with sparse vegetation on east side of Cascades. Low elevations.				
Three-leaf goldthread *Coptis trifolia*	OR-2 WA-1 FS-S	Boggy, wet seepage areas, sphagnum hummocks, muskegs to deep woods, and mossy places. Wasco County at elevations ranging from 3280-3800 feet.				
Cold-water corydalis *Corydalis aqua-gelidae*	OR-1 WA-S FS-S	Along cold streams on west side of Cascades at elevations ranging from 2500 to 3800 feet.				

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Beaked cryptantha *Cryptantha rostellata*	WA-T FS-S	Dry open areas, east side Cascades.				
Beaked cryptantha *Cryptantha flaccida*	WA-SEN	Some of the driest microsites within the Columbia Basin at elevations ranging from 600 to 2900 feet.				
Douglas' draba *Cusickiella douglasii*	WA-SEN	Windswept rocky ridges, granitic rock screes, loose volcanic hillsides, red barren hills, rocky flats and serpentine ridges.				
Shining cyperus *Cyperus bipartitus*	FS-S	Streambanks and other wet, low places. Riverine wetlands in small embayments and backwaters of the Columbia River. Habitats dominated by low-growing herbaceous wetland species. Tolerant of alkaline conditions. Low elevations from 350 to 1200 feet.				
Clustered lady's-slipper *Cypripedium fasiculatum*	OR-2 WA-S FS-S	Open to closed forested woodlands/forest. East side of Cascades.				
Mountain lady's-slipper *Cypripedium montanum*	OR	Mid- to late-successional forest communities; mixed conifers or mixed evergreen/oak woodland. 1500 ft to 6500 ft.				
Fringed waterplantain *Damasonium californicum*	WA-T FS-S	Sloughs, marshes and other standing waters.				
Peacock larkspur *Delphinium pavonaceum*	OR	Prairie.				
Pale larkspur *Delphinium leucophaeum*	WA-E OR-1	Westside Multnomah.				
Nuttall's larkspur *Delphinium nuttallii*	OR-2	Westside.				
Smooth-leaf Douglasia *Douglasii laevigata* var. *laevigata*	Endemic FS-strategic	Basalt cliffs and rocky out-crops, low elevation through the Gorge.				
Short seeded waterwort *Elatine brachysperma*	OR-SEN	Moist, disturbed soils, margins of vernal pools, and sand bars along rivers at elevations below 600 feet.				

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Howell's daisy *Erigeron howellii*	OR-1 WA-T Endemic FS-S	Open areas on ridges and rocky areas.				
Diffuse stickseed *Hackelia diffusa*	OR	Wooded areas, cliffs, talus, wooded flats and slopes.				
Western hedysarum *Hedysarum occidentale* var. *occidentale*	WA-SEN	Meadows, shrubfields, bare rock outcrops, boulder-fields, and talus-slopes at an elevation of 3150 to 6500 feet.				
Salt heliotrope *Heliotropium curassavicum*		Stream/river banks, near lakes or ponds. Not known from Wasco County.				
Currant-leaf alumroot *Heuchera grossularifolia* var. *tenuifolia*	WA-S FS-S	Cliffs, often shaded, along streams or rivers in East Gorge.				
Long-beard hawkweed *Hieracium longiberbe*	Endemic	Open areas throughout Gorge. Cliffs; 100-325 feet elevation; OR, WA.				
Holy grass *Hierochloe odorata*		Moist slopes, meadows, stream banks.				
Howellia *Howellia aquatilis*	T OR-1 WA-T FS-S	Low elevation wetlands.				
Fir club-moss *Huperzia occidentalis*		Terrestrial in shaded conifer forests and swamps, often along streams and in marshes.				
Kellogg's rush *Juncus kelloggii*	FS-strategic WA-SEN	Sandy to clayey damp soils; vernal pools, seepage areas, low spots.				
Howell's rush *Juncus howellii*	WA-SEN	Moist areas in the mountains.				

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Nuttall's quillwort *Isoetes nuttallii*	WA-SEN	Seasonally wet ground, seepages, temporary streams, and mud near vernal pools. Typically, 200-345 feet elevation.				
Columbia Lewisia *Lewisia columbiana* var. *columbiana*	OR-2 FS-S	Open rocks areas in west Gorge, generally middle to high elevations.				
Baker's linanthus *Linanthus bolanderi*	WA-S FS-S	Dry open areas in East Gorge.				
Twayblade *Liparis loeselii*	WA-E FS-S FS-strategic	Wet or damp areas within forest.				
Aristulate lipocarpha *Lipocarpha aristulata*	SEN	Wet soil. Shorelines and islands below high water on silty substrates from an elevation of 360 to 420 feet.				
Smooth desert parsley *Lomatium laevigatum*	OR-2 WA-T FS-S Endemic	Basalt cliffs in east Gorge.				
Salmon River lomatium *Lomatium salmoniflorum*	OR-2	Grows along rivers. Wasco County.				
Suksdorf's desert parsley *Lomatium suksdorfii*	OR-2 WA-S FS-S Endemic	Open wooded or open areas in east Gorge.				
Watson's desert-parsley *Lomatium watsonii*	OR-2 FS-S	Hood River and Wasco Counties.				
Columbia Gorge broad-leaf lupine *Lupinus latifoius* var. *thompsonianus*	Endemic	Open areas in pine/oak woodlands.				

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Curved woodrush *Luzula arcuata*	OR-2 WA-S FS-S	Hood River County.				
Northeren bog clubmoss *Lycopodiella inundata*	OR-2 WA-S FS-S	Wet, sandy places, wetlands adjunct to lakes, and swampy ground. Westside.				
Ground cedar *Lycopodium complanatum*	OR-2 FS-S	Westside - Open woodlands, thickets, heathland and rocky slopes; common across Northwestern Ontario's boreal forest, north to treeline; circumpolar.				
White meconella *Meconella oregana*	OR-1 WA-T FS-S	Oak woodlands in east Gorge.				
Northern microseris *Microseris borealis*	WA-S FS-S	Low to mid elevation wetlands.				
Columbia monkey flower *Mimulus jungermannioides*	OR-1 FS-S FS-strategic	Wet areas in east Cascades.				
Pulsifer's monkey-flower *Mimulus pulsiferae*	WA-S FS-S	Wet areas.				
Suksdorf's monkey-flower *Mimulus suksdorfii*	WA-S FS-S	Open, moist, or rather dry places, from the valleys and foothills to moderate or occasionally rather high elevations in the mountains.				
Red poverty weed *Monolepis pusilla*	WA-SEN	Desert regions, often found on saline or alkaline soil.				
Branching montia *Montia diffusa*	WA-S FS-S	Up-turned root disturbances within the forest of Cascades.				
Howell's montia *Montia howellii*	FS-S	Multnomah County.				

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Marigold navarretia *Navarretia tagetina*	WA-T FS-S	Dry, open areas in east Gorge.				
Tufted evening primrose *Oenothera caespitosa* ssp. *marginata*	WA-SEN	Road cuts, dry hills, arid and rocky slopes in open and wooded areas, and in desert regions.				
Adder's-tongue *Ophioglossum pusillum*	OR-2 WA-T FS-S	Meadows and woods.				
Rosy owl-clover *Orthocarpus bracteosus*	WA-SEN	Moist transitional meadows. Full sun with little or no shrub or tree cover.				
Western yellow oxalis *Oxalis suksdorfii*	FS-strategic	Meadows and moist woods, and sometimes on dry open slopes.				
Fringed grass-of-Parnassus *Parnassia frimbriata* var. *hoodiana*	WA-T FS-S	Bogs, stream banks, wet areas Mult., Hood, and Washington counties, OR.				
Barrett's penstemon *Penstemon barrettia*	OR-1 WA-T FS-S Endemic	Rocky cliffs, talus slopes in east Gorge.				
Variable hot-rock penstemon *Penstemon deustus* var. *variabilis*	FS-strategic	Dry foothills and lowlands.				
Henderson phlox *Phlox hendersonii*	OR-2 FS-S	Hood River County.				
Pine-foot *Pityopus californica*	WA-T FS-S	Low elevation mixed conifer forest.				
Coral seeded popcorn flower *Plagiobothrys figuratus* ssp. *corallicarpus*	OR-1 FS-S	Vernal pool habitats in rocky, open areas in grassland meadows.				

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Canyon bog-orchid *Platanthera sparsiflora*	WA-T FS-S	Open, wet areas, seeps and bogs. Elevations in Washington range from 800 to 5200 feet.				
Pacific bluegrass *Poa gracillima* var. *multnomae*	Endemic	Mostly on s. side of Columbia Gorge in rocky, shaded cliff near waterfalls.				
Loose-flowered bluegrass *Poa laxiflora*	WA-S FS-S FS-strategic	Moist shaded woods to open rocky slopes up to mid-elevations. Primarily a lowland species of wooded areas. Open meadows along river banks.				
Weak bluegrass *Poa marcida*	OR-4	Breaks in rich, mesic, generally old growth forests of the Pacific coast, from Vancouver Island through the western foothills of the northern Cascade Mountains to central Oregon.				
Wheeler's bluegrass *Poa nervosa* var. *nervosa*	WA-S FS-S	Limited to lower Columbia River and adjacent tributaries. Open slopes, ridges and talus slopes.				
Great polemonium *Polemonium carneum*	WA-T FS-S	Mid elevation forests in west Gorge. elevations ranging from 200 to 2000 ft.				
Dotted smartweed *Polygonum punctatum (Persicara punctata)*	OR Dropped?	Swamps, shallows; pond, stream, and lake edges.				
Brewer's cinquefoil *Potentilla breweri*	WA-T FS-S	Moist to dry and exposed areas at middle and upper elevations. alpine to midmontaine areas.				
Diverse-leaved cinquefoil *Potentilla diversifolia* var. *perdissecta*	WA-S FS-S	Moist, shady and open areas, gravelly soils of glacially carved areas, ledges and rocky slopes, stream banks. Alpine to subalpine or montane areas.				
Villous cinquefoil *Potentilla villosa* var. *parviflora*	OR-2 FS-S	Hood River County.				
Mountain buttercup *Ranunculus populago*	WA-S FS-S	Moist meadows, stream terraces, riparian corridors, adjacent to a perennial streams and bogs at 4480 to 5920 feet.				

TABLE B. List of sensitive flora species for Oregon side of CRGNSA[1].						
Sensitive Plant Species						
			PLANNING		**FIELD RECONNAISSANCE**	
SPECIES	**STATUS***	**PRE-FIELD REVIEW Usual Habitat in Oregon**	**Fall/Spring Survey?**	**Species-Specific Protocol?**	**Habitat/ Range Present?**	**Species Present?**
Obscure buttercup *Ranunculus reconditus* (*R. triternatus*)	OR-E OR-1 WA-E FS-S Endemic	Open grasslands or open areas in pine/oak woodlands. East Gorge.				
Thompson mistmaiden *Romanzoffia thompsonii*	FS-S OR-1	Seepy rocks. Found at higher elevations: 700-6100 feet.				
Toothcup *Rotala ramosior*	OR-2	Wet, swampy places; lake and pond margins; along rivers.				
Columbia yellow cress *Rorippa columbiae*	OR-1 WA-E FS-S	Mud flats along Columbia River.				
Soft-leafed willow *Salix sessilifolia*	WA-SEN	Coastal. Lowland habitats: riparian forest, dredge spoils, silty bank at the upper edge of intertidal zone.				
Scheuchzeria *Scheuchzeria palustris* var. *americana*	OR-2 FS-S	Multnomah County.				
Pale bulrush *Scirpus pallidus*	OR-3	Wet meadows, stream banks, springs.				
Scribner-grass *Scribneria bolanderi*	WA-S FS-S	Dry, sandy to rocky soil.				
Oregon white-top aster *Sericocarpus oregonensis* var. *oregonensis*	WA-SEN	Open woodlands and dry, open, often rocky coniferous forest 320 to 1150 ft - prefers dry, open, well draining environments dominated by trees.				
White-topped aster *Sericocarpus rigidus*	SOC OR-T OR-1 SEN	Gravelly, glacial outwash soils, deep, poorly drained clayey soils, open, grassy, seasonally moist prairie and savannah habitats, at elevations ranging from about 90-1250 ft.				

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Meadow checker-mallow *Sidalcea campestris*	OR-C OR-4	Prairie / grasslands roadside ditches.				
Hairy-stemmed checker-mallow *Sidalcea hirtipes*	OR-1 WA-E FS-S	Mesic habitats associated with creeks and streams.				
Pale blue-eyed grass *Sisyrinchium sarmentosum*	OR-1 WA-T FS-S	Wet/dry meadows at mid to high elevations.				
Western ladies' tresses *Spiranthes porrifolia*	WA-S FS-S	Open moist meadows.				
Kruhsea *Streptopus streptopoides*	OR-2	Hood River, Multnomah Counties. Dense, damp coniferous forests.				
Violet suksdorfia *Suksdorfia violacea*	OR-2 FS-S	Moist cliffs at low elevations in Mid-Gorge.				
Oregon sullivantia *Sullivantia oregana*	OR-1 WA-E FS-S Endemic	Wet basalt cliffs near waterfalls at low elevations in the west Gorge. Elevation ranges from 250 to 1600 feet.				
Columbia kittentails *Synthyris stellata*	Endemic	Shaded banks, cliffs and ridges in the west Gorge.				
Strickland's tauschia *Tauschia stricklandii*	OR-2 FS-S	Wet subalpine meadows in the west Gorge. 5000-6500 elevations.				
Flat-leaved bladderwort *Utricularia intermedia*	WA-S FS-S	Slow moving water or streams.				
Lesser bladderwort *Utricularia minor*	OR-2 FS-strategic	Low nutrient lakes and peatbog pools in the lowland and montane zones. Wasco County. Wasco County.				
Wild bog cranberry *Vaccinium oxycoccos*	OR-4	Ombrotrophic sphagnum bogs and minerotrophic fens in moist coastal and boreal forests.				

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Siskiyou false hellebore *Veratrum insolitum*	WA-T FS-S	Dry open woods and brush in the middle Gorge - elevations greater than 900 ft.				
Dotted water-meal *Wolffia borealis*	FS-S OR-2	Freshwater lakes, ponds, and slow streams. Elevation: 350-1500 feet.				
Columbia water-meal *Wolffia Columbiana*	OR-2	Freshwater lakes, ponds, and slow streams below 650 feet.				
Golden alexanders *Zizia aptera*	OR-3	Occurs naturally in small colonies on wet soils- prefers wet sites, but is very tolerant of dry conditions in the summer.				
FUNGI						
Giant polypore fungus *Bridgeoporus nobilissimus*	OR-1	On boles of noble firs. Multnomah County.	No		No	
Macowanites mollis	OR-SEN		No		No	
Mythicomyces corneipes	OR-SEN	FUNGUS; Bogs, but also frequently inundated areas associated with conifers and/or alders.	Yes		Yes	No
Ramaria spinulosa var. *diminutiva*	OR-SEN	FUNGUS; Coral mushroom; on humus or soil.	Yes		Yes	No
Rhizopogon exiguus	OR-SEN	FUNGUS; Puffball mushroom, alder-associated.	Yes		Yes	No
Albatrellus caeruleoporus	FS strategic	FUNGUS	No		No	
Albatrellus dispansus	FS strategic	FUNGUS	No		No	
Albatrellus skamanius	FS strategic	FUNGUS	No		No	
Clitocybe subditopoda	FS strategic	FUNGUS; Conifer-associated, may be widespread and locally abundant; extremely hygrophanous caps, obviously decurrent gills.	Yes		Yes	No
Cortinarius cyanites	FS strategic	FUNGUS; Blue cortinarius; associated with Douglas fir and hemlock.	Yes		Yes	No
Glomus radiatum	FS strategic	FUNGUS	No		No	

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Mycena hudsoniana	FS strategic	FUNGUS	No		No	
Mycena quinaultensis	FS strategic	FUNGUS	No			
Mycena tenax	FS strategic	FUNGUS	No		No	
Octaviania macrospora	FS strategic	FUNGUS	No		No	
Phaeocollybia lilacifolia	FS strategic	FUNGUS; lilac-gilled, distinctive cortinarius species; conifer-associated.	Yes		Yes	No
Pseudaleuria quinaultiana	FS strategic	FUNGUS; Ascomycete with bright red-orange fruiting body; mixed forest on ground.	Yes		Yes	No
Ramaria abietina	FS strategic	FUNGUS; Coral mushroom, turning blue-green when branching is bruised.	Yes		Yes	No
Ramaria conjunctipes var. sparsiramosa	FS strategic	FUNGUS; coral mushroom, hemlock-associated; distinctive salmon-pink/salmon-yellow branches with yellow tips.	Yes		Yes	No
Ramaria rubribrunnescens	FS strategic	FUNGUS; red-brown branched coral mushroom.	Yes		Yes	No
Rhizopogon oswaldii	FS strategic	FUNGUS; puffball mushroom.	Yes		Yes	No
Rickenella swartzii	FS strategic	FUNGUS; strongly decurrent, with strongly contrasting two-toned cap; co-occurs with/on moss.	Yes		Yes	No
MOSSES/LIVERWORTS						
Andreaea schofieldiana	OR-SEN	MOSS	No		No	
Barbilophozia lycopodioides	OR-SEN	LIVERWORT	No		No	
Cephaloziella spinigera	OR-SEN	LIVERWORT	No		No	
Encalypta brevicollis	OR-SEN	MOSS; Soil on ledges and in crevices on cliffs, reported from both igneous and siliceous substrates.	No		No	

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Encalypta brevipes	OR-SEN	MOSS	No		No	
Entosthodon fascicularis	OR-SEN	MOSS; Banded-cord moss; may occur in moist habitat and may be associated with oak species; unlikely.	Yes		Yes	No
Gymnomitrion concinnatum	OR-SEN	LIVERWORT; Hood River and Multnomah Counties	No		No	
Haplomitrium hookeri	OR-SEN	LIVERWORT	No		No	
Herbertus aduncus	OR-SEN	LIVERWORT; Exposed, dry, montane, windswept sites, in generally moist, protected microsites on rock outcrops, in crevices, and on ledges, wedged among stones or roots - on wet, shady cliffs.	No		No	
Lophozia laxa	OR-SEN	LIVERWORT; Restricted to well-developed hummocks of *Sphagnum* in fens and bogs along the coast and in the Cascade Range in forest types.	No		No	
Marsupella condensata	OR-SEN	LIVERWORT	No		No	
Marsupella sparsifolia	OR-SEN	LIVERWORT	No		No	
Preissia quadrata	OR-SEN	LIVERWORT; range of elevations; occurs in rocky habitat and near creeks.	Yes		Yes	No
Schistidium cinclidodonteum	OR-SEN	MOSS	Yes		Yes	No
Schistostega pennata	OR-SEN	MOSS	Yes		Yes	No
Scouleria marginata	WA-SEN	MOSS. 3,281-5,906 ft	No		No	
Tetraphis geniculata	OR-SEN	MOSS; Moist forests with large down logs.	Yes		Yes	No
Andreaea nivalis	FS-strategic	MOSS	Yes		Yes	No
Anomobryum filiforme	FS-strategic	MOSS	Yes		Yes	No
Barbilophozia barbata	FS-strategic	LIVERWORT	Yes		Yes	No
Chiloscyphus gemmiparus	FS-strategic	LIVERWORT	Yes		Yes	No
Codriophorus ryszardii	FS-strategic	MOSS	Yes		Yes	No

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Encalypta brevicollis	FS-strategic	MOSS; Soil on ledges and in crevices on cliffs, reported from both igneous and siliceous substrates.	No		No	
Entosthodon fascicularis	FS-strategic	MOSS; Banded-cord moss; may occur in moist habitat and may be associated with oak species; unlikely.	Yes		Yes	No
Plagiobryum zieri	FS-strategic	MOSS	Yes		Yes	No
Plagiopus oederiana	FS-strategic	MOSS	Yes		Yes	No
Platyhypnidium riparioides	FS-strategic	MOSS	Yes		Yes	No
Porella vernicosa ssp. *fauriei*	FS-strategic	LIVERWORT	Yes		Yes	No
Scapania gymnostomophila	FS-strategic	LIVERWORT	Yes		Yes	No
Schistostega pennata	FS-strategic	MOSS; Mineral soil in shaded pockets of overturned tree roots, or at entrances to caves, or animal burrows.	No		No	
Scouleria marginata	FS-strategic	MOSS	Yes		Yes	No
Tetraphis geniculata	FS-strategic	MOSS; Moist forests with large down logs.	Yes		Yes	No
Thamnobryum neckeroides	FS-strategic	MOSS	Yes		Yes	No
LICHENS						
Lobaria linita	OR-SEN	LICHEN; lung lichen; strongly associated with old growth forests; unlikely.	Yes		Yes	No
Microcalicium arenarium	OR-SEN	LICHEN	No		No	
Pilophorus nigricaulis	OR-SEN	LICHEN; moist talus slopes, outcrops; present in treeless habitat only; white lichen with distinctive black apothecia present year-round; unlikely.	Yes		Yes	No
Calicium quercinum	FS-strategic	LICHEN	No		No	
Cladonia norvegica	FS-strategic	LICHEN; powderhorn lichen associated with decaying wood of Douglas fir, hemlock, Sitka spruce; sea level to 4,265 ft.	Yes		Yes	No
Dendriscocaulon intricatulum	FS-strategic	LICHEN	Yes		Yes	No

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Dermatocarpon meiophyllizum	FS-strategic	LICHEN	Yes		Yes	No
Hypogymnia duplicata	FS-strategic	LICHEN; Mid-elevation moist western hemlock stands, old-growth Douglas-fir, moist Pacific silver fir or noble fir forests.	No		No	
Hypotrachyna riparia	FS-strategic	LICHEN	Yes		Yes	No
Leptogium burnetiae	FS-strategic	LICHEN	Yes		Yes	No
Pilophorus nigricaulis	FS-strategic	LICHEN	Yes		Yes	No
Usnea longissima	FS-strategic	LICHEN	Yes		Yes	No
Usnea rubicunda	FS-strategic	LICHEN	Yes		Yes	No

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[1] Key to table abbreviations:

FS = Forest Service Region 6 (OR/WA) sensitive species
Endangered Species Act (federal) listed species:
E = Endangered
Th = Threatened
S = Sensitive
C = Candidate
P = Proposed

OR = Oregon state listed (E, T, or see below)
SC = Sensitive Critical
SV = Sensitive Vulnerable
SP = Sensitive Peripheral or naturally rare
SU = Sensitive Undetermined status
1 = Not state-listed but on ORBIC List 1
2 = Not state-listed but on ORBIC List 2
3 = Not state-listed but on ORBIC List 3
4 = Not state-listed but on ORBIC List 4

NI/NE = No Impact/No Effect.
MIIH = May Impact Individuals or Habitat, but Will not Likely Contribute to a Trend Towards Federal Listing or Loss of Viability to the Population or Species.
WIFV = Will Impact Individuals or Habitat with a Consequence that the Action May Contribute to a Trend Towards Federal Listing or Cause a Loss of Viability to the Population or Species.
BI = Beneficial Impact.
NLAA = May affect, but is Not Likely to Adversely Affect.
LAA = May affect, and will Likely Adversely Affect.

APPENDIX B
USFWS BIOLOGICAL ASSESSMENT

[Insert Appendix B here]

APPENDIX C
NOAA FISHERIES NOTIFICATION FORM

[INSERT APPENDIX C HERE]