2019

USFS REGION 6 RESTORATION SERVICES TEAM

Vegetation and Fungi Survey Report

Marys Peak
Bonneville Power Administration
Communications Site Project:
West Point Spur Component

April 11, 2019

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Forest Service Region 6 Restoration Services Team**

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INTRODUCTION

The Bonneville Power Administration (BPA) needs to maintain and upgrade the existing BPA communications site located at Marys Peak, approximately 15 miles southwest of Corvallis, in Benton County, Oregon. Some communications equipment at the site is outdated and unstable and needs to be replaced. The site needs a more reliable back-up power source due to potential power outages. These proposed actions are part of the Marys Peak BPA Communications Site Project (Project).

The Project has four action Alternatives in addition to the No Action Alternative. Each Alternative has two geographic components. An unobstructed microwave beam path is needed between two communications sites in two different locations in order for voice and other data to be transmitted in either direction between them.

BPA contracted with the US Forest Service Region 6 Restoration Services Team (RST) to provide vegetation services for the Project. During 2017, only the Project area associated with the Marys Peak component of Alternative 2 and Alternative 3 were developed enough to define a vegetation survey area. RST performed field surveys and documented vegetation within the Marys Peak vegetation survey area in support of the environmental review of the Project. The results of that survey are the subject of a previous report (USFS, 2017). Table 1 lists all Alternatives and the vegetation survey activities that have been completed or are planned.

Table 1. Vegetation Surveys for Components of Marys Peak BPA Communications Site Project Alternatives

Alternative #	Alternative Name	Vegetation Survey Activities Completed in 2018 by Alternative	Vegetation Survey Activities Completed in 2017 by Alternative	Components where Vegetation surveys are not needed by Alternative
1	No Action (the communications sites would not be maintained or upgraded)	None, no survey needed since no actions are proposed	None, no survey needed since no actions are proposed	Marys Peak existing communication site and BPA Prospect Hill site
2	Marys Peak at existing BPA site – BPA Albany Substation	None	Marys Peak existing communication site	BPA Albany Substation*
3	Marys Peak Co-locate with USFS – BPA Albany Substation	None	Marys Peak existing communication site	BPA Albany Substation*
4	West Point Spur Co-locate at existing Consumer's Power,	West Point Spur existing CPI site	None	BPA Prospect Hill site*

	Inc. (CPI) Site – BPA Prospect Hill site			
5	West Point Spur proposed new BPA communications site – BPA Prospect Hill site	West Point Spur new BPA communications site	None	BPA Prospect Hill site*
* The proposed actions at these sites would all be contained within the communications sites' existing chain link fences and in the graveled communications yard where vegetation is lacking				

This report documents existing vegetation resource conditions in the West Point Spur component of the Project and analyzes potential environmental impacts of the Project on plant communities and special-status plant species, including Siuslaw National Forest and Benton County Sensitive and strategic plant species and their habitats, and noxious weeds. This report also includes recommendations for measures (in addition to Project best management practices [BMPs]) to avoid, minimize, or mitigate for potential impacts to vegetation.

Objectives for the Project vegetation surveys addressed in this report are to:

- Document, map, and assess the condition of the various plant communities
- Survey for and document special-status plant species occurrences and habitat
- Survey for and document noxious weed species
- Describe plant communities and assess their ecological condition

Project Location

The West Point Spur site is located on property owned by the city of Corvallis, Oregon; located approximately 16 miles southwest of Corvallis, in Benton County, Oregon off of Oregon Highway 34 (Figure 1). The West Point Spur site is located approximately 1 mile west of the Marys Peak summit, and is part of the larger Marys Peak mountain complex.

The West Point Spur site includes the existing Consumer's Power, Inc. (CPI) Site (Alternative 4) and a proposed new BPA site with its associated unpaved spur access road (Alternative 5). Forest Service Road 3010-1122 (FS Road 3010-112) is the access road leading to both alternatives at the West Point Spur site, from Marys Peak Road.

Although most of the West Point Spur site is situated on land owned by the City of Corvallis, a portion of the access road (FS Road 3010-112) passes through land managed by the United States Department of Agriculture, Forest Service (USFS), Central Coast Ranger District of the Siuslaw National Forest (Siuslaw NF). About half (roughly 1,050 feet [0.2 mile] of the 2,000 foot long road [0.38 mile]) is also located within the Marys Peak Scenic Botanical Area, which is managed by the USFS under the terms of the Siuslaw National Forest Land and Resource Management Plan (USDA 1990) as amended by the Northwest Forest Plan (USDA USDI 1994). Accordingly, BPA is currently coordinating with the Siuslaw NF concerning this Project.

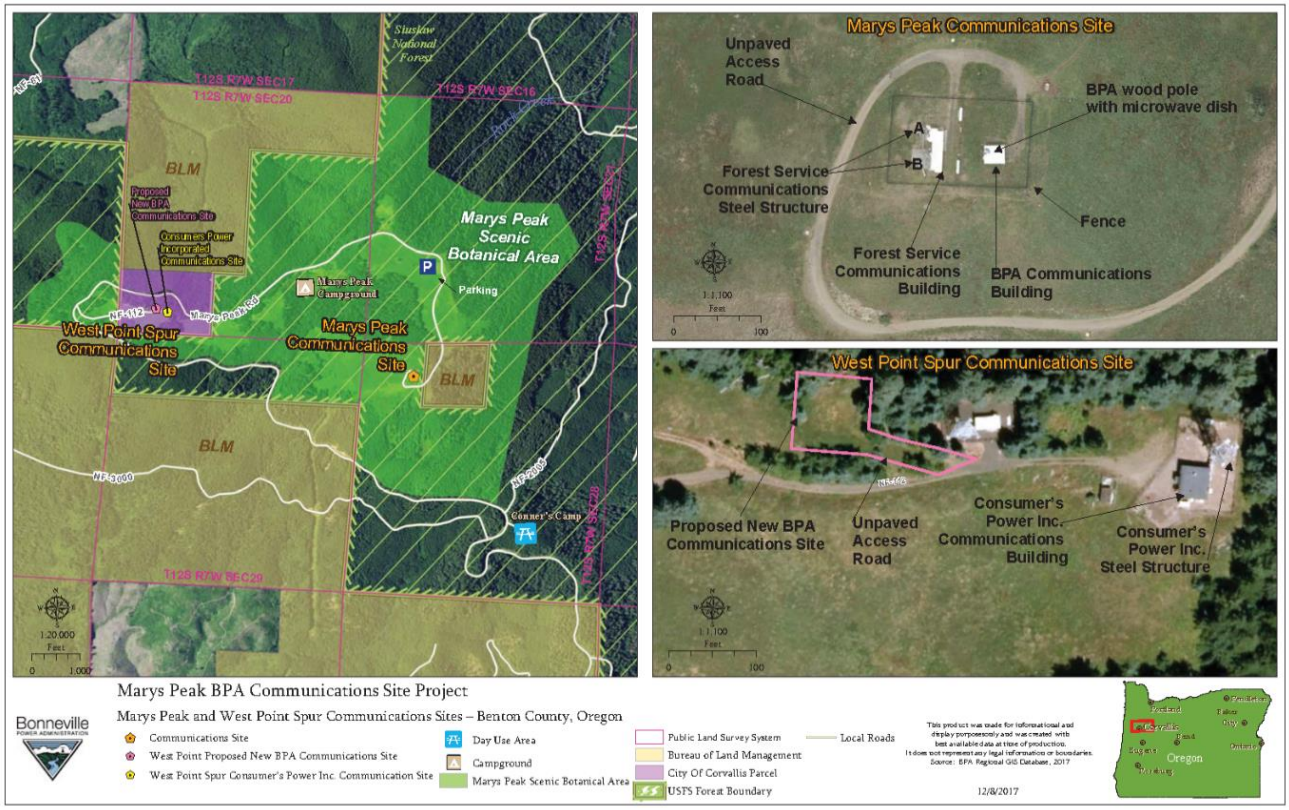

Figure 1. Vicinity map of proposed Marys Peak BPA Communications site and alternative West Point Spur site Project areas (figure courtesy of Bonneville Power Administration).

DESCRIPTION OF ALTERNATIVES THAT INCLUDE WEST POINT SPUR

The West Point Spur site (one component of Alternatives 4 and 5) that was surveyed in June 2018 includes the existing CPI site and the new BPA site, including an unpaved access road. The West Point Spur site is accessed via FS Road 3010-112, which is approximately 0.38 mile long and dead ends at the CPI communications site; this road was also surveyed. The CPI site is within a chain link fence and includes the CPI building and a steel-lattice structure.

Under Alternative 4, vegetation could be impacted from the following activities proposed at the CPI site due to area disturbance and removal of plants and their habitat:

- Staging and stock piling equipment, materials and vehicles within the CPI facility's fence, if possible. However, additional staging areas outside of the fence in meadow habitat could be required and will be determined upon further design
- Improving the existing unpaved access road (FS Road 3010-112) leading from Marys Peak Road to CPI's communications facility, as needed for construction access
- Repairing CPI's existing chain link fence and gate, as needed
- Removing up to 20 trees located on the northeast side of the CPI site for a new beam path

Under Alternative 5, vegetation could be impacted from the following activities proposed at the new BPA site due to area disturbance and removal of plants and their habitat:

- Staging and stock piling equipment, materials and vehicles near the new BPA communications site, which could occur in adjacent meadow habitat
- Reconstructing and improving the existing unpaved access roads (the spur road leading to Alternative 5's site and FS Road 3010-112)
- Preparing the site for construction, including excavating to a depth of up to 6 feet (approx. 2,300 cubic yards of soil), grading and filling to create a level construction site for the new facility.
- Constructing of a new BPA-owned communications building (about 20 ft. by 36 ft.)
- Constructing a new 100-foot tall steel-lattice structure
- Installing electrical service to the building via trenching or directional boring
- Installing at least one 2,000 gallon propane tank and supply lines
- Installing a chain link fence and gate around the new communications facility
- Removal of up to 65 trees on the NE side of the facility for a new beam path

West Point Spur Site Climate, Soils, and Vegetation

The West Point Spur site has an elevation of approximately 3,600 feet. The climate is driven by elevation and proximity to the Pacific Ocean. The majority of the annual precipitation at the communications site occurs in the winter months and sharply declines during the summer months. The ten-year precipitation average was just over 129 inches for October through April and 13 inches for May through September (2008 through 2017, data from PRISM Climate Group).

The soil types at West Point Spur vary depending on aspect but are mostly loamy colluvium and residuum derived basalt. All soils types present are well drained (USDA Natural Resources Conservation Service, Web Soil Survey).

The West Point Spur site is a spur off of the greater Marys Peak mountain feature. Marys Peak as a whole features forest and grassland habitat types. The forests on Marys Peak, including West Point Spur, are dominated by noble fir at higher elevations, and by Douglas fir (*Pseudostuga menziesii*) and

western hemlock (*Tsuga heterophylla*) at lower elevations. Western hemlock is mostly found at lower elevations on the wetter north and west slopes. The meadow at the summit of Marys Peak is a 130 acre grass bald. While no grass balds of this size occur at West Point Spur, some of the species found in the Marys Peak meadow are present in the open areas of West Point Spur. This species suite includes dense grasses and a diverse assemblage of forbs including lilies, yarrow, violets, ferns, and other perennials.

Marys Peak is the highest point of the Coastal Ranges Province (Franklin and Dyrness, 1988). This Province extends from Oregon at the middle fork of the Coquille River northward into southwestern Washington covering the Willapa Hills. Geologic history of the area begins in the early Eocene Epoch with the deposition of basalt "pillows". Further into the Eocene, the Tyee formation was deposited in marine conditions, making up much of the southern coastal range. Marys Peak was capped by igneous intrusions during the Oligocene (Franklin and Dyrness 1973).

Vegetation Survey Area

The 2018 vegetation survey area is approximately 6 acres in size and includes areas where direct impacts and potential indirect impacts to vegetation could occur from Project activities (Figure 2). Direct impacts would occur in construction work areas from activities such as: removal, crushing, and cutting of vegetation, and soil removal. Indirect impacts could occur in areas adjacent to construction from erosion and sedimentation, and from the introduction of weed species.

Figure 2. Boundary (in red) of the vegetation survey area for the West Point Spur site of the Marys Peak BPA Communications Site Project.

The vegetation survey area includes six focal areas, as seen in Figure 3:

- CPI fenced communications site (which was not entered, but assessed from outside the fence) plus a 50 foot buffer around the outside perimeter of the fence (purple polygon), located on City of Corvallis fee-owned land, 0.55 acres
- Access road, FS Road 3010-112, leading from Marys Peak Road to the CPI site plus a 50 foot wide buffer centered on the access road (25 feet on either side of the road centerline), (yellow polygon), located on both USFS-administered land and City of Corvallis fee-owned land, 2.22 acres
- New BPA site and associated spur access road plus a 50 foot wide buffer (royal blue polygon), located on City of Corvallis fee-owned land, 0.54 acre
- Two mixed forest areas located northeast of each of the communications sites, no survey buffer needed, located on City of Corvallis fee-owned land, [1.50 acre (dark orange polygon) and 0.90 acre (light orange polygon)]
- Two material/equipment staging and vehicle parking areas (neon green polygon), no survey buffer needed, located on City of Corvallis fee-owned land, 0.39 acre and 0.18 acre
- Two areas that could be traversed during project activities, located on City of Corvallis fee-owned land, [0.12 acre (red polygon) and 0.06 acre (maroon polygon)]

Figure 3. Six focal areas of the survey area for the West Point Spur components of the Marys Peak BPA Communications Site Project.

BACKGROUND RESEARCH

Prior to conducting the vegetation surveys, RST performed background research and then created a Vegetation Survey Plan for the Project. The Survey Plan included information on all of the special-status species that were surveyed for (target special-status species list) and the research methods that were used to develop that list. The Survey Plan was reviewed by BPA, USFS, and the BLM. This section includes information from the Survey Plan.

Special-status Vascular Plant Species

For the purposes of this survey, special-status plant species are defined as those plant species that are tracked as rare plant species by the Oregon Biodiversity Information Center (ORBIC 2018), those species managed as special staus by the Siuslaw National Foreset (SNF) and Central Coast Ranger District of the Bureau of Land Management (BLM) Salem District that have the potential to occur in the Project area. ORBIC's rare plant species database is comprehensive, and encompasses species from throughout Oregon.

The target special-status species list for this Project's vegetation Survey Plan was compiled based on information from ORBIC, as well as the U.S. Fish and Wildlife Service (USFWS), the USFS Central Coast Ranger District, the BLM, Salem District, and the available body of literature.

The U.S. Fish and Wildlife Service (2016) provided BPA a list of federally listed, proposed, and candidate species for Benton County (Attachment 1). Bradshaw's desert-parsley (*Lomatium bradshawii*), golden paintbrush (*Castilleja levisecta*), Kincaid's lupine (*Lupinus oreganus*), Nelson's checker-mallow (*Sidalcea nelsoniana*), water howellia (*Howellia aquatilis*), and Willamette daisy (*Erigeron decumbens*) are the only federally listed plant species identified by the U.S. Fish and Wildlife Service (2016) with the potential to occur in the Project area. There are no plant species that are proposed for federal listing or that are federal candidate species.

BPA also conducted a query of the ORBIC rare plant database in June 2018 to acquire a list of special-status plant species known to occur within 1 mile of the West Point Spur project area (Attachment 2). There were no threatened, endangered, nor designated critical habitat for botanical species within a 1 mile radius buffer of West Point Spur Project area (B. Hill, BPA Environmental Protection Specialist, pers. comm.).

The Rare, Threatened and Endangered species of Oregon, 2016 ORBIC document was then queried specifically for Benton County and this list of plants (Attachment 3) was added to the developing target species list for the City of Corvallis lands and FS Road 3010-112. The two queries (BPA rare plant database query and Benton County ORBIC Lists) resulted in 119 species occurrences, including 53 fungi, 15 lichen, 17 nonvascular plants and 34 vascular plants. Of the 119 species, 89 appeared on at least the SNF or the BLM Special Status lists (ISSSSP website 2014), while 30 appeared on neither of the two lists. The BLM list was included because BLM manages property less than one mile from the West Spur site, so plants from this list could be present at the site even though the site itself is not on BLM property.

As part of the early planning process for the Project, BPA obtained a copy of the SNF and BLM Sensitive plant species list (ISSSSP website 2014). The combined Sensitive plant species list for the SNF and BLM Salem District includes 297 species (Attachment 4). In an effort to elucidate the probability of species occurrence at the West Point Spur site, the species that appeared on the SNF and BLM Sensitive plant lists that weren't already on the ORBIC lists were then cross-referenced using the Consortium of Pacific

Northwest Herbaria in order to locate the specimen records nearest to the Project site. This online portal provides access to 16 herbaria from multiple institutions across Canada and the United States. These same species were then cross-referenced again using The Oregon Plant Atlas mapping tool of the Oregon Flora Project and against additional historical species lists (Unknown 1992; McEvoy et al. 2005; and Hays et al. 2012). Those species showing historic presence within one mile of the project area were then added to the potential special status survey list.

The vegetation survey area is limited in total acreage and diversity of habitats. Species whose distributions are restricted by substantive habitat requirements that are not supported within the Project area, such as aquatic, riparian, low elevation, coastal species, etc., were then removed from target special-status species list. Additionally, species for which historical observations had occurred at the limits of their historic range, and where the environment of that historic range has experienced significant alteration (i.e., development, ecological succession, prolonged land management changes, etc.) were also removed.

This process produced the list of 13 target special-status vascular plant species to be surveyed for during the Project's vegetation survey (Attachment 5).

Special Status Non-Vascular Plant and Fungal Species

A 5-step process was used to develop a list of the non-vascular species additions to the target special-status species list for the Project. The Regional Forester's Sensitive Species List for the Siuslaw National Forest (FSM 2672.4), was used to develop the non-vascular Sensitive species contributions to the target survey special-status species list.

The 5-step assessment process consisted of 1) pre-field review of existing information; 2) a field reconnaissance if listed species or habitats were determined to be present and potentially affected by the proposed action; 3) an evaluation of project effects on species and habitats; 4) an analysis of the significance of the project's effects on local and entire populations of Sensitive species; 5) if needed (due to lack of information), a biological investigation was completed.

Through this process 20 non-vascular species were identified as having suitable habitat either present or assumed present within West Point Spur site's Project area. Of these, five had been previously included on the Known and Suspected Occurrences of Special-Status Vascular and Non-vascular Plant Species and Fungi list (Attachment 2), and 15 were new additions to the Known and Suspected Occurrences of Special-Status Vascular and Non-Vascular Plant Species and Fungi list. Therefore, the additional 15 non-vascular species (6 fungi, 5 mosses, and 4 lichens) were included on the target special-status species list (Attachment 5). Eleven of the fungi species included in Attachment 2 are designated as USFS Regional Forester's Sensitive species.

In addition, the Project follows direction for implementation of the January 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (USFS et al. 2001). It is based on the district court's remedy order issued on February 18, 2014 (Conservation Northwest v. Bonnie, W.WA No. C08-1067-JCC). A pre-field review (NRM TESP/Invasive 2017) summer of 2018 found no known occurrences within the Project area for Survey and Manage species. However, potential habitat was determined to be present for six Management Category A or C species that require pre-disturbance surveys. Management Category A species are considered rare, are managed at all known sites, and require pre-disturbance and strategic surveys. Management Category C species are considered uncommon and managed at high-

priority sites only. Category C species also require pre-disturbance surveys and strategic surveys. Therefore, these six species (Table 2) were added to the target survey special-status species list (Attachment 5).

Table 2. Non-vascular Survey and Manage species for which suitable habitat is present at the West Point Spur site.

Species	Group	Suitable Habitat	Management Category
Schistostega pennata	Bryophyte	Grows primarily on mineral soil in cave entrances or crevices and sheltered areas on the root mass of fallen trees. Found to be associated with silver fir, western hemlock, mountain hemlock, Sitka spruce, western red cedar, and lodgepole pine.	A
Tetraphis geniculata	Bryophyte	Found on large decaying logs in cool moist areas. Known to exist in stands of Sitka spruce, western hemlock, and Douglas-fir.	A
Bridgeoporus nobilissimus	Fungi	On true fir (*Abies* spp.) trees, snags and stumps particularly noble fir (*A. procera*).	A
Hypogymnia duplicata	Lichen	Grows as an epiphyte on mountain hemlock, western hemlock, Pacific silver fir, and subalpine fir in old-growth forests of the western Cascades, Olympics, and Coast Range. Primarily found between 1,100 – 5,450 feet elevation.	C
Lobaria linita var. tenuoir	Lichen	Lower boles of conifers and moss covered rocks in cool microsites. Only known coastal Oregon location near the summit of Mt. Hebo.	A
Pseudocyphellaria rainierensis	Lichen	Grows as an epiphyte in cool, humid, old-growth coniferous forests. Endemic to the Pacific Northwest and grows between 330-4,000 feet in elevation.	A

Noxious Weeds

The Oregon Department of Agriculture Noxious Weed Lists include 132 species (Oregon Department of Agriculture 2017), 68 of which are included in the Benton County Noxious Weed Species list (Benton Soil and Water Conversation District 2017). Nearly all species on the Benton County noxious weeds list have the potential to occur at, or near, the Project area, including in the vicinity of the access road. The list of noxious weeds that were surveyed for (target noxious weed species list) includes all species on the

Benton County list except the following ten aquatic species: flowering rush (*Butomus umbellatus*), South American waterweed (*Egeria densa*), Hydrilla (*Hydrilla verticillata*), large-flower primrose (*Ludwigia grandiflora*), floating primrose (*Ludwigia hexapetala*), water primrose (*Luwigia peploides*), parrot feather (*Myriophyllum aquaticum*), Eurasian watermilfoil (*Myriphyllum spicatum*), yellow floating heart (*Nymphoides peltata*), and European water chestnut (*Trapa natans*). The target noxious weed species list is provided in Attachment 6.

Plant communities
Aerial imagery was reviewed prior to initiating field surveys to assess general vegetation patterns and plant communities in the Project area. This information facilitated mapping the plant communities for ecological assessment purposes.

FIELD SURVEY METHODOLOGY

Vascular Plant Survey Methodology

The 2018 vascular plant survey was conducted between June 26th and June 29th, 2018, a time when many vascular plants in the survey area were flowering. The survey was conducted using the methodology described below.

Botanists walked along a series of closely-spaced meandering transects from west to east in the Project vegetation survey area (Figure 4), except for the area inside of the fenced CPI communications site.

Of the four vegetation survey areas identified in Figure 4, The survey area labeled CPI site includes one of the two mixed forest areas (0.9 acres) and both of the meadow staging areas (0.57 acres combined). The inside of the fenced CPI communications site was not accessed, but the area within the fence was visually surveyed from outside of the fence. The second vegetation survey area, labeled new BPA communications site includes the other 1.5 acre mixed forest area. All observed plants are designated "forest", "meadow", or "both" in the habitat column of Attachment 7 to distinguish which species are only found in the forest, meadow, or in both habitats. The access road, FS Road 3010-112, leading from Marys Peak Road to the CPI site, was split into two vegetation survey areas because the Forest Service portion of the road is part of Marys Peak Scenic Botanical Area, while the City of Corvallis's portion is not part of it. In summary, this created four distinct botanical survey areas within the larger vegetation survey area (Figure 4):

(1) CPI Site (Alternatives 4 and 5)
(2) New BPA Site (Alternative 5)
(3) City of Corvallis Road (Alternatives 4 and 5)
(4) FS Road (Alternatives 4 and 5)

Figure 4. Four survey areas for the West Point Spur component of the Marys Peak BPA Communications Site Project.

All observed plant species within the vegetation survey area were identified using botanical knowledge, field guides, and dichotomous keys. Species that could not be identified in the field were collected for later identification using herbarium and other botanical resources.

Target species occurrences in the survey area were recorded using: an Arc Geographical Information Systems Online (AGOL); a Series 6S iPhone with the Collector Application (Collector) installed; and a Garmin GLO Portable GPS/GLONASS Receiver for Mobile Devices (GLO) to boost the satellite signals for the iPhone. The published accuracy of this system is plus or minus five meters, although field experience in a variety of settings has consistently produced greater accuracy than with traditional handheld units. In addition a Trimble Juno SB field unit, which has an accuracy of 1-3 meters, was loaded with the spatial files in case of any type of failure in the other system.

Non-Vascular Vegetation Survey Methodology

The 2018 non-vascular survey, which included non-vascular plants (byophytes), fungi and lichens, was performed on October 29, 2018 by Matthew Smith and Rolando Beorchia. The non-vascular vegetation survey was conducted by walking a series of closely-spaced meandering transects that traversed the variety of habitats present as well as an intuitive-controlled element whereby areas with slight differences in microsite or vegetation were explored. The surveys were intensive and habitats throughout the Project area were surveyed, leading to high survey coverage of the Project area. Habitats surveyed included rock, soil, soil crust, live tree boles and branches, litter, snags, and down wood.

The non-vascular survey was not designed to detect the 11 USFS Sensitive fungi species identified as having potential suitable habitat in the Project area (Attachment 2). Positive identification of fungi requires fruiting bodies (mushrooms) that may not reliably appear each year, or if they successfully fruit each year, the fruiting bodies can sometimes be below-ground, as is the case of truffle species. Therefore, a one-time survey cannot reliably determine species presence or absence for fungi that fruit above-ground, and searching for underground fruiting species would involve extensive, undesirable soil disturbance by removing soil, duff, and litter by raking the ground. These fungi species are therefore considered to be non-detectable by the RST survey efforts, and presence was assumed if there was a documented site, or if suitable habitat was found in the Project area. Preliminary analysis determined that suitable habitat was confirmed to be present in the West Point Spur Project area for all 11 USFS Sensitive fungi species. Therefore, they have been included in the target survey special-status species list (Attachment 5), as well as in the Field Survey Results section below.

The vast majority of the non-vascular species for which surveys were conducted require an affiliation with coniferous trees. The exceptions to this are *Haplomitrium hookerii*, *Andreaea schofieldiana*, *Bryum calabryoides*, *Encalypta brevicollis*, *Racomitrium ryszardii,* and *Grimmia anomala*. Suitable habitat for *Haplomitrium hookerii* is sandy outwash areas adjacent to coastal streams. Suitable habitat for the remaining five species not affiliated with coniferous trees includes grassy, rocky, or moist shaded rocky habitats, such as potentially along the road, within the fenced area, and on moist rocks found on north facing aspects within the forested area. As such, the remaining are assumed to be present, even though not observed in the field, due to the presence of suitable habitat of grassy, rocky, and moist shaded rocky areas.

Field Documentation

Mapping of target special-status species, target noxious weed species, and vegetation communities observed during the vegetation surveys was recorded in paper and electronic format (Attachment 8).

The noxious weed species survey was conducted simultaneously with the special-status species survey, and covered the same vegetation survey area. Temporary flagging was used in the delineation of target noxious weed species plant populations. Surveyors placed flagging tape to demarcate the perimeter of populations with large or complex distributions, adjusting as needed during the survey process. Once satisfied that a population was accurately delineated the surveyor retraced their steps, capturing the population distribution with GPS, and removing the flagging as they progressed.

Spatial data were collected utilizing the Geographic Coordinate System (GCS) WGS_1984 and referencing the datum (D) of WGS_1984. Populations of noxious weeds were mapped independently if they were separated by a distance of approximately 50 feet or greater.

Photographic documentation of target species occurrences and plant communities within the survey area are provided in this Vegetation Survey Report in the Field Survey Results section. No special status target species were observed during the survey, so there is no photo-documentation for these species. One close up and one wide-framed habitat photograph of an exemplar for each target noxious weed species observed within the Project area is provided in the section labeled “Target Noxious Weed Species Present” in the Field Survey Results. Each plant community encountered was photographically documented at an appropriate angle to communicate the greatest information about that community or

habitat. These photograghs are found in the "Description of Habitat Types/Plant Communities" in the Field Survey Results.

Special-status Plant Species

Special-status plant species observed during the vegetation survey were to be documented, their location recorded with a GPS unit and then mapped in Arc GIS. Abundance, habitat, and other conservation-related information were intended to be collected for each special-status plant species encountered during the survey. Information collected for each occurrence would have been used to complete an element occurrence form data sheet. However, documentation was not needed because no special-status plant species were observed in the field.

Noxious Weeds

The noxious weed species survey was conducted simultaneously with the special-status species survey, and covered the same vegetation survey area. The locations of noxious weed populations encountered during the survey were recorded with GPS and mapped. Information regarding the abundance and extent of the noxious weed species was collected. Representative photographs were taken of each noxious weed species encountered during the survey. In addition, all noxious weed species were vouchered with a plant collection.

Plant Communities

The vegetation survey efforts mapped, characterized, and assessed the ecological condition of plant communities within the West Point Spur site's area. Dominant species in each stratum (tree, shrub, grass, and forb) within each community type was recorded. Ecological condition of each mapped plant community was characterized as low, moderate, or high quality based on community composition, structure, seral status, and disturbance level attributes. Ecological condition assessments were based on the surveyor's best professional judgment to estimate the difference in vegetation attributes observed, versus those of the likely potential natural community (late seral condition) for the area. The following criteria were applied:

- "High" ecological condition was used for areas having late seral plant composition and structure, minimal disturbance, and <5% estimated cover introduced (non-native) species.
- "Moderate" ecological condition was used for areas having incomplete or skewed plant community structure and composition, most likely due to disturbance factors. Introduced species may be well represented, with up to approximately 25% cover.
- "Low" ecological condition was used for communities with substantially altered plant composition and structure. These are areas dominated by weed and/or "increaser" species with greater than 25% cover, and/or have relatively sparse vegetation with high bare ground cover and ample evidence of past disturbance.

Botanists Resumes

The botanists that conducted and documented the vegetation survey are Lynda Moore, Kathleen Sale, and Matthew Smith. Project field support was provided by Sean Perks and Rolando Beorchia. Lynda Moore's, Kathleen Sale's and Sean Perks's resumes are included as Attachment 9 to this report.

FIELD SURVEY RESULTS

Plant Species Observed

The lists of all vascular plant species and the non-vascular species [non-vascular plants (bryophytes), fungi and lichens] observed during the 2018 field surveys are provided in Attachment 7, and 10 respectively.

Target Special-status Species Present

Vascular Plants

No target special-status vascular plant species (which included federally listed plants) were observed during 2018 Project vegetation surveys.

The Federally listed vascular plants that were surveyed for included: Bradshaw's desert-parsley (*Lomatium bradshawii*), golden paintbrush (*Castilleja levisecta*), Kincaid's lupine, (*Lupinus oreganus),* Nelson's checker-mallow (*Sidalcea nelsoniana*), and Willamette daisy (*Erigeron decumbens*). Water howelia (*Howellia aquatilis),* which was on the federally listed plant species list provided by the U.S. Fish and Wildlife Service, was not included in the targeted special-status survey list as the West Spur site lacked any wetlands.

Bradshaw's desert-parsley, golden paintbrush, Willamette daisy and Nelson's checker mallow all lacked either habitat or did not grow at the elevational range for the area that was surveyed. Kincaid's lupine was the only federally listed species which had habitat at the site. This potential habitat was in the ecotones between the forest and meadow areas.

Non-vascular Plants and Fungi

The 2018 non-vascular survey, which included non-vascular plants (bryophytes), fungi and lichen, found suitable habitat within the conifer stands for the 11 Sensitive fungi identified in the pre-field research (Table 3, Attachments 2 and 5). Because suitable habitat was present, it was assumed that all 11 Sensitive fungi could occur within the forested portion of the Project area, despite no observations made in the field. No threatened, endangered, or sensitive species were detected during the non-vascular survey.

Table 3. Eleven USFS Sensitive species of fungi for which suitable habitat was observed in the Project area, and should be assumed present.

Species	Status	Suitable Habitat
Bridgeoporus nobilissimus	ORBIC List 1 G3, S3	On true fir (*Abies spp.*) trees, snags and stumps particularly noble fir (*A. procera*)
Chamonixia caespitosa	ORBIC List 2 G5, S1	Mycorrhizal with conifers. Known from Cape Perpetua and Cascade Head Experimental Forest

Species	Status	Suitable Habitat
Cortinarius barlowensis	ORBIC List 2 G3,S2	Terrestrial in coastal to montane conifer forests
Cystangium idahoensis	ORBIC List 1 G2G3, S1	Mycorrhizal with true fir above 3600 feet. Known on Marys Peak
Gastrolactarius camphoratus	ORBIC List 1 G2, S2	Mycorrhizal with Douglas-fir and western hemlock. Known from Cummins Creek Area
Phaeocollybia californica	ORBIC List 1 G3, S3	Mycorrhizal with conifers. Known from Cascade Head Experimental Forest
Phaeocollybia dissiliens	ORBIC List 3 G3, S3	Mycorrhizal with conifers. Endemic to the Oregon coast and Coast Range. Known from Marys Peak
Phaeocollybia gregaria	ORBIC list 1 G1G2, S1S2	Mycorrhizal with Douglas-fir and Sitka spruce. Known from Cascade Head Experimental Forest
Phaeocollybia oregonensis	ORBIC List 1 G2? S2?	Terrestrial in conifer forest. Endemic to the Oregon Cascades and Coast Range
Pseudorhizina californica	ORBIC List 2 ODA/ODFW: SE G4, S2	Well-rotted stumps or logs of coniferous trees and litter or soil rich in brown rotted wood. One site on the Siuslaw National Forest
Rhizopogon exiguus	ODA/ODFW: SE G2G3, S1S2	Mycorrhizal with Douglas fir and w. hemlock. Known from Marys Peak

The Ranks "S" for state and "G" for global follow a 1-5 ranking system:
1 = Critically imperiled; 2 = Imperiled; 3 = Rare and uncommon, vulnerable; 4 = Not rare and apparently secure; 5 = Demonstrably widespread, abundant and secure
A "?" after a rank denotes an ORBIC probable rank:
ORBIC List 1 = Threatened or endangered throughout range
ORBIC List 2 = Threatened or endangered in Oregon but secure elsewhere
ORBIC List 3 = Review species, taxa for which more information is needed
ORBIC List 4 = Watch, taxa of conservation concern but are not currently threatened or endangered
Oregon Department of Agriculture/Oregon Department of Fish and Wildlife state designations are as follow: SC = state candidate; ST = state threatened; SE = state endangered

Brief descriptions of the 11 Sensitive fungi (Table 3) and their associated potential threats are described below:

Bridgeoporus nobilissimus is endemic to the Pacific Northwest. Approximately 104 documented sites occur in the Olympic Mountains, western Cascades of both Oregon and Washington, and the Oregon Coast Range (ISSSSP 2007). Because the fungus generally requires noble fir (*Abies procera*) and Pacific silver fir (*Abies amabilis*) as a host, its range coincides with these two tree species. Both of these tree species are in the area surveyed. The fruiting body (conk) is one of the largest of any fungi, growing up to 3-4 feet across and persisting for many years. Typically, conks are found on the boles of large snags (3 ft. or more in diameter), but the mycelium has been found within live trees and in trees as small as 19

inches dbh. Threats to the persistence of a population would include any activity that results in the loss of noble fir trees in the short or long-term.

Chamonixia caespitosa is endemic to the Pacific Northwest from 9 widely scattered sites from the coast of northern California to the Olympic Mountains in Washington. One site is documented on the Siuslaw National Forest (ISSSSP 2013). The species is mycorrhizal and found in association with a variety of coniferous tree species, including Douglas fir and spruce species. Habitat is most often associated with forested wetlands (ISSSSP 2013), which are not present in the areas surveyed. Threats to the persistence of a population would include activities that remove host trees.

Cortinarius barlowensis is endemic to the Pacific Northwest in western Washington and Oregon and along the northern California coast (ISSSSP 2007). Within this area it is known from 25 sites including one documented from Siuslaw National Forest (ISSSSP 2013). The general habitat description is forested wetlands (ISSSSP 2013), which are not present in the areas surveyed. As a mycorrhizal species, threats to the species persistence would include activities that remove host trees.

Cystangium idahoensis is endemic to the western US where it is known from three locations in Oregon and Idaho. One population occurs at the Marys Peak Campground within Siuslaw National Forest lands (ISSSSP 2013). Populations of this species are located in Pacific silver fir and western hemlock plant associations. Both of these tree species are present in the area surveyed. It is a mycorrhizal species; threats that impact host trees or actions that disturb the soil and duff could adversely impact the species.

Gastrolactarius camphoratus is endemic to the Pacific Northwest. It is known from 17 sites in the Siskiyou Mountains, Oregon Coast Range and Olympic Mountains (ISSSSP 2013). There are no known sites on the Siuslaw National Forest. The species is mycorrhizal with conifers, especially Douglas-fir and western hemlock. Both of these tree species are present in the area surveyed. Threats to the persistence of a population would include activities that remove host trees.

Phaeocollybia californica is endemic to the Pacific Northwest, where it is known 56 sites in western Washington, western Oregon and northern California (Norvell and Exeter 2008, ISSSSP 2013). There are three sites known to occur on the Siuslaw National Forest (ISSSSP 2013). This species is mycorrhizal, associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. These three tree species are present in the area surveyed. Threats to the species' persistence would include activities that remove host trees.

Phaeocollybia dissilliens is endemic to the Oregon coast, Coast Range, and west slope of the Cascades (Norvell and Exeter 2008). There are a total of 20 known sites, one of which occurs on the Siuslaw National Forest in the vicinity of Marys Peak. The species is mycorrhizal with conifers. Threats include any activities that remove host trees.

Phaeocollybia gregaria is endemic to Oregon, where it is known from ten sites, including four on the Siuslaw National Forest (ISSSSP 2013). The species is mycorrhizal, associated with the roots of Douglas-fir and Sitka spruce. Douglas fir is in the area surveyed but Sitka spruce was not present. Threats to the species' persistence would include activities that remove host trees.

Phaeocollybia oregonensis is endemic to the Pacific Northwest from British Columbia to Oregon. A total of 9 sites are known from Oregon (Norvell and Exeter 2008), two of which occur on the Siuslaw National

Forest (NRM TESP/Invasive 2015). This species is mycorrhizal, associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. Douglas fir, western hemlock and Pacific silver fir are present in the area surveyed. Threats to the species' persistence would include activities that remove host trees.

Pseudorhizina californica is known from 14 sites in Oregon and Washington, primarily in the Cascade and Olympic Mountains (ISSSP 2013). There is one site documented from the Siuslaw National Forest (ISSSSP 2013). The species is a litter and wood saprobe occurring on or adjacent to well-rotted stumps or logs of coniferous trees, and on litter or soil rich in brown rotted wood. Fruiting occurs in June. As either a wood or litter saprobe, *Pseudorhizina californica* may form symbiotic associations with the fine root systems of plants, growing out into the soil matrix, or it may be confined to the available substrate (log, stump, etc.). Threats to the species' persistence would include removing large woody debris or live conifers that it may be associated with.

Rhizopogon exiguous is endemic to Oregon and Washington where it known from seven sites, including one on the Siuslaw National Forest in the vicinity of Marys Peak (Castellano et al. 1999, ISSSP 2013). An underground-fruiting fungus in the truffle group, this species is associated with the roots of Douglas-fir and western hemlock. Both of these tree species are present in the area surveyed. Threats to its persistence would include activities that remove host trees.

Target Noxious Weed Species Present

Two species of noxious weeds on the Benton County weed list were observed within the vegetation survey area: common St. Johnswort (*Hypericum perforatum*) (Figure 5) and tansy ragwort (*Senecio jacobaea*) (Figure 6). The phenology of tansy ragwort was vegetative, but distinct enough to positively identify. Common St. Johnswort was flowering and easily identifiable.

Common St. Johnswort *(Hypericum perforatum)* – This weed species is a rhizomatous perennial, 1-3 feet; stems branching, green to rust color, becoming woody at base; flowers yellow with black dots at edge of sepals; leaves opposite, with translucent glandular dots. This plant is an Oregon 'B' listed plant, which is targeted for management by the USFS. Common St. John's wort is designated as an Oregon Category B weed, which is designated for management by ODA in priority areas only in Benton County.

Common St. Johnswort plants were observed throughout all of the survey areas except the forested areas (Figure 7). The highest density of common St. Johnswort was found on or near the road, but it was also prevalent through much of the meadow. Because of its prevalence and spacing (less than 50 foot gaps between plants), it was mapped as one large population.

Tansy ragwort (*Senecio jacobaea)* – This plant is a biennial or short-lived perennial, 1-6 feet; flower stalks branching; flowers bright yellow, usually with 13 petals; stems purplish-red; leaves ruffled looking, dark green, deeply lobed. Tansy ragwort is an invasive noxious weed that is toxic to most livestock. This species is listed as a category 'B' noxious weed which is designated for management in priority areas by ODA in Benton County. This species is also targeted for biocontrol in Oregon and is of management concern to the USFS.

Tansy ragwort was found in sparse, patchy distribution along the road, with the highest concentration on the Forest Service owned part of the road closer to the entrance gate (Figure 7)**.** No tansy ragwort was found in the meadow or forested areas.

Figure 5. Representative photograph of common St. Johnswort plant (left) and habitat (right) observed at the proposed West Point Spur Component. Photograph taken June 26, 2018.

Figure 6. Representative photograph of common tansy ragwort plant (left) and habitat (right) observed at the proposed West Point Spur component. Photograph taken June 26, 2018.

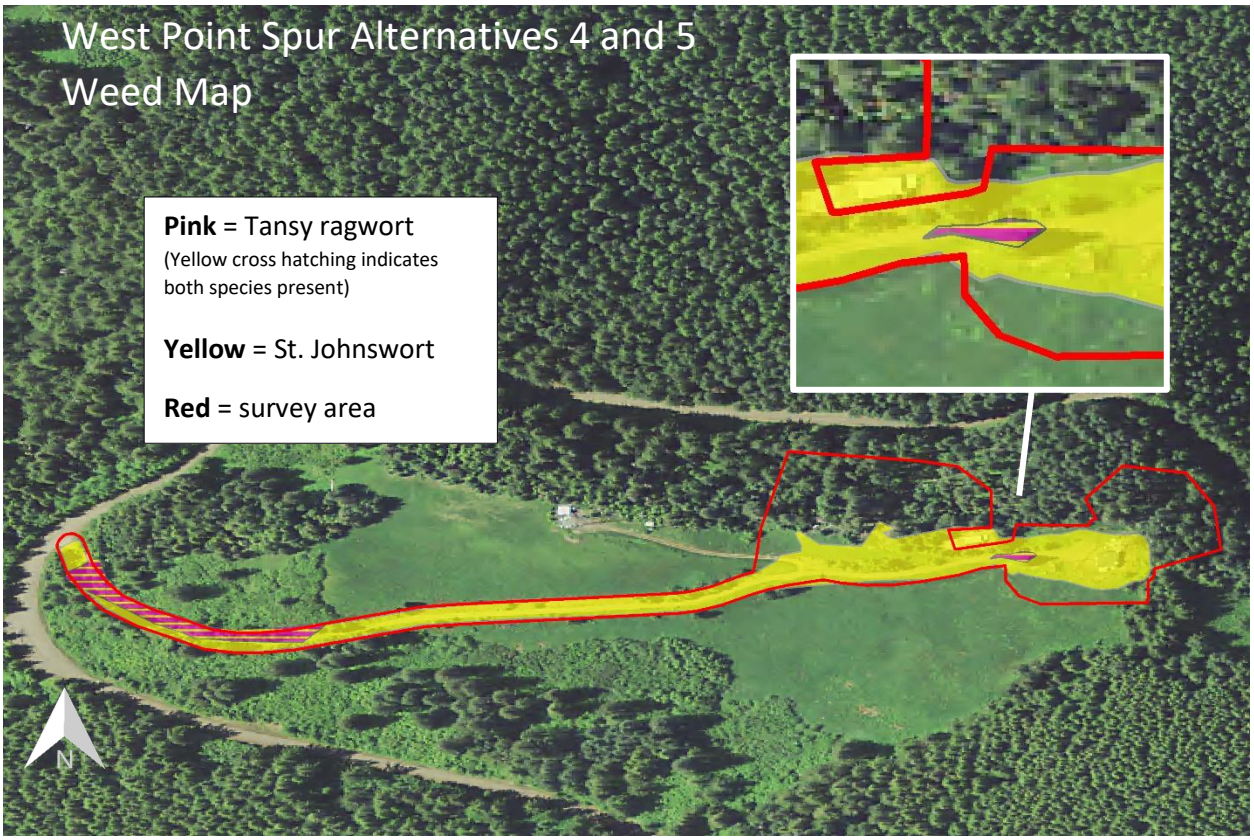

Figure 7. Overview of target noxious weed species observed at West Point Spur Component.

Description of Habitat Types/Plant Communities

The two dominant types of habitat types/plant communities in the survey area are:

1. **Forest** – Includes two mixed forest areas located northeast of the new BPA site (1.5 acre) and the CPI site (0.90 acre), and mixed forest patches along the Forest Service road (Figures 8,9 and Table 4).
2. **Meadow** – The meadow area includes all non-forested portions of the survey area including a portion of the new BPA site and the CPI communication site, potential staging areas, and buffer zones (Figures 10, 11, 12 and Table 4).

Table 4. Habitat locations and associated habitat quality, target species observed, and land use.

Location	Date Surveyed	Surveyors	Habitat	Habitat Quality	Target Plants Observed	Land Use
Existing CPI Communications Facility	6/26/2018	Lynda Moore, Sean Perks, and Kathleen Sale	Meadow	Moderate	common St. Johnswort	Access for maintenance / parking
Potential Tree Removal Areas	6/27/2018	Sean Perks, and Kathleen Sale	Forest	High	None observed	Undeveloped forest land
Potential Staging Areas	6/27/2018	Sean Perks, and Kathleen Sale	Meadow	Moderate	common St. Johnswort	Undeveloped meadow
Proposed New BPA Communications Facility	6/27-28/2018	Sean Perks, and Kathleen Sale	Meadow	Moderate	common St. Johnswort	Undeveloped meadow
Access Roads (existing and potential roads/traversed areas)	6/28/2018	Sean Perks, and Kathleen Sale	Meadow and Forest	Meadow portion Moderate, Forest portion High	common St. Johnswort and tansy ragwort	Vehicle access to communications sites

Forest

The forest habitat (Figures 8 and 9) is classified as "high" ecological condition because it exhibits late seral plant composition, there were no noxious weeds observed, and disturbance is low. The dominant tree species in the forest habitat include noble fir, Douglas fir, grand fir, and western hemlock (most dominant near the new BPA communications site under Alternative 5). Based on visual assessment using various site traits, including crown structure, diameter, and tree height, the age structure is well dispersed between large older trees, medium growth trees, and young and new growth trees. Dominant forbs include starry false lily of the valley (*Mianthemum stellatum*) and threeleaf woodsorrel (*Oxalis trillifolia*); dominant shrubs include oceanspray (*Holodiscus discolor*) and red elderberry (*Sambucus racemosa*). The two species of non-native forbs observed in the forest include one occurrence of garden vetch (*Vicia sativa*) and a few occurrences of purple foxglove (*Digitalis purpurea*).

The main disturbance in the forest habitat is naturally occurring downed woody debris. There are downed logs and snags with broken tops. Very few cut trees were observed. This forest structure promotes areas of higher forb diversity because of microclimates and small openings in the canopy due to downed woody debris. Two pieces of large metal wire and rebar were found near the new BPA communications site, but there was no evidence of recreation or other uses.

The forest habitat along the road occurs in patches, interspersed with the meadow habitat type. These areas contain similar species to the other forested areas but at a lower density.

Figure 8. Example of forest habitat north of the proposed new BPA communications site. Photograph taken June 28, 2018 looking north.

Figure 9. Forest habitat south of the CPI communications site. Photograph taken June 27, 2018 facing south.

Meadow

The meadow habitat (Figures10, 11 and 12) is classified as "moderate" ecological condition because it exhibits mid - to late seral plant composition, but noxious weeds are present, and disturbance level is relatively high. Dominant forbs in the meadow include non-native common sheep sorrel *(Rumex acetosella)*, and native riverbank lupine (*Lupinus rivularis*), native Virginia strawberry (*Fragaria virginiana)*., native western brackenfern (*Pteridium aquilinium)*, and non-native California blackberry (*Rubus ursinus)*. The most dominant graminoids are native and include California sedge (*Carex californica*) and Idaho fescue (*Festuca idahoensis).* The most prominent non-native species observed are oxeye daisy (*Leucanthemum vulgare*), common sheep sorrel *(Rumex acetosella)*, and purple foxglove (*Digitalis purpurea*).

The two noxious weeds present are tansy ragwort (*Senecio jacobaea)*, which is found only by the road in very small numbers, and common St. Johnswort (*Hypericum perforatum*). The highest occurrences of common St. Johnswort are found on or near the road and communication sites where the soil is compacted or vegetation is cleared. Disturbance and occurrence of noxious weeds become sparser and habitat quality increases with distance away from the road or communication sites.

The CPI Site contains approximately 8% cover of common St. Johnswort (*Hypericum perforatum*) and >1% cover of tansy ragwort (*Senecio jacobaea)*. The new BPA site contains approximately 6% of common St. Johnswort and >1% cover of tansy ragwort, and the roads contain approximately 10% of common St. Johnswort and >1% cover of tansy ragwort.

Figure 10. Example of meadow habitat south of the CPI communications site. Photograph taken June 27, 2018 facing south.

Figure 11. Example of meadow habitat south of the CPI communications site. Photograph taken June 27, 2018 facing northeast.

Figure 12. Example of meadow habitat south of the new BPA site. Photograph taken June 27, 2018 facing south.

Project Land Uses

Marys Peak as a whole has been affected by historical livestock grazing and logging, fire suppression, construction/maintenance of various structures on the summit, and recreation (USFS 1989). Historical logging and grazing may have impacted meadow quality in the past and guided the ecosystems observed today. It is believed that fire suppression led to forest encroachment into the grasslands on Marys Peak.

The 2018 vegetation survey area has been affected by the construction of two existing communication sites. Road building, trenching, and construction can create barriers between plant communities, remove/compact topsoil, increase erosion, and aid in the establishment of introduced species and noxious weeds (Frenkel *et al.* 2012). Soil removal and erosion can also deplete the native seed bank in existing vegetation and soil, hindering the ability of native species to reestablish themselves in disturbed areas. Recreational activities are not common in the vegetation survey area because it has restricted access.

POTENTIAL IMPACTS FROM PROJECT IMPLEMENTATION

Despite efforts to avoid or reduce Project impacts to vegetation, direct and indirect impacts from implementation could affect vegetation resources, which would impact habitat quality immediately or over time. Direct effects are caused by the action and occur at the same time and place (40 CFR § 1508.8). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR § 1508.8).

The potential impacts of the proposed Project could include:

- Removal of native vegetation
- Soil compaction/topsoil removal
- Erosion
- Native seed bank reduction or depletion
- Introduction or spread of non-native and noxious weed
- Tree cutting and removal for communication site development or beam path clearing would degrade forest habitat quality
- General trampling of plants that may or may not affect their long term viability
- Increased disturbance could decrease meadow quality, especially as the size of disturbed area increases.

There would only be minimal impacts to plants on USFS managed lands under Alternatives 4 and 5 due to access road improvements as they would not require the cutting of trees or any disturbance to meadow or forest habitats because grading and addition of surface rock would occur within the existing road surface. For this reason, USFS sensitive fungi that could be present in the survey area would not be impacted on USFS managed lands.

Removal of Native Vegetation and Seedbank, Soil compaction/Topsoil Removal, Erosion

To develop the new BPA communications site under Alternative 5, about 0.54 acres of soils and vegetation would be disturbed, thus increasing the impacts on soils and vegetation. Alternative 4 does not include any site development impacts because CPI, Inc. is an existing communications site.

Vegetation removal and soil compaction/topsoil disturbance and removal at the proposed new BPA communications site under Alternative 5 would result in direct impacts to vegetation from the following activities:

- Staging and stock piling equipment, materials and vehicles
- Reconstructing and improving the existing upaved access roads
- Preparing the site for construction including excavating, grading and filling
- Constructing a new building and a new 100-foot tall steel lattic structure
- Installing a new propane tank and supply line and chain link fence and gate.
- Removal of up to 65 trees

Removing vegetation creates gaps in plant communities and obstructs revegetation by reducing the quantity and diversity of seed presence through vegetation removal during construction activities. This could also increase erosion, which would further deplete soil nutrients, and inhibit plant reestablishment.

There would be less vegetation removal, soil compaction/topsoil disturbance and virtually no soil removal associated with the CPI co-locate under Alternative 4. Under Alternative 4, direct impacts would result to vegetation from the following activities:

- Staging and stock piling equipment, materials and vehicles within the CPI facility's fence, if possible. However, additional staging areas outside of the fence in meadow habitat could be required and will be determined upon further design
- Improving the existing unpaved access road (FS Road 3010-112) leading from Marys Peak Road to CPI's communications facility, as needed for construction access
- Repairing CPI's existing chain link fence and gate, as needed
- Removal of up to 20 trees

Introduction or Spread of non-native and noxious weeds

Alternative 5 would have more direct impacts on introduction or spread of non-native and noxious weds than Alternative 4. To develop the new communications site under Alternative 5, about 0.54 acres of soils and vegetation would be disturbed. Alternative 4 does not include any site development impacts because CPI, Inc. is an existing communications site.

- Invasive and non-native species thrive in disturbed areas and often establish themselves before native plants can re-establish because they are more competitive in degraded habitats. Areas with eroded, cleared, or compacted soil could host an invasive plant community without human intervention. Once an invasive plant community becomes established, invasive species could spread and decrease surrounding biodiversity and native plant species.
- Invasive species are often accidentally spread by humans and they can establish themselves within native plant communities. Many introduced species become a long term or permanent problem. Seeds, vegetation fragments, and spores latch onto construction equipment, tools, vehicles, shoes/clothing, pets, and other objects. This Project could potentially introduce non-

native species, including noxious weeds, by inadvertently introducing their seed, vegetation fragments, or spores.

Effects of Increased trampling of Plants and Effects of Disturbance on Meadow Habitat

Alternative 5 would have an increased trampling of plants as compared to Alternative 4 due to the larger area of construction which would also increase the level of disturbance on meadow habitat.

Although the overall meadow quality is “moderate”, meadow habitat increases in quality the farther away from the road or communication sites (disturbed areas). There is less soil compaction, less non-native species cover, and increasingly less noxious weed presence at greater distances from disturbed areas. The use of staging areas that increase the size of disturbed meadow habitat areas would decrease meadow quality that could currently be classified as “high” quality, depending on size of area and spread of invasive plant and success of invasive plant control efforts

Tree Removal

Alternative 5 would have a greater impact because it would require more trees to be removed (up to 65), to create a new beam path and to develop the site, whereas Alternative 4 would only require the removal of up to 20 trees for the beam path.

If trees located near the proposed new BPA communications site (Alternative 5) or the existing CPI site (Alternative 4) would be cut for construction site preparation (Alternative 5) or a new beam path (both Alternatives), then the forest habitat in those areas would be degraded. Because the canopy would be removed and vegetation cleared, the amount of light reaching the forest floor would increase. The diversity and survival capability of forest forbs and shrubs would decline. Meadow type plants and weeds that tend to be compaction tolerant would be more likely to colonize the disturbed area. Furthermore, because of the slope in the forest habitat, tree removal could greatly increase erosion because there would be less live roots holding the soil in place. There is also potential for increased erosion from sheet flow since there would be fewer trees present to absorb excess water.

Potential direct and indirect impacts from the Project, if implementation of the recommended mitigation measures does not occur, are depicted in Table 5.

Table 5. List of potential impacts to vegetation and potential length of persistence. (Short-term = less than 10 years, long-term = between 10-100 years, and permanent = over 100 years, without human intervention.)

Impact (Direct or Indirect)	**Timeframe of impact**
Vegetation removal (Direct)	Permanent in Project footprint and short-term in adjacent disturbed areas
Forest (tree) removal (Direct)	Long term - permanent
Reduction in native seed bank (Direct)	Long-term
Topsoil removal (Direct)	Permanent in Project footprint areas
Soil compaction (Direct)	Long-term
Erosion (Direct and indirect)	Short-term or permanent
Invasive species introduction into native plant communities not disturbed by construction (Indirect)	Long term – permanent*
Invasive species colonization of areas disturbed by construction (Indirect)	Long term – permanent*
General trampling of vegetation (Direct)	Short term

Impacts Specific to Non-vascular Species

The source of potential impacts to non-vascular plant species and fungi include removal of habitat and disturbance of habitat. Many of the non-vascular species require a host tree to persist, and removing host trees would negatively impact those species. Soil disturbance could occur from vehicle/foot traffic, road extension, and the use of staging areas. Physical disturbance or removal of vegetation, soil, or duff layers would impact non-vascular species by disturbing removing habitat/substrate. Indirect impacts that would have the potential to alter habitat composition and moisture availability include erosion and invasive species introduction. Evaluation of impacts is provided in Table 6 below.

Table 6. Biological evaluation summary of effects specific to the non-vascular species. Analysis of effects and biological investigation were not required because it is anticipated that the cumulative effect of these activities would result in no impact to Sensitive fungi species.

SPECIES	Potential habitat?	Habitat Description	Species present?	Determination of Effects	Analysis of Effects	Biological Investigation
Bryophytes						
Andreaea schofieldiana	Yes [a] Rock garden/meadow /road	On igneous rock outcrops at middle to high elevation. Known from British Colombia to California.	No	No Impact	N/A	N/A
Bryum calobryoides	Yes [a] Rock garden/meadow /road	Damp soil, rock ledges, and outcrops at middle to higher elevations.	No	No Impact	N/A	N/A
Encalypta brevicollis	Yes [a] Rock garden/meadow /road	Igneous rock outcrops at mid-elevations subject to frequent fog. Known from across Canada and sites in the Siskiyou Mountains.	No	No Impact	N/A	N/A
Entosthodon fascicularis	Yes [a] Much of project area	Seasonally wet soil below 3,000 feet.	No	No Impact	N/A	N/A
Grimmia anomala	Yes [a] Rock garden	Exposed igneous rocks at mid-upper elevations.	No	No Impact	N/A	N/A
Haplomitrium hookerii	Yes [a] Rock garden/meadow /road	Pacific northwest on sandy outwash areas adjacent to coastal streams.	No	No Impact	N/A	N/A
Tetraphis geniculata	Yes [a] Forested areas	Older conifer forest, occurring on snags, logs and stumps.	No	No Impact	N/A	N/A
Lichens						
Bryoria subcana	Yes [a] Forested areas	On conifers, generally in mature stands with high	No	No Impact	N/A	N/A

SPECIES	Potential habitat?	Habitat Description	Species present?	Determination of Effects	Analysis of Effects	Biological Investigation
		humidity microsites. Year-round.				
Lobaria linita	Yes [a] Forested areas	Lower boles of conifers and moss covered rocks in cool microsites. Only coastal Oregon location near the summit of Mt. Hebo.	No	No Impact	N/A	N/A
Pannaria rubiginella	Yes [a] Forested areas	Epiphytic on trees and shrubs in cool moist forests along the Pacific coast.	No	No Impact	N/A	N/A
Tholurna dissimilis	Yes [a] Forested areas	Epiphytic on exposed branches and twigs in humid alpine and sub-alpine habitats.	No	No Impact	N/A	N/A
Fungi						
Bridgeoporus nobilissimus	Yes [a] Forested areas	On true fir (*Abies spp.*) trees, snags and stumps particularly noble fir (*A. procera*).	Assumed [b]	MIIH [c]	N/A	N/A
Chamonixia caespitosa	Yes [a] Forested areas	Mycorrhizal with conifers. Known from Cape Perpetua and Cascade Head Experimental Forest.	Assumed [b]	MIIH [c]	N/A	N/A
Chrysomphalina grossula	Yes [a] Forested areas	On water-soaked coniferous wood in mixed forests.	Assumed [b]	MIIH [c]	N/A	N/A
Cortinarius barlowensis	Yes [a] Forested areas	Terrestrial in coastal to montane conifer forests.	Assumed [b]	MIIH [c]	N/A	N/A
Cystangium idahoensis	Yes [a] Forested areas	Mycorrhizal with true fir above 3600 feet. Known on Marys Peak.	Assumed [b]	MIIH [c]	N/A	N/A

SPECIES	Potential habitat?	Habitat Description	Species present?	Determination of Effects	Analysis of Effects	Biological Investigation
Elaphomyces subviscidus	Yes [a] Forested areas	Mycorrhizal with conifers. Known from Connors Camp, Marys Peak area.	Assumed	MIIH[c]	N/A	N/A
Gastrolactarius camphoratus	Yes [a] Forested areas	Mycorrhizal with Douglas-fir and western hemlock. Known from Cummins Creek Area.	Assumed [b]	MIIH [c]	N/A	N/A
Melanogaster natsii	Yes [a] Forested areas	Western Washington to southern California. Associated with the Pinaceae family.	Assumed .	MIIH[c]	N/A	N/A
Otidea smithii	Yes [a] Forested areas	Known from lower elevations of Marys Peak.	Assumed .	MIIH[c]	N/A	N/A
Phaeocollybia californica	Yes [a] Forested areas	Mycorrhizal with conifers. Known from Cascade Head Exp. Forest.	Assumed [b]	MIIH [c]	N/A	N/A
Phaeocollybia dissiliens	Yes [a] Forested areas	Mycorrhizal with conifers. Endemic to the Oregon coast and Coast Range. Known from Marys Peak.	Assumed [b]	MIIH [c]	N/A	N/A
Phaeocollybia gregaria	Yes [a] Forested areas	Mycorrhizal with Douglas-fir and Sitka spruce. Known from Cascade Head Experimental Forest.	Assumed [b]	MIIH [c]	N/A	N/A
Phaeocollybia oregonensis	Yes [a] Forested areas	Terrestrial in conifer forest. Endemic to the Oregon Cascades and Coast Range.	Assumed [b]	MIIH [c]	N/A	N/A
Phaeocollybia sipei	Yes [a] Forested areas	Terrestrial in moist coniferous forests.	Assumed [b]	MIIH [c]	N/A	N/A

SPECIES	Potential habitat?	Habitat Description	Species present?	Determination of Effects	Analysis of Effects	Biological Investigation
Phaeocollybia spadiceae	Yes [a] Forested areas	Terrestrial in moist coniferous forests	Assumed [b]	MIIH [c]	N/A	N/A
Podostroma alutaceum	Yes [a] Forested areas	Terrestrial in coniferous and deciduous forests.	Assumed [b]	MIIH [c]	N/A	N/A
Pseudorhizina californica	Yes [a] Forested areas or areas with down rotting wood or stumps	Well-rotted stumps or logs of coniferous trees and litter or soil rich in brown rotted wood. One site on the Siuslaw National Forest.	Assumed [b]	No Impact This species requires down wood or stumps to persist and this project does not propose to remove any existing down material.	N/A	N/A
Ramaria rubribrunnescens	Yes [a] Forested areas	Late successional Douglas-fir and western hemlock forests.	Assumed [b]	MIIH [c]	N/A	N/A
Rhizopogon exiguus	Yes [a] Forested areas	Mycorrhizal with Douglas fir and western hemlock. Known from Marys Peak.	Assumed [b]	MIIH [c]	N/A	N/A

[a] Potential habitat present within the action area based on occurrence records, review of normal range and associated habitat.
[b] Species detection based on species-specific survey of individuals or habitat.
[c] MIIH = May Impact Individuals or Habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species

BEST MANAGEMENT PRACTICES

If the one of the Proposed Actions is implemented, BPA would implement construction Best Management Practices (BMPs) to avoid or minimize impacts from the Project on vegetation resources. BPA would coordinate with public land managers to implement vegetation-related BMPs and mitigation measures to ensure they are consistent with their policies. BPA would implement the following BMPs:

Construction-related BMPs**:**

- Prepare a site-specific Safety Plan before starting construction; specify how to manage hazardous materials, such as fuel and any toxic materials found in work sites; include a Fire Prevention and Suppression Plan and detail how to respond to emergency situations; keep the Safety Plan on site during construction and maintain and update, as needed.

- Explain vegetation-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Employ an on-site monitor during construction to ensure all construction-related mitigation measures and BMPs are correctly implemented
- Restrict construction personnel and their vehicles to designated work areas.
- Restrict construction activities (including trenching work) to the minimum work area needed to work safely and effectively to limit disturbance of native vegetation communities.
- Cut or crush vegetation rather than blading or clearing areas that would remain vegetated.
- Limit vehicle speeds on unpaved roads and surfaces to 15 miles per hour, or less, as approved by USFS or City of Corvallis, to minimize the production of dust.
- Control dust during construction, using water, lay down mats, or other physical means not including chemical application, as needed.
- Avoid mixing subsoil and top soil as much as possible.
- Stockpile topsoil and subsoil separately in small, low piles for a short period of time, so that it remains biological active.
- Replace topsoil and subsoil in the reverse order it was removed, so that the final vertical position of the soil horizons match the native soil configuaration.
- Avoid spreading any excavated soils in high-quality plant communities and do not spread excavated soils more than 10 feet from excavated areas; replace excavated soils in excavated holes, or if too much excavated material remains, remove from sensitive areas, or dispose of in an approved area, off-site.
- Leave vegetative strips adjacent to any open trench areas to avoid or minimize erosion and sedimentation.

Revegetation-related BMPs**:**

- Develop and implement a Revegetation Plan to revegetate areas disturbed by construction, including soil preparation as necessary, using site-specific methods developed for use within the Marys Peak Scenic Botanical Area and approved by USFS for use on USFS-managed lands and by City of Corvallis for use on City-managed lands.
- Monitor seed germination of seeded areas and growth of any planted materials until site stabilization is achieved (defined by an appropriate level of cover by native species or other appropriate objective); if vegetative cover is inadequate, implement adaptive management and reseed/replant to ensure adequate revegetation of disturbed soils.

Weed-related BMPs**:**

- Before construction, control noxious weeds in construction work areas manually, mechanically, and/or chemically as recommended for each species, prior to construction, if needed, with a focus on species with small, contained infestations to reduce the potential for widespread establishment and the need for long-term management.
- Before construction ensure that all hay, hay cubes, straw, and mulch possessed, used, or stored on public lands has proof of weed-free certification that meet or exceed North American Weed Management Association Weed-Free Forage certification standards.
- Ensure all aggregate (sand, crushed rock, gravel, etc.) is certified weed free prior to importation.

- During construction, follow the Fire Prevention and Suppression Plan, including equipping all construction vehicles with basic fire-fighting equipment, including extinguishers and shovels to be used to prevent fires that could harm native vegetation and result in disturbed areas that could be vulnerable to colonization by noxious weeds.
- Clean equipment and vehicles at air or water-wash stations at a location approved by USFS and BLM, prior to entering Marys Peak Road and as soon as possible after leaving each work area to minimize the introduction and spread of weeds during construction.
- During construction, use local sources of rock, if rock is needed, and obtain road fill materials from certified noxious weed–free quarries.
  Conduct a post-construction noxious weed survey approximately 1 year after construction, of all areas disturbed by construction activities, to determine if there are new or expanded noxious weed infestations; implement appropriate control measures of noxious weed infestations.

Non-vascular Plant and Fungi Related BMP's:

- Avoid removing trees, when possible.
- Avoid removing snags, downed trees, and woody debris, when possible, to minimize impacts to non-vascular species that grow on decaying wood or snags.
- During construction, minimize the area where soils are compacted to avoid physical damage to soil dwelling non-vascular species.
- Avoid soil disturbance from foot/vehicle traffic in forested areas where fungal species could be present in the soils
- Avoid staging equipment in forested areas.

Additional BMPs Recommended by RST:

In addition to the BMPs that BPA would incorporate into the project, the following recommendations would avoid or minimize or potential negative impacts before, during, and after construction.

Construction-related BMPs:

- Prior to the start of construction, provide training to all Project personnel on the ecological importance of the botanical resources at Marys Peak.
- Create staging areas in previously disturbed areas if possible, minimize the size of staging areas, and avoid placing staging areas in or directly next to the forest habitat.
- Minimize the number of trees that would be cut to preserve the high ecological quality of the forest habitat.
- Avoid soil compacting activities such as back blading, track walking, etc. to facilitate revegetation.

Revegetation-related BMPs:

- If the existing BPA communications site is decommissioned and the vegetation restored, allow the existing fence to remain in place for two to three years after restoration in order to protect restoration plants during establishment.

Weed-related BMPs:

- Prior to the start of construction, provide training to all Project personnel on the ecological and economic importance of controlling invasive species, how they can be spread during construction, and ways to avoid spreading or introducing weeds.
- Clean equipment and vehicles at air or water-wash stations at a location approved by USFS and BLM, prior to entering Marys Peak Road and as soon as possible after leaving each work area to minimize the introduction and spread of weeds during construction; inspect cleaned equipment prior to entering Marys Peak Road.
- Install boot scrapers at point(s) of entry and ensure all construction workers and visitors clean boots before entering and leaving work areas.

CONTROL OF NOXIOUS WEEDS

Tansy ragwort occurs in low numbers in two places along the road and can currently be controlled by hand pulling. When hand pulling, the entire plant, including the roots, should be removed because it can sprout from the roots even if the above-ground vegetation is removed. To reduce the seed bank, pulling should be done before the plants flower and produce seed. The shoulders of the access road should be monitored for additional occurrences of tansy ragwort and any plants observed should be pulled. Because there is ragwort seed present in the seed bank along the road, it will continue to germinate in the future.

Common St. Johnswort occurs throughout almost all of the survey area except within the forest and a few edges of the meadow. It is found in higher densities near the road, but is also present throughout the meadow. Because it is so numerous and has been allowed to flower and set seed, the seed bank is likely high, and there may be too many individuals to locate and hand pull. There are similar challenges associated with chemical control of common St. Johnswort. It would be difficult to locate all individuals, and may require many applications over several years because un-germinated seed may germinate in subsequent years, and any individuals not killed would add to the seed bank. Additionally, a chemical application would likely have a negative effect on native plants because common St. Johnswort is integrated into dense native plant populations. The most practical option to control common St. Johnswort in this setting would be using an appropriate biological control (Coombs 2004). BPA should discuss the use of these biological controls with the appropriate land manager.

The three main biological controls for common St. Johnswort that could be an option are:

- **St. Johnswort root borer** is currently established in Washington, Oregon, Idaho, Montana, and California. This species usually attacks plants growing in the shade and can be used in conjunction with other biological controls.
- **St. Johnswort moth** is present in eastern Washington and Oregon, and northern Idaho. It prefers drier open sites with a summer that is long enough to allow for two life cycles. This species is effective, but may not thrive in a wetter climate.

- **Klamath weed beetles** are widely available and do better in areas with strong fall rains where larval feeding can weaken plants before winter. Klamath weed beetles and St. Johnswort moth cannot be used in conjunction, but either species can be used in conjunction with St. Johnswort root borer.

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ATTACHMENT 1 - U.S. FISH AND WILDLIFE SERVICE LIST

U.S. Fish & Wildlife Service

IPaC Trust Resources Report

NAME

Marys Peak BPA Communication Site Project

LOCATION

Benton County, Oregon

IPAC LINK

https://ecos.fws.gov/ipac/project/YIACA-XXKWR-HOREH-NXYM7-MTI53M

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Oregon Fish And Wildlife Office
2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398
(503) 231-6179

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Birds

Marbled Murrelet Brachyramphus marmoratus — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08C

Northern Spotted Owl Strix occidentalis caurina — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08B

Streaked Horned Lark Eremophila alpestris strigata — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0B3

Yellow-billed Cuckoo Coccyzus americanus — Threatened

CRITICAL HABITAT
There is **proposed** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06R

Flowering Plants

Bradshaw's Desert-parsley Lomatium bradshawii — Endangered

CRITICAL HABITAT
No critical habitat has been designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q1YN

Golden Paintbrush Castilleja levisecta — Threatened

CRITICAL HABITAT
No critical habitat has been designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q26U

Kincaid's Lupine Lupinus sulphureus ssp. kincaidii — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q35E

Nelson's Checker-mallow Sidalcea nelsoniana — Threatened

CRITICAL HABITAT
No critical habitat has been designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q21M

Water Howellia Howellia aquatilis — Threatened

CRITICAL HABITAT
No critical habitat has been designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2RM

Willamette Daisy Erigeron decumbens — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2TF

Insects

Fender's Blue Butterfly Icaricia icarioides fenderi — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=I0IS

Taylor's (=whulge) Checkerspot Euphydryas editha taylori — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=I0T6

Mammals

Red Tree Vole Arborimus longicaudus — Candidate

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A0J3

Critical Habitats

This location overlaps all or part of the critical habitat for the following species:

Chinook Salmon Oncorhynchus (=Salmo) tshawytscha

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=E06D#crithab

Fender's Blue Butterfly Icaricia icarioides fenderi

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=I0IS#crithab

Kincaid's Lupine Lupinus sulphureus ssp. kincaidii

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q35E#crithab

Marbled Murrelet Brachyramphus marmoratus

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08C#crithab

Northern Spotted Owl Strix occidentalis caurina

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08B#crithab

Steelhead Oncorhynchus (=Salmo) mykiss

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=E08D#crithab

Streaked Horned Lark Eremophila alpestris strigata

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0B3#crithab

Taylor's (=whulge) Checkerspot Euphydryas editha taylori

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=I0T6#crithab

Willamette Daisy Erigeron decumbens

Final designated critical habitat

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2TF#crithab

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Burrowing Owl Athene cunicularia — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC

Fox Sparrow Passerella iliaca — Bird of conservation concern
Seasons: Breeding, Wintering

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ

Loggerhead Shrike Lanius ludovicianus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY

Marbled Godwit Limosa fedoa — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL

Olive-sided Flycatcher Contopus cooperi — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

Purple Finch Carpodacus purpureus — Bird of conservation concern
Season: Year-round

Rufous Hummingbird selasphorus rufus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0E1

Short-eared Owl Asio flammeus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

Vesper Sparrow Pooecetes gramineus ssp. affinis — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F9

Western Grebe aechmophorus occidentalis — Bird of conservation concern
Seasons: Breeding, Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA

Whimbrel Numenius phaeopus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JN

Willow Flycatcher Empidonax traillii — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F6

Wildlife refuges and fish hatcheries

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps all or part of the following National Wildlife Refuges:

William L. Finley National Wildlife Refuge 11,406.36 acres

PHONE (541) 757-7236

ADDRESS
C/o Willamette Valley Nwr Complex
26208 Finley Refuge Road
Corvallis, OR 97333

http://www.fws.gov/refuges/profiles/index.cfm?id=13589

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

Attachment 2 - Known and Suspected Occurrences of Special-Status Vascular and Non-vascular Plant Species and Fungi

Known occurrences of special-status plant species within 1 mile of West Point Spur component (data source: ORBIC). Species status/rank is designated by an ORBIC supported international system for ranking rare, threatened, and endangered species. Asterisks (*) denote species not suspected or documented on the SNF's or BLM's lists, and crosses (†) denote additional non-vascular species suspected to occur on the SNF and for which potential habitat is present or assumed within the Project area. An 'R' denotes USFS Regional Forester's Sensitive fungi species.

Scientific Name	Taxon	Species Status/Rank	Suitable Habitat	General Location within 1 mile radius of BPA Communications Site and Access Road
Bridgeoporus nobilissimus [R]	Fungus	ORBIC List 1 G3, S3	On true fir (*Abies* spp.) trees, snags and stumps particularly noble fir	Noble fir stand southwest of paved parking lot
Chamonixia caespitosa† [R]	Fungus	ORBIC List 2 G5, S1	Mycorrhizal with conifers; known from Cape Perpetua and Cascade Head Experimental Forest.	Habitat present (forested areas)
Chrysomphalina grossula	Fungus	ORBIC List 3 G3G4	Gregarious to caespitose substrate on wet coniferous woody debris in forests or parks	Access road, BPA communications site, surrounding area
Cortinarius barlowensis† [R]	Fungus	ORBIC List 2 G3,S2	Terrestrial in coastal to montane conifer forests.	Habitat present (forested areas)
Cystangium idahoensis [R]	Fungus	ORBIC List 1 G2G3, S1	Mycorrhizal with true fir above 3600 feet. Known on Marys Peak	Vicinity of existing City of Corvallis communications site
*Elaphomyces subviscidus**	Fungus	ORBIC List 3 G2G3, S1S2	Associated with lodgepole pine and mountain hemlock in high elevations	Southeast of BPA communications site, downslope
Gastrolactarius camphoratus† [R]	Fungus	ORBIC List 1 G2, S2	Mycorrhizal with Douglas-fir and western hemlock; known from Cummins Creek Area	Habitat present (forested area)
*Melanogaster natsii**	Fungus	ORBIC List 3	Western Washington to southern California; associated with the Pinaceae family	Much of the Project area (forested areas)
Otidea smithii	Fungus	ORBIC List 3 G2, S2	Exposed soil, duff, or moss under Douglas fir, western hemlock, and black cottonwood	Much of the Project area (forested areas)

Scientific Name	Taxon	Species Status/Rank	Suitable Habitat	General Location within 1 mile radius of BPA Communications Site and Access Road
Phaeocollybia californica [R]	Fungus	ORBIC List 1 G3, S3	Mycorrhizal with conifers; known from Cascade Head Experimental Forest.	Northeast of BPA communications site outside of the perimeter fence.
Phaeocollybia dissiliens† [R]	Fungus	ORBIC List 3 G3, S3	Mycorrhizal with conifers; Endemic to the Oregon coast and Coast Range; known from Marys Peak.	Habitat present (forested areas)
Phaeocollybia gregaria [R]	Fungus	ORBIC List 1 G1G2, S1S2	Mycorrhizal with Douglas-fir and Sitka spruce; nown from Cascade Head Experimental Forest	Small area near road downslope of paved parking lot as well as small area southeast of BPA communications site
Phaeocollybia oregonensis† [R]	Fungus	ORBIC List 1 G2?, S2?	Terrestrial in conifer forest; ndemic to the Oregon Cascades and Coast Range	Habitat present (forested areas)
*Phaeocollybia sipei**	Fungus	ORBIC List 3 G3?, S3?	Association with the roots of noble fir, Douglas fir, and western hemlock.	Much of the Project area
*Phaeocollybia spadicea**	Fungus	ORBIC List 4 G4, S3?	Moist old growth coastal forests; ectomycorrhizal association with western hemlock, Sitka spruce, and Douglas fir	Small area near road downslope of paved parking lot
Podostroma alutaceum	Fungus	G3G4, S2	Mature forests with abundant rotting wood; found in the Pacific Northwest	Small area, south and downslope of BPA communications site
Pseudorhizina californica† [R]	Fungus	ORBIC List 2 G4, S2	Well-rotted stumps or logs of coniferous trees and litter or soil rich in brown rotted wood;one site on the Siuslaw National Forest	Habitat present (forested areas)
Ramaria rubribrunnescens	Fungus	ODA/ODFW: SE, ORBIC List 3 G2G3, S2?	Fruits in humus or soil and is associated with Pinaceae family	Northwest of BPA communications site
Rhizopogon exiguous [R]	Fungus	ODA/ODFW: SE G2G3, S1S2	Mycorrhizal with Douglas fir and western hemlock Known from Marys Peak	Much of southeastern portion of Project area

Scientific Name	Taxon	Species Status/Rank	Suitable Habitat	General Location within 1 mile radius of BPA Communications Site and Access Road
Bryoria subcana†	Lichen	ORBIC List 2 G3G4	In humid microsites on conifers of mature stands	None
Lobaria linita†	Lichen	ORBIC List 2 G4G5 S2	Lower boles of conifers and moss covered rocks in cool microsites;only coastal Oregon location near the summit of Mt. Hebo	Habitat present (forested areas)
Tholurna dissimilis†	Lichen	ORBIC List 2 G4G5, S3	Epiphytic on exposed branches and twigs in humid alpine and sub-alpine habitats	Habitat present (forested areas)
Haplomitrium hookerii†	Liverwort	ORBIC List 2 G4, S1	Pacific Northwest on sandy outwash areas adjacent to coastal streams	Habitat present
Andreaea schofieldiana†	Moss	ORBIC List 2 G2G3, S1	On igneous rock outcrops at middle to high elevation;known from British Colombia to California	Habitat present (rock garden/road/meadow)
Bryum calobryoides†	Moss	ORBIC List 2 G3, S2	Damp soil, rock ledges, and outcrops at middle to higher elevations	Habitat present (rock garden/road/meadow)
Encalypta brevicollis†	Moss	ORBIC List 2 G4, S1	Igneous rock outcrops at mid-elevations subject to frequent fog;known from across Canada and sites in the Siskiyou Mountains	Habitat present (rock garden/meadow/road)
Entosthodon fascicularis†	Moss	ORBIC List 2 G4G5, S1	Seasonally wet soils below 3000 ft elevation	None
*Grimmia anomala**	Moss	G5, S2	Forms cushions on igneous or serpentine rocks in shade or crevices of exposed rocks	Small area at edge of noble fir stand, east of BPA communications site
Tetraphis geniculata†	Moss	ORBIC List 2 G3G5, S1	Older conifer forest, occurring on snags, logs and stumps	Habitat present (forested areas)
*Poa laxiflora**	Vascular plant	ORBIC List 4 G3G4, S3	Moist areas including riparian zones, bogs, seeps and springs;tolerates partial	Near edge of 1-mile buffer, west of BPA communications site

Scientific Name	Taxon	Species Status/Rank	Suitable Habitat	General Location within 1 mile radius of BPA Communications Site and Access Road
			to full shade and associates with western hemlock; elevation ranges from 55 – 3800 feet.	

The Ranks "S" for state and "G" for global follow a 1-5 ranking system:
1 = Critically imperiled; 2 = Imperiled; 3 = Rare and uncommon, vulnerable; 4 = Not rare and apparently secure; 5 = Demonstrably widespread, abundant and secure
A "?" after a rank denotes an ORBIC probable rank:
ORBIC List 1 = Threatened or endangered throughout range
ORBIC List 2 = Threatened or endangered in Oregon but secure elsewhere
ORBIC List 3 = Review species, taxa for which more information is needed
ORBIC List 4 = Watch, taxa of conservation concern but are not currently threatened or endangered
Oregon Department of Agriculture/Oregon Department of Fish and Wildlife state designations are as follow: SC = state candidate; ST = state threatened; SE = state endangered

ATTACHMENT 3 - ORBIC LIST OF VASCULAR AND NON-VASCULAR PLANT SPECIES AND FUNGI THAT OCCUR IN BENTON COUNTY, OREGON

The following are the ORBIC sensitive plant species list returned from the Rare Threatened and Endangered species of Oregon, 2016 ORBIC document when queried for Benton County, to develop a plant list for the city of Corvallis lands. Vascular plant species whose distributions are restricted by substantive habitat requirements that are not supported within the Project area, such as aquatic, riparian, low elevation, coastal species, etc. are marked with a hashtag and were not included in the final target survey special-status species list (Attachment 5). Asterisks denote species not suspected or documented on the SNF's or BLM's lists. Crosses denote additional non-vascular species suspected to occur on the SNF and for which potential habitat is present or assumed within the Project area and an 'R' denotes USFS Regional Forester's Sensitive fungi species.

The Ranks "S" for state and "G" for global follow a 1-5 ranking system:
1 = Critically imperiled; 2 = Imperiled; 3 = Rare and uncommon, vulnerable; 4 = Not rare and apparently secure; 5 = Demonstrably widespread, abundant and secure
A "?" after a rank denotes an ORBIC probable rank:
ORBIC List 1 = Threatened or endangered throughout range
ORBIC List 2 = Threatened or endangered in Oregon but secure elsewhere
ORBIC List 3 = Review species, taxa for which more information is needed
ORBIC List 4 = Watch, taxa of conservation concern but are not currently threatened or endangered
Oregon Department of Agriculture/Oregon Department of Fish and Wildlife state designations are as follow: SC = state candidate; ST = state threatened; SE = state endangered

Scientific Name	Taxon	Species Status/Rank	Suitable Habitat	Habitat Present
Arcangeliella camphorata*	Fungus	ORBIC List 1 G2, S2	Occurs principally in soil and litter in Western Hemlock (44%), Tan Oak (31%) and Sitka Spruce (19%) series at elevations of 20-3039 (1418) feet	None, out of elevational range
Balsamia nigrans	Fungus	ORBIC List 3 G2G4, S2	Fir, oak, Douglas fir, Jeffery pine, low to mid elevation	Habitat present (forested areas)
Boletus regius	Fungus	ORBIC List 3 G5, S2?	Usually found with oaks in coastal forests, with conifers in mountains	Habitat present (forested areas)
Chrysomphalina grossula	Fungus	ORBIC List 3 G3G4	Gregarious to caespitose substrate on wet coniferous woody debris in forests or parks	Access road, BPA communications site, surrounding area
Clavariadelphus subfastigiatus	Fungus	ORBIC List 3 G3?, S2?	Found in scattered to gregarious or bundled in clusters of 6-20, on	Habitat present (forested areas)

			well-decayed humus of coniferous woods	
*Clitocybe senilis**	Fungus	ORBIC List 3 G3G4Q, S3?	On duff in coniferous forests	Habitat present (forested areas)
Cortinarius cyanites	Fungus	ORBIC List 2 G3,S2	On soil in coniferous forests	Habitat present (forested areas)
Cystangium idahoensis	Fungus	ORBIC List 1 G2G3, S1	Mycorrhizal with true fir above 3600 feet. Known on Marys Peak	Vicinity of existing City of Corvallis communications site
Elaphomyces decipiens	Fungus	ORBIC List 3 G2?, S1	Mycorrhizal with Pinaceae species	Habitat present (forested areas)
Elaphomyces subviscidus	Fungus	ORBIC List 3 G2G3, S1S2	Associated with lodgepole pine and mountain hemlock in high elevations	Habitat present (forested areas)
Endogone oregonensis	Fungus	ORBIC List 3 G2G3, S2	Mycorrhizal; associated with *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*	Habitat present (forested areas)
Gastroboletus ruber	Fungus	ORBIC List 3 G3, S3	Mycorrhizal; associated with various Pinaceae	Habitat present (forested areas)
*Gymnomyces cremeus**	Fungus	ORBIC List 3	Mycorrhizal with oaks	None, no oaks present
*Gymnomyces monosporus**	Fungus	ORBIC List 3 G1, S1	Mycorrhizal with Douglas fir	Habitat present (forested areas)
*Leptonia occidentalis var. occidentalis**	Fungus	ORBIC List 1 G1, S1	Found in low to mid-elevation mixed conifer-hardwood stands that may include *Pseudotsuga menziesii*, *Calocedrus decurrens*, *Pinus lambertiana*, *Arbutus menziesii*, *Notholithocarpus densiflorus*, and *Berberis nervosa*. Historical collection sites in the vicinity of Corvallis OR are likely non extant	Habitat present (forested areas)
*Leucogaster microspores**	Fungus	ORBIC List 4 G3, S3	Mycorrhizal; associated with roots of *Pseudotsuga menziesii* and *Tsuga heterophylla*	Habitat present (forested areas)

*Melanogaster natsii**	Fungus	ORBIC List 3	Western Washington to southern California; associated with the Pinaceae family	Much of the Project area (forested areas)
Mycena tenax	Fungus	ORBIC List 3 G3G4, S2S3	In duff under *Abies, Pseudotsuga, Picea, and Sequoia*	Habitat present (forested areas)
Otidea smithii	Fungus	ORBIC List 3 G2, S2	Exposed soil, duff, or moss under Douglas fir, western hemlock, and black cottonwood	Much of the Project area (forested areas)
Phaeocollybia dissiliens† [R]	Fungus	ORBIC List 3 G3, S3	Mycorrhizal with conifers; endemic to the Oregon coast and Coast Range;known from Marys Peak	Habitat present (forested areas)
Phaeocollybia gregaria	Fungus	ORBIC List 1 G1G2, S1S2	Mycorrhizal with Douglas-fir and Sitka spruce; known from Cascade Head Experimental Forest	Small area near road downslope of BPA communications site
Phaeocollybia pseudofestiva	Fungus	G3, S3?	Scattered to caespitose, in humus or soil associated with species of Pinaceae, mixed conifers and hardwoods. In Oregon and Washington: occurs primarily in the Western Hemlock series (63%) at elevations of 35-3682 (1420) feet	Habitat present (forested areas)
Phaeocollybia radicata	Fumgus	ORBIC List 3 G2, S1	Mycorrhizal, under conifers, moist forests	Habitat present (forested areas)
Podostroma alutaceum	Fungus	G3G4, S2	Mature forests with abundant rotting wood; Found in the Pacific Northwest	Small area, south and downslope of BPA communications site
Ramaria abietina	Fungus	ORBIC List 2 G4G5, S2	On coniferous debris	Habitat present (forested areas)
Ramaria aurantiisiccescens	Fungus	ORBIC List 4 G3, S3	In humus or soil associated with species of Pinaceae, mixed	Habitat present (forested areas)

			conifers and hardwoods. In Oregon and Washington: occurs primarily in the Western Hemlock series (63%) at elevations of 35-3682 (1420) feet	
Ramaria gelatiniaurantia	Fungus	ORBIC List 3 G4, S2?	Occurs on litter and soil, associated with Pinaceae spp. In Oregon and Washington: occurs primarily in Western Hemlock series (88%) at elevations of 1632-3618 (2409) feet	Habitat present (forested areas)
Ramaria gracilis	Fungus	ORBIC List 3 G4G5, S2?	In humous or soil, associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*	Habitat present (forested areas)
Ramaria largentii	Fungus	ORBIC List 3 G3, S2?	Occurs on soil, litter and humus, associated with Pinaceae spp. In Oregon and Washington: occurs primarily in Western Hemlock (48%), White Fir (19%), Douglas Fir (14%) and Pacific Silver Fir (14%) series at elevations of 1332-5108 (3339) feet	Habitat present (forested areas)
Ramaria maculatipes	Fungus	ORBIC List 3 G3, S2?	In humous or soil, associated with *Abies* spp., *Pseudotsuga menziesii, Tsuga heterophylla*	Habitat present (forested areas)
Ramaria rubribrunnescens	Fungus	ODA/ODFW: SE, ORBIC List 3 G2G3, S2?	Fruits in humus or soil and is associated with Pinaceae family	Northwest of BPA communications site
Ramaria suecica	Fungus	ORBIC List 3 G2G3, S1S3	On litter	Habitat present (forested areas)

Rhizopogon brunneiniger	Fungus	ORBIC List 3 G2G3, S2?	Mycorrhizal species associated with Pinaceae	Habitat present (forested areas)
Rhizopogon exiguous	Fungus	ODA/ODFW: SE G2G3, S1S2	Mycorrhizal with Douglas fir and western hemlock; known from Marys Peak	Much of southeastern portion of Project area
Rhizopogon subcinnamomeus	Fungus	ORBIC List 3 G2G3, S1	Mychorrhizal with Pinaceae	Habitat present (forested areas)
Rhizopogon subradicatus	Fungus	ORBIC List 2-ex G2G3, SH	Found under *Pinus ponderosa*. Known from west of the Cascade crest in Benton Co., Oregon	None, no Ponderosa pine present
*Stropharia albivelata**	Fungus	ORBIC List 3 G3?, S3?	Associated with conifer litter	Habitat present (forested areas)
Tuber asa[R]	Fungus	ORBIC List 3 G3, S1	Mycorrhizal species associated with *Pseudotsuga menziesii* and *Tsuga heterophylla*	Habitat present (forested areas)
Tuber quercicola	Fungus	Orbic List 3	Mycorrhizal with oaks	None, no oaks present
Urnula craterium	Fungus	ORBIC List 2-ex G4, SH	Solitary or more often in groups or clusters on or near rotting hardwood sticks and logs (the wood often buried); common in eastern North America in the spring	Habitat present (forested areas)
*Calicium abietinum**	Lichen	ORBIC List 4 G4G5, S3	Found on lignum or occasionally bark of conifer trees or lignum of oak logs and stumps. Usually occurs on snags and old wood of trees at least 200 years old, but occasionally is found on old weathered wooden fenceposts mostly in sparsely forested regions	Marginal habitat (forested areas)
Calicium adspersum	Lichen	ORBIC List 2 G3G4, S1	Old-growth conifer forests in relatively	Habitat present (forested areas)

			cool-humid stands with maritime climactic influence; relatively dense trees but sparse understory	
Calicium quercinum	Lichen	ORBIC List 3, G3G4, S1	Single known occurrence in the PNW, documented on bark of old Quercus garryana trunks in an open grove	None, no oak present
*Chaenothecopsis rubescens**	Lichen	ORBIC List 3	In Oregon, found at the base of Oregon white oak	None, no oaks present
Cladidium bolanderi	Lichen	ORBIC List 2, G4, S1	Found on a variety of rock types (sandstone, chert, granite, serpentine) on coastal bluffs and coastal grasslands; elevation: sea level to 1000 feet	None, out of elevational range
*Pseudocyphellaria hawaiiensis**	Lichen	ORBIC List 4, G4, S3	Found on conifers, hardwoods and ericaceous shrubs, usually in hypermaritime locations in Oregon, but infrequently found inland	Marginal habitat present as area is inland (forested areas)
Pseudocyphellaria malotta	Lichen	ORBIC List 2 G4, S3	Humid stands of *Pseudotsuga menziesii* and *Tsuga heterophylla;* sites usually occur along with an abundant and diverse cyanolichen flora;small conifer branches are the most common substrate	Habitat present (forested areas)
Schaereria dolodes	Lichen	ORBIC List 3, G3G4, S2	On bark of conifers (mostly *Pseudotsuga menziesii but also Abies spp, Larix occidentalis, Thuja plicata, Libocedrus decurrens,*	Habitat present (forested areas)

			Betula papyrifera, and Arctostaphylos columbiana) and decaying wood in mature, dry, open forests. Elevation ranges from 1500 feet to 11,000 feet at the southern end of its range	
Sclerophora peronella	Lichen	ORBIC List 2, G5, S1	In Polk County, Oregon it is found on the bark and lignon big leaf maples and on lignon of basal scars at 1200 feet in elevation. In other parts of Oregon it has been found on oaks, big leaf maples, alder and other hardwoods	None, out of elevational range
*Usnea rubicunda**	Lichen	ORBIC List 4, G4G5, S3	On the bark of trees and shrubs along the coast. Forest types are *Picea sitchensis, Pinus contorta* ssp. *contorta*, and *Pseudotsuga menziesii* associations	None, area is not coastal
*Usnea subgracilis**	Lichen	ORBIC List 2, G5, S1	Found on conifer bark and wood, occasionally hardwoods, in maritime habitats. Rarely found on rock	None, area not coastal
Blepharostoma arachnoideum	Liverwort	ORBIC List 2 G3G4, S2	Moist decayed wood, rock, or soil. Known from NW California to southwest BC	Habitat present (mostly forested areas)
Sphaerocarpos hians[R]	Liverwort	ORBIC list 1 G1, S1	Grows on mud of river bank (Upper Willamette River). The liverwort is a seasonal ephemeral which is evident in summer and fall, when the water levels are low	None, no rivers or streams present

*Bruchia flexuosa**	Moss	ORBIC List 2 G4,S1	In the Pacific Northwest is known only from native, degraded in the Willamette Valley and in mud flats around reservoirs. Restricted to low elevations of about 500 feet	None, no mud flats and out of elevational range
Ephemerum serratum	Moss	ORBIC List G4, S1	Occurs on damp disturbed soil, often in old fields, pastures, and along the edges of ponds	None , no water bodies, disturbed soil is mostly associated with roads
Micromitrium synoicum	Moss	ORBIC List 2 G4, S1	Forming small to extensive turfs on beds and banks of seasonal lakes, ponds, and streams at elevations below 800 feet	None, out of elevational range, no water bodies
Physcomitrella patens	Moss	ORBIC List 2 G4, S1	Forming small to extensive turfs on beds and banks of seasonal lakes, ponds, and streams at elevations below 800 feet	None, out of elevational range, no water bodies
Physcomitrium immersum	Moss	ORBIC List 3 G4, S1	Occurs in damp soil in floodplains, mud flats, on the banks of streams, bottoms of dried up reservoirs, and on bare soil in fields and roadsides	None, out of elevational range, no water bodies
*Plagiothecium piliferum**	Moss	ORBIC List 3 G5, S3	Occurring in openings among grasses, or forming larger colonies on open expanses of seasonally moist bare soil such as fallow fields or mud flats	Marginal habitat present (meadows)
*Racomitrium brevipes**	Moss	ORBIC List 3	Occurs on dry and exposed acidic rocks from 60 -7,000 feet. Known on Marys Peak	Marginal habitat (small amounts of rock on the edge of the meadows)

			at 4,000 feet on south facing slopes on basalt on the edge of graminoid meadows	
Tetraplodon mnioides	Moss	ORBIC List 3 G5, S3	On old carnivore dung, or soil and rotten wood enriched by dung, on roadsides, trails, in dry to moist coniferous forest of various age classes including early seral, and in peatlands	Habitat present (mostly in forested areas)
Ammannia robusta#	Vascular plant	ORBIC List 3 G5	Wet places, drying ponds, ditch margins; occurs at less than 1,650 feet in elevation	None, no water features present, out of elevational range
Callitriche fassettii#	Vascular plant	ORBIC List 3 G1Q	Obligate wetland plant	None, no wetlands present
Callitriche trochlearis#	Vascular plant	ORBIC List 3 G3?	Obligate wetland plant	None, no wetlands present
Chloropyron maritimum ssp. Palustre#	Vascular plant	ORBIC List 1 G4, S2	Obligate wetland plant	None, no wetlands present
*Cimicifuga elata Nutt. var. elata#**	Vascular plant	ORBIC List 4 G4, S4	Moist, wooded slopes, damp forest margins and roadsides, along shaded streams, rather open to closed woods, mountain hemlock habitats; occurs at 197 to 2953 feet in elevation	None, out of elevational range
*Cypripedium montanum**	Vascular plant	ORBIC List 4 G4 S3S4	Mesic to dry (rarely wet) coniferous, deciduous, and broadleaf evergreen forests, openings, and thickets, around shrubs on open slopes; occurs from sea level up to 7,874 feet in elevation	Habitat Presen (forested areas)
Delphinium pavonaceum#	Vascular plant	ORBIC List 1 G1Q, S1	Nearly flat areas in moist, silty soils of the Willamette Valley River floodplains; occurs from	None, out of elevational range

			150 to 400 feet in elevation	
Diplacus tricolor3	Vascular plant	ORBIC List 2 G4, S2	Obligate wetland plant	None, no wetlands present in survey area
*Enemion stipitatum**	Vascular plant	ORBIC List 4 G4, S3	Shaded shrubby areas, oak woodlands, and moist deciduous or mixed evergreen forests, occasionally in open pastures; occurs from 656 to 4,921 feet in elevation	Marginal habitat present (forested areas)
Erigeron decumbens#	Vascular plant	ORBIC List 1 G1, S1	Seasonally flooded bottomland prairies and well-drained upland prairies; Elevation: 240 to 950 feet	None, out of elevational range
*Erythronium revolutum#**	Vascular plant	ORBIC List 4 G4G5, S4	Shaded stream banks, river terraces, wet places in forests; Elevation: 0-1969 feet	None, no water features present or significantly wet places in forested areas
Horkelia congesta. ssp. Congesta#	Vascular plant	ORBIC List 1 G4, S2	Wet to dry remnant prairies, generally near valley bottoms, or on balds of low hills in oak-conifer woodlands, generally on volcanic soil; Elevation: 263 to 2297 feet	None, no oak conifer woodlands present
Howellia aquatilis#	Vascular plant	ORBIC List 1 G3, S1	Obligate wetland plant	None,no wetlands present
Hydrocotyle verticillata#	Vascular plant	ORBIC List 2 G4G5, S1	Obligate wetland plant	None, no wetland present
Lathyrus holochlorus#	Vascular plant	ORBIC List 1 G2?, S2	Prairie edge/oak savanna/prairie-oak woodland; Elevation: 984 to 1969	None, no oak savanna or prarie oak woodland present in survey area
Lipocarpha micrantha#	Vascular plant	ORBIC List 2 G5?, S1	Obligate wetland plant	None, no wetlands present
Lomatium bradshawii#	Vascular plant	ORBIC List 1 G2, S2	Wet prairie habitats in clay soil or substrates having a dense clay layer below the surface, in flooded praries near	None, no wetlands or stream channels present

			creeks and small rivers, and in shallow well-drained soils underlain by basalt, usually in vernal wetlands or along stream channels	
Lupinus oreganus	Vascular plant	ORBIC List 1 G2, S2	Upland prairie remnants and ecotones between grasslands and forest, in heavy well-drained soils elevation: < 2750 feet	Marginal habitat present (meadows)
*Montia howellii#**	Vascular plant	ORBIC List 4 G3G4, S3S4	Moist woods; Elevation: 0 to 1640 feet	None, out of elevational range
Navarretia willamettensis#	Vascular plant	ORBIC List 1 G1, S1	Margins of ponds and lakes, bottoms of ephemeral streams and pools, and wet clay flats	None, no water bodies or wetlands
Poa laxiflora	Vascular plant	ORBIC List 4 G3G4, S3	Moist areas including riparian zones, bogs, seeps and springs. Tolerates partial to full shade and associates with western hemlock; Elevation: 55 to 3800 feet	Near edge of 1-mile buffer, west of BPA communications site Some small areas of habitat with enough moisture to support *Poa laxiflora are* present in the forested locations
*Potamogeton robbinsii#**	Vascular plant	ORBIC List 3 G5	Obligate wetland plant	None, no wetlands present
Pyrrocoma racemose var. racemossa#	Vascular plant	ORBIC List 2 G5, S2?	Coastal valleys and marshes, neutral or saline soils; Elevation: 0 to 984feet	None, out of elevational range
Rotala ramosior#	Vascular plant	ORBIC List 3 G5	Obligate wetland plant	None, no wetlands present
Sclerolinem digynum	Vascular plant	ORBIC List 3 G5	Vernally moist meadows, equally likely to occur in wetlands and non-wetlands; Elevation: 984 to 6234 feet	Marginal habitat present (meadow)
*Sidalcea campestris#**	Vascular plant	ORBIC List 4 G4, S4	Open shrub lands, meadows, hedgerows, prairies; Elevation: 131 to 656 feet	None, outside of elevational range

Sidalcea nelsoniana#	Vascular plant	ORBIC List 1, G2G3, S2	Open prairie remnants along margins of steams, sloughs, ditches, roadsides, fence rows, , drainage swales and fallow fields; Elevation: 140 to 2000 feet	None (out of elevational range)
Sisyrinchium hitchcockii	Vascular plant	ORBIC List 1 G2, S1	Grassy areas, openings in woods, mostly where somewhat dry later in season; of conservation concern; Elevation: 656 to 3281 feet	Marginal habitat present (forest and meadow areas)
Taraxia ovata#	Vascular plant	ORBIC List 2 G3G4, S1	Mixed conifer forest; Elevation: < 1640 feet	None, outside elevational range
Utricularia gibba#	Vascular plant	ORBIC List 2, G5, S1	Obligate wetland plant	None, no wetlands present
*Viola praemorsa ssp. Praemorsa**	Vascular plant	ORBIC List 3 G5	Found in vernally moist soil, slopes, meadows, conifer forest, sagebrush; Elevation: 400 to 7349 feet	Habitat present (forest and meadow areas)
Wolffia borealis#	Vascular plant	ORBIC List 2 G5, S1	Obligate wetland plant	None, no wetlands present
*Wolffia brasiliensis#**	Vascular plant	ORBIC List 3 G5	Obligate wetland plant	None, no wetlands present
Wolffia Columbiana#	Vascular plant	ORBIC List 2, G5, S1	Obligate wetland plant	None, no wetlands present

ATTACHMENT 4 - VASCULAR AND NON-VASCULAR PLANT SPECIES AND FUNGI ON THE SNF AND SALEM DISTRICT BLM SENSITIVE PLANT LISTS

SNF and BLM Sensitive plant species list obtained from ISSSSP query, and their potential to occur on SNF and Salem District BLM lands. Potential to occur defined as follows:
Low = not on ORBIC, and has only one suspected with no documented occurrences on SNF or Salem District BLM lands
Moderate = Occurs on ORBIC or has at least one documented occurrence on SNF or Salem District BLM lands
High= occurs on ORBIC and has one documented and one suspected, or two documented occurrences on SNF or Salem District BLM lands
Oregon Department of Agriculture/Oregon Department of Fish and Wildlife state designations: SC = state candidate; ST = state threatened; SE = state endangered. Federal ESA Status designations: FT = Federally threatened; FE = Federally Endangered.

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Lichens and Mosses				
Anaptychia crinalis	hanging fringe lichen	Moderate	None	None
Andreaea nivalis	Schofield's Andreaea moss	Moderate	None	None
Andreaea schofieldiana	moss	Low	None	None
Anomobryum julaceum	Anomobryum moss	Moderate	None	None
Anthelia julacea	alpine silverwort (liverwort)	Low	None	None
Barbilophozia barbata	liverwort	Moderate	None	None
Blepharostoma arachnoideum	liverwort	Low	None	None
Bruchia bolanderi	Bolander's pygmy moss (Bolander's candle moss)	Low	None	None
Bryoria bicolor	lichen	Moderate	None	None
Bryoria pseudocapillaris (formerly B. spiralifera)	horse hair lichen	Moderate	None	None
Bryoria subcana	lichen	Moderate	None	None
Bryum calobryoides	moss	Low	None	SC
Buellia oidalea	disc lichen	Low	None	None
Calicium adspersum	lichen	Low	None	None
Calicium quercinum	lichen	Low	None	None
Caloplaca stantonii	Stanton's orange lichen	Low	None	None
Calypogeia sphagnicola	liverwort	Low	None	None
Campylopus schmidii	moss	Moderate	None	None

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Campylopus subulatus	awl-leaved swan-neck moss	Moderate	None	None
Cephaloziella spinigera	liverwort	Low	None	None
Cladidium bolanderi	lichen	Moderate	None	None
Cynodontium jenneri	Jenner's dog-tooth moss	Moderate	None	None
Encalypta brevicollis	extinguisher moss	Moderate	None	None
Encalypta brevipes	moss	Moderate	None	None
Entosthodon fascicularis	moss	Low	None	None
Ephebe solida	lichen	Moderate	None	None
Ephemerum serratum	serrated earth-moss	Low	None	None
Fissidens fontanus	moss	Low	None	None
Grimmia anomala	Grimmia dry rock moss	Moderate	None	None
Grimmia lisae	Flett's dry rock moss	Moderate	None	None
Gymnomitrion concinnatum	liverwort	Low	None	None
Haplomitrium hookeri	liverwort	Moderate	None	None
Herbertus aduncus ssp. *aduncus*	liverwort	Low	None	None
Herbertus dicranus	Pacific scissorleaf liverwort	Low	None	None
Heterodermia japonica	Japanese centipede lichen	Low	None	None
Heterodermia leucomelos	chin strap lichen	Moderate	None	None
Heterodermia sitchensis	seaside centipede (Lichen)	Low	None	None
Hygrobiella laxifolia	liverwort	Low	None	None
Hypogymnia pulverata	tube lichen	Low	None	None
Hypogymnia subphysodes	Austral bone lichen	Low	None	None
Hypotrachyna riparia	riparian loop lichen	Low	None	None
Iwatsukiella leucotricha	moss	Low	None	None
Kurzia makinoana	liverwort	Low	None	None
Lecanora caesiorubella ssp. *merrillii*	Merrill's rim lichen	Moderate	None	None
Leioderma sorediatum	lichen	Moderate	None	None
Leptogium burnetiae	Burnet's skin lichen	Low	None	None

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Leptogium cyanescens	lichen	Moderate	None	None
Leptogium platynum	skin lichen	Moderate	None	None
Limbella fryei	moss	Low	None	None
Lobaria linita	lichen	Moderate	None	None
Lophozia gillmanii	Gillman's pawwort (liverwort)	Low	None	None
Lophozia laxa	stream ladderwort	Moderate	None	None
Marsupella emarginata var. *aquatica*	(robust rustwort; liverwort)	Low	None	None
Melanelia commixta	lichen	Low	None	None
Metzgeria violacea	liverwort	Moderate	None	None
Microcalicium arenarium	rock broom (sandwort microcalicium, lichen)	Low	None	None
Micromitrium synoicum	micromitrium moss	Low	None	None
Niebla cephalota	lichen	Moderate	None	None
Ochrolechia subplicans ssp. *subplicans*	crabseye lichen	Moderate	None	None
Pannaria rubiginella	lichen	Moderate	None	None
Pannaria rubiginosa	Brown-eyed shingle Lichen	Low	None	None
Physcomitrella patens	physcomitrella moss	Low	None	None
Physcomitrium immersum	immersed bladder-moss	Low	None	None
Pilophorus nigricaulis	lichen	Moderate	None	None
Plagiochila semidecurrens var. *alaskana*	liverwort	Low	None	None
Plagiothecium cavifolium	moss	Low	None	None
Pohlia bolanderi	Bolander's thread-moss	Low	None	None
Pohlia ludwigii	Ludwig's thread-moss	Low	None	None
Polytrichastrum sexangulare var. *sexangulare*	northern haircup (moss)	Low	None	None
Polytrichum strictum	moss	Low	None	None
Porella vernicosa ssp. *fauriei*	Pacific scalemoss (liverwort)	Low	None	None

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Preissia quadrata	blister ribbon (narrow mushroom-headed liverwort)	Low	None	None
Racomitrium ryszardii	moss	Low	None	None
Radula brunnea	brown flatwort (liverwort)	Moderate	None	None
Ramalina pollinaria	lichen	Low	None	None
Rhytidiadelphus subpinnatus	moss	Low	None	None
Rhytidium rugosum	crumpled-leaf moss	Moderate	None	ST
Rosulabryum gemmascens	moss	Low	None	None
Scapania gymnostomophila	liverwort	Low	None	SC
Schaereria dolodes	tricky lecidea (lichen)	Low	None	None
Sclerophora peronella	lichen	Moderate	None	None
Scouleria marginata	moss	Low	None	None
Sigridea californica	California dirina (lichen)	Low	None	None
Sphaerocarpos hians	liverwort	Low	None	ST
Sphagnum oregonense	moss	Low	None	None
Stereocaulon spathuliferum	chalk foam (snow lichen)	Low	None	None
Sticta arctica	lichen	Moderate	None	None
Sticta weigelii	lichen	Low	None	ST
Teloschistes flavicans	lichen	Moderate	None	None
Tetraphis geniculata	moss	Low	None	None
Thamnobryum neckeroides	moss	Moderate	None	None
Thelomma mammosum	rock nipple lichen (doll's eye)	Low	None	None
Tholurna dissimilis	lichen	Low	None	None
Tortella fragilis	moss	Low	None	None
Trichostomum tenuirostre var. *tenuirostre*	moss	Low	None	None
Triquetrella californica	three-ranked knob moss	Low	None	ST
Tritomaria quinquedentata	liverwort	Low	None	None
Umbilicaria rigida	rigid naval lichen	Low	None	ST

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Usnea lambii	zebra beard (banded beard, lichen)	Low	None	None
Usnea nidulans	lichen	Moderate	None	None
Fungi				
Acanthophysium farlowii	fungus	Moderate	None	None
Albatrellus avellaneus	fungus	Moderate	None	None
Albatrellus caeruleoporus	fungus	Low	None	None
Albatrellus dispansus	fungus	Low	None	None
Albatrellus skamanius	fungus	Low	None	None
Amanita novinupta	fungus	Moderate	None	None
Balsamia nigrans	fungus	Low	None	None
Boletus regius	fungus	Low	None	None
Brauniellula albipes	fungus	Low	None	None
Bridgeoporus nobilissimus	giant polypore fungus	High	None	None
Chamonixia caespitosa	fungus	High	None	None
Choiromyces alveolatus	fungus	Low	None	None
Chrysomphalina grossula	fungus	High	None	None
Clavariadelphus subfastigiatus	fungus	Low	None	None
Clavulina castaneopes var. *lignicola*	fungus	Low	None	None
Clitocybe subditopoda	fungus	Moderate	None	None
Conocybe subnuda	fungus	Low	None	None
Cortinarius barlowensis	fungus	Low	None	None
Cortinarius cyanites	fungus	Moderate	None	None
Cortinarius depauperatus	fungus	Moderate	None	None
Cortinarius pavelekii	fungus	Low	None	None
Cystangium idahoensis (=Martellia idahoensis)	fungus	High	None	None
Dendrocollybia racemosa	fungus	Low	None	None
Elaphomyces asperulus	fungus	Moderate	None	None
Elaphomyces decipiens	fungus	Low	None	None

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Elaphomyces reticulatus	fungus	Low	None	None
Elaphomyces subviscidus	fungus	Low	None	None
Endogone oregonensis	fungus	Moderate	None	None
Fevansia aurantiaca	fungus	Low	None	None
Gastroboletus imbellus	fungus	Low	None	None
Gastroboletus ruber	fungus	Moderate	None	None
Gastrolactarius camphoratus	fungus	High	None	None
Gastrolactarius crassus	fungus	Low	None	None
Genea compacta	fungus	Low	None	None
Glomus pubescens	fungus	Low	None	None
Gymnomyces nondistincta	fungus	Low	None	None
Hebeloma occidentale	fungus	Low	None	None
Hydnotrya inordinata	fungus	Low	None	None
Hydropus marginellus	fungus	Moderate	None	None
Hygrophorus albicarneus	fungus	Low	None	None
Hygrophorus albiflavus	fungus	Low	None	None
Leptonia caesiocincta	fungus	Low	None	None
Leptonia subeuchroa	fungus	Low	None	None
Leptonia violaceonigra	fungus	Low	None	None
Leucogaster odoratus	fungus	Low	None	None
Lyophyllum acutipes	fungus	Low	None	None
Lyophyllum furfurellum	fungus	Low	None	None
Lyophyllum lubricum	fungus	Low	None	None
Lyophyllum pallidum	fungus	Low	None	None
Lyophyllum solidipes	fungus	Low	None	None
Macowanites chlorinosmus	fungus	Low	None	None
Martellia medlockii	fungus	Low	None	None
Melanogaster natsii	fungus	Moderate	None	None
Mycena gaultheri	fungus	Low	None	None
Mycena quinaultensis	fungus	Low	None	None

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Mycena tenax	fungus	High	None	None
Mythicomyces corneipes	fungus	Low	None	None
Octaviania macrospora	fungus	Low	None	None
Omphalina isabellina	fungus	Low	None	None
Otidea smithii	fungus	High	None	None
Phaeocollybia californica	fungus	High	None	None
Phaeocollybia dissiliens	fungus	High	None	None
Phaeocollybia gregaria	fungus	High	None	None
Phaeocollybia lilacifolia	fungus	High	None	None
Phaeocollybia oregonensis	fungus	High	None	None
Phaeocollybia pseudofestiva	fungus	High	None	None
Phaeocollybia radicata	fungus	Moderate	None	None
Phaeocollybia sipei	fungus	Moderate	None	None
Phaeocollybia spadicea	fungus	Moderate	None	None
Podostroma alutaceum	fungus	Moderate	None	None
Pseudaleuria quinaultiana	fungus	Moderate	None	SE
Pseudorhizina californica	fungus	Low	None	SC
Radiigera bushnellii	fungus	Low	None	None
Ramaria abietina	fungus	Moderate	None	SC
Ramaria amyloidea	fungus	Moderate	None	None
Ramaria conjunctipes var. *sparsiramosa*	fungus	Moderate	None	None
Ramaria gelatiniaurantia	fungus	Moderate	None	None
Ramaria gracilis	fungus	Low	None	None
Ramaria largentii	fungus	Low	None	None
Ramaria maculatipes	fungus	Moderate	None	None
Ramaria rainierensis	fungus	Low	None	None
Ramaria rubella forma blanda	fungus	Low	None	SE
Ramaria rubribrunnescens	fungus	High	None	SE
Ramaria suecica	fungus	Moderate	None	None

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Rhizopogon abietis	fungus	Low	None	None
Rhizopogon alexsmithii	fungus	Low	None	SC
Rhizopogon atroviolaceus	fungus	Low	None	None
Rhizopogon brunneiniger	fungus	Low	None	SE
Rhizopogon clavitisporus	fungus	Low	None	None
Rhizopogon ellipsosporus	fungus	Low	None	SC
Rhizopogon exiguus	fungus	High	None	SE
Rhizopogon inquinatus	fungus	Low	None	None
Rhizopogon masoniae	fungus	Low	None	None
Rhizopogon rogersii	fungus	Low	None	None
Rhizopogon semireticulatus	fungus	Low	None	None
Rhizopogon subcinnamomeus	fungus	Low	None	SE
Rhizopogon subradicatus	fungus	Low	None	SC
Rickenella swartzii	fungus	High	None	None
Sarcodon fuscoindicus	fungus	High	None	None
Squamanita paradoxa	fungus	Low	None	None
Stagnicola perplexa	fungus	Low	None	SC
Stephensia bynumii	fungus	Low	None	None
Stropharia albivelata	fungus	Moderate	None	None
Tricholomopsis fulvescens	fungus	Low	None	None
Tuber asa	fungus	High	None	SC
Tuber pacificum	fungus	Moderate	None	ST
Urnula craterium	fungus	Low	None	SC
Vibrissea truncorum	fungus	Moderate	None	None
Vascular Plants				
Abronia umbellata ssp. *breviflora*	pink sand-verbena	Moderate	None	SE
Agrostis howellii	Howell's bentgrass	Low	None	SC

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Anemone oregana var. *felix*	bog anemone	Low	None	None
Artemisia pycnocephala	coastal sagewort	Low	None	None
Atriplex gmelinii	Gmelin's saltbush	Low	None	None
Brodiaea terrestris	dwarf brodiaea	Low	None	None
Calamagrostis breweri	Brewer's reedgrass	Low	None	None
Cardamine pattersonii	Saddle Mountain bittercress	Moderate	None	SC
Carex brevicaulis	short stemmed sedge	Low	None	None
Carex comosa	bristly sedge (bottlebrush sedge)	Low	None	None
Carex livida	pale sedge	Low	None	None
Carex macrocephala	bighead sedge	Moderate	None	None
Carex macrochaeta	large-awn sedge	Low	None	None
Carex pluriflora	many-flowered sedge	Low	None	None
Castilleja chambersii	Chamber's paintbrush	Low	None	None
Castilleja levisecta	golden paintbrush	Low	FT	SE
Chloropyron maritimum ssp. *palustre*	Pt. Reyes bird's-beak	Moderate	None	SE
Cicendia quadrangularis	timwort	Low	None	None
Coptis trifolia	three-leaf goldthread	Low	None	None
Corydalis aquae-gelidae	cold-water corydalis	Moderate	None	SC
Cyperus acuminatus	short-pointed cyperus	Low	None	None
Delphinium leucophaeum	white rock larkspur	Low	None	SE
Delphinium nuttallii	Nutall's larkspur	Low	None	None
Delphinium oreganum	Willamette Valley larkspur	Low	None	SC
Delphinium pavonaceum	peacock larkspur	Low	None	SE
Diplacus tricolor (Mimulus tricolor)	three-colored monkeyflower	Low	None	None
Dodecatheon austrofrigidum	frigid shootingstar	Moderate	None	None
Douglasia laevigata	smooth-leaved douglasia	Low	None	None
Elatine brachysperma	short seeded waterwort	Low	None	None

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Erigeron decumbens var. *decumbens*	Willamette Valley daisy	Low	FE	SE
Erigeron howellii	Howell's daisy	Low	None	SC
Erigeron peregrinus var. *peregrinus*	wandering daisy	Low	None	None
Eriophorum chamissonis	russet cotton-grass	Low	None	None
Erythronium elegans	Coast Range fawn-lily	High	None	ST
Eucephalus gormanii	Gorman's aster	Moderate	None	None
Filipendula occidentalis	queen-of-the-forest	Low	None	SC
Fritillaria camschatcensis	black lily	Moderate	None	None
Geum triflorum var. *campanulatum*	western red avens	Low	None	None
Gilia millefoliata	seaside gilia	Low	None	None
Horkelia congesta ssp. *congesta*	shaggy horkelia	Low	None	SC
Howellia aquatilis	water howellia	Low	FT	None
Huperzia miyoshiana	Pacific fir-moss	Low	None	None
Hydrocotyle verticillata	whorled marsh-pennywort	Moderate	None	None
Impatiens ecornuta	spurless jewelweed (Spurless touch-me-not)	Low	None	None
Iris tenax var. *gormanii*	Gorman's iris	Moderate	None	None
Juncus kelloggii	Kellogg's rush	Low	None	None
Lathyrus holochlorus	thin-leaved peavine	Moderate	None	None
Lewisia columbiana var. *columbiana*	Columbia lewisia	Low	None	None
Lewisia columbiana var. *rupicola*	rosy lewisia	Low	None	None
Lilium occidentale	western lily	Low	FE	SE
Limonium californicum	western marsh-rosemary	Low	None	None
Lipocarpha micrantha	small-flowered lipocarpha	Low	None	None
Lomatium bradshawii	Bradshaw's desert parsley	Low	FE	SE
Lupinus oreganus	Kincaid's lupine	Low	FT	ST

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Lycopodiella inundata	bog club-moss	Moderate	None	None
Lycopodium complanatum	ground cedar	Low	None	None
Micranthes hitchcockiana	Saddle Mt. saxifrage	Low	None	SC
Microseris bigelovii	coast microseris	Low	None	None
Myrica gale	sweet bayberry	Low	None	None
Ophioglossum pusillum	Adder's-tongue	Moderate	None	None
Packera flettii	Flett's groundsel	Low	None	None
Phacelia argentea	silvery phacelia	Low	None	ST
Plantago macrocarpa	North Pacific plantain (Alaska plantain)	Low	None	None
Poa laxiflora	loose-flowered bluegrass	High	None	None
Poa unilateralis ssp. *pachypholis*	ocean bluff bluegrass	Low	None	None
Polystichum californicum	California sword-fern	Low	None	None
Pyrrocoma racemosa var. *racemosa*	racemose pyrrocoma	Low	None	None
Rhynchospora alba	white beakrush	Moderate	None	None
Romanzoffia thompsonii	Thompson's mistmaiden	Low	None	None
Rotala ramosior	lowland toothcup	Low	None	None
Scheuchzeria palustris ssp. *americana*	Scheuchzeria	Low	None	None
Schoenoplectus subterminalis	water clubrush	Moderate	None	None
Scirpus pendulus	drooping bulrush	Low	None	None
Sericocarpus rigidus	white-topped aster	Low	None	ST
Sidalcea hendersonii	Henderson's sidalcea (checkermallow)	Low	None	None
Sidalcea hirtipes	bristly-stemmed sidalcea	Moderate	None	SC
Sidalcea nelsoniana	Nelson's checker-mallow	Moderate	FT	ST
Silene douglasii var. *oraria*	Cascade Head catchfly	Low	None	ST
Sisyrinchium sarmentosum	pale blue-eyed grass	Low	None	SC
Stellaria humifusa	creeping chickweed	Low	None	None

Scientific Name	Common Name	Potential to Occur on SNF and Salem District BLM Lands	Federal ESA Status	ODA/ODFW Status
Streptopus streptopoides	Kruhsea	Low	None	None
Sullivantia oregana	Oregon sullivantia	Low	None	SC
Taraxia ovata	golden eggs (Suncup)	Low	None	None
Utricularia gibba	humped bladderwort	Moderate	None	None
Utricularia minor	lesser bladderwort	Low	None	None
Utricularia ochroleuca	northern bladderwort	Low	None	None
Wolffia borealis	dotted water-meal	Low	None	None
Wolffia columbiana	Columbia water-meal	Low	None	None

ATTACHMENT 5 - TARGET SURVEY SPECIAL-STATUS SPECIES LIST

USFS and BLM Sensitive plant species list returned from ISSSSP query, and their potential to occur at the West Point Spur Project area. Potential to occur within Project area designations are as follow: Low = not on ORBIC, and has only one suspected with no documented occurrences on SNF or BLM lands; Moderate = Occurs on ORBIC or has at least one documented occurrence; High= occurs on ORBIC and has one documented and one suspected, or two documented occurrences on SNF and BLM lands. Oregon Department of Agriculture/Oregon Department of Fish and Wildlife state designations are as follow: SC = state candidate; ST = state threatened; SE = state endangered.

Scientific Name	Common Name	Potential to Occur in the Project Area	Federal ESA Status	ODA/ODFW Status
Fungi				
Bridgeoporus nobilissimus	noble polypore	High	None	None
Chamonixia caespitosa	Fungus	High	None	None
Chrysomphalina grossula	Fungus	High	None	None
Cortinarius barlowensis	Fungus	Moderate	None	None
Cystangium idahoensis (=Martellia idahoensis)	Fungus	High	None	None
Elaphomyces subviscidus	Fungus	Low	None	None
Gastrolactarius camphoratus	Fungus	High	None	None
Melanogaster natsii	Fungus	Low	None	None
Mycena tenax	Fungus	High	None	None
Otidea smithii	Fungus	High	None	None
Phaeocollybia californica	Fungus	High	None	None
Phaeocollybia dissiliens	Fungus	High	None	None
Phaeocollybia lilacifolia	Fungus	High	None	None
Phaeocollybia gregaria	Fungus	High	None	None
Phaeocollybia oregonensis	Fungus	High	None	None
Phaeocollybia pseudofestiva	Fungus	High	None	None
Phaeocollybia sipei	Fungus	Low	None	None
Phaeocollybia spadicea	Fungus	Low	None	None
Podostroma alutaceum	Fungus	Low	None	None
Pseudorhizina californica	Fungus	Low	None	None
Ramaria rubribrunnescens	Fungus	High	None	SE

Scientific Name	Common Name	Potential to Occur in the Project Area	Federal ESA Status	ODA/ODFW Status
Rhizopogon exiguus	Fungus	High	None	SE
Rickenella swartzii	Fungus	High	None	None
Sarcodon fuscoindicus	Fungus	High	None	None
Tuber asa	Fungus	High	None	SC
Bryophytes				
Andreaea schofieldiana	Moss	Low	None	None
Bryum calobryoides	Bryum moss	Low	None	None
Encalypta brevicollis	extinguisher moss	Low	None	None
Entosthodon fascicularis	Moss	Low	None	None
Grimmia anomala	Moss	Low	None	None
Haplomitrium hookerii	Liverwort	Moderate	None	None
Schistostega pennata	schistostega moss	Low	None	None
Tetraphis geniculata	tetraphis moss	Low	None	None
Lichen				
Bryoria subcana	Lichen	Moderate	None	None
Hypogymnia duplicate	Lichen	Low	None	None
Lobaria linita	lung lichen	Low	None	None
Lobaria linita var. *tenuoir*	Lichen	Low	None	None
Pseudocephellaria malotta	Lichen	High	None	None
Pseudocyphellaria rainierensis	Lichen	Low	None	None
Tholurna dissimilis	urn lichen	Low	None	None
Vascular Plants				
Castelleja levisecta	golden paintbrush	Low	Threatened	SE
Cypropedium montanum	mountain lady's slipper	Moderate	None	None
Enemion stipitatum	Siskiyou false rue	Moderate	None	None
Erigeron decumbens	Willamette daisy	Low	Endangered	SE
Erythronium elegans	Coast Range fawn-lily	High	None	ST
Lomatium bradshawii	Bradshaw's desert-parsley	Low	Endangered	SE
Lupinus oreganus	Kincaid's lupine	Low	Threatened	ST

Scientific Name	Common Name	Potential to Occur in the Project Area	Federal ESA Status	ODA/ODFW Status
Navarretia williamettensis	Willamette navarrretia	Moderate	None	None
Poa laxiflora	loose-flowered bluegrass	High	None	None
Sclerolinen digynum	Northwestern yellow flax	Moderate	None	none
Sidalcea nesoniana	Nelson's checker-mallow	Low	Threatened	ST
Sisyrinchium hitchcockii	Hitchcock's blue eyed grass	Moderate	None	None
Viola praemorsa ssp. praemorsa	Canary violet	Moderate	None	None

ATTACHMENT 6 - TARGET NOXIOUS WEED SPECIES

Scientific Name	Common Name	Designation*
Abutilon theophrasti	velvetleaf	B
Acaena novae-zelandiae	biddy-biddy	B
Aegilops triuncialis	barbed goatgrass	A, T
Alliaria petiolata	garlic mustard	B, T
Amorpha fruticosa	indigo bush	B
Brachypodium sylvaticum	false brome	B
Carduus pycnocephalus	Italian thistle	B
Carthamus lanatus	woolly distaff thistle	A, T
Centaurea calcitrapa	purple starthistle	A, T
Centaurea iberica	Iberian starthistle	A, T
Centaurea pratensis	meadow knapweed	B
Centaurea solstitialis	yellow starthistle	B
Centaurea stoebe (C. maculosa)	spotted knapweed	B, T
Cirsium arvense	Canada thistle	B
Cirsium vulgare	bull thistle	B
Clematis vitalba	old man's beard	B
Conium maculatum	poison hemlock	B
Convolvulus arvensis	field bindweed	B, T
Cortaderia jubata	Jubata grass	B
Cuscuta spp.	dodder	B
Cyperus rotundus	purple nutsedge	A
Cytisus scoparius	Scotch broom	B
Cytisus striatus	Portuguese broom	B, T
Daphne laureola	spurge laurel	B
Dipsacus laciniatus	cutleaf teasel	B
Echium plantagineum	Paterson's curse	A, T
Erica lusitanica	Spanish heath	B
Euphorbia esula	leafy spurge	B, T
Euphorbia oblongata	oblong spurge	A, T
Fallopia japonica (Polygonum)	Japanese knotweed	B
Fallopia sachalinensis (Polygonum)	giant knotweed	B
Galega officinalis	goatsrue	A, T
Genista monspessulana	french broom	B
Hedera helix	English ivy	B
Heracleum mantegazzianum	giant hogweed	A, T
Hypericum perforatum	St. Johnswort	B
Impatiens glandulifera	policeman's helmet	B

Isatis tinctoria	Dyer's woad	B
Lamiastrum galeobdolon	yellow archangel	B
Lathyrus latifolius	perennial peavine	B
Linaria dalmatica	dalmatian toadflax	B, T
Lythrum salicaria	purple loosestrife	B
Onopordum acanthium	Scotch thistle	B
Phragmities australis ssp. *australis*	common reed	B
Pilosella aurantiacum (Hieracium)	orange hawkweed	A, T
Pilosella caespitosum (Hieracium)	meadow hawkweed	B, T
Pilosella pilosella (Hieracium)	mouse-ear hawkweed	A, T
Pilosella piloselloides (Hieracium)	king-devil hawkweed	A
Polygonum polystachyum	Himalayan knotweed	B
Potentilla recta	sulfur cinquefoil	B
Pueraria lobata	kudzu	A, T
Ranunculus ficaria	lesser celandine	B
Rubus armeniacus (R. procerus, R. discolor)	Armenian (Himalayan) blackberry	B
Senecio jacobaea (Jacobaea vulgaris)	tansy ragwort	B, T
Taeniatherum caput-medusae	Medusahead rye	B
Trapa natans	European water chestnut	A
Tribulus terrestris	puncturevine	B
Tussilago farfara	coltsfoot	A
Ulex europaeus	gorse	B, T

*Designation definitions: A= designates populations small enough for eradication or containment; B= designates management of species with limited distribution in some counties; T= designates priority targets for control for Oregon State.

ATTACHMENT 7 - 2018 VASCULAR PLANTS OBSERVED

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Shrub	Aceraceae	*Acer circinatum*	vine maple	ACCI		X	X		native	USFS/City	Meadow
Tree	Aceraceae	*Acer macrophyllum*	bigleaf maple	ACMA3		X			native	USFS	Meadow
Forb	Apiaceae	*Osmorhiza purpurea*	purple sweetroot	OSPU	X	X		X	native	USFS/City	Both
Forb	Aristolochiaceae	*Asarum caudatum*	British Colombia wildginger	ASCA2		X			native	USFS	Meadow
Forb	Asteraceae	*Achillea millefolium*	common yarrow	ACMI2	X	X	X	X	native	USFS/City	Meadow
Forb	Asteraceae	*Adenocaulon bicolor*	American trailplant	ADBI	X		X		native	City	Forest
Forb	Asteraceae	*Agoseris grandiflora*	bigflower agoseris	AGGR	X	X	X	X	native	USFS/City	Meadow
Forb	Asteraceae	*Anaphalis margaritacea*	western pearly everlasting	ANMA	X	X	X	X	native	USFS/City	Meadow
Forb	Asteraceae	*Cirsium edule*	edible thistle	CIED	X				native	City	Meadow
Forb	Asteraceae	*Leucanthemum vulgare*	oxeye daisy	LEVU	X	X	X	X	not native	USFS/City	Meadow
Forb	Asteraceae	*Matricaria discoidea*	disc mayweed	MADI6			X		not native	City	Meadow
Forb	Asteraceae	*Mycelis muralis*	wall-lettuce	MYMU		X	X		not native	USFS/City	Meadow
Forb	Asteraceae	*Senecio jacobaea*	stinking willie	SEJA		X	X		not native	USFS/City	Meadow
Forb	Asteraceae	*Senecio triangularis*	arrowleaf ragwort	SETR	X	X		X	native	USFS/City	Forest
Forb	Berberidaceae	*Achlys triphylla*	sweet after death	ACTR	X	X		X	native	USFS/City	Forest
Shrub	Berberidaceae	*Mahonia aquifolium*	hollyleaved barberry	MAAQ2		X			native	USFS	Meadow
Shrub	Berberidaceae	*Mahonia nervosa*	Cascade barberry	MANE2	X		X	X	native	City	Forest
Forb	Berberidaceae	*Vancouveria hexandra*	white insideout flower	VAHE	X		X	X	native	City	Forest
Tree	Betulaceae	*Alnus rubra*	red Alder	ALRU2		X			native	USFS	Meadow
Shrub	Betulaceae	*Corylus cornuta*	beaked hazelnut	COCO6		X			native	USFS	Meadow
Shrub	Celastraceae	*Paxistima myrsinites*	Oregon boxwood	PAMY	X				native	City	Meadow
Forb	Clusiaceae	*Hypericum perforatum*	common St. Johnswort	HYPE	X	X	X	X	not native	USFS/City	Meadow
Gram	Cyperaceae	*Carex californica*	California sedge	CACA9	X	X	X	X	native	USFS/City	Meadow
Gram	Cyperaceae	*Carex hoodii*	Hood's sedge	CAHO5	X			X	native	City	Forest
Gram	Cyperaceae	*Carex mertensii*	Marten's sedge	CAME6				X	native	City	Forest

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Forb	Cucurbitaceae	*Marah oreganus*	coastal manroot	MAOR3		X			native	USFS	Meadow
Forb	Dennstaedtiaceae	*Pteridium aquilinum*	western brackenfern	PTAQ	X	X	X	X	native	USFS/City	Forest
Forb	Dryopteridaceae	*Polystichum munitum*	western swordfern	POMU	X	X	X	X	native	USFS/City	Forest
Shrub	Ericaceae	*Vaccinium parvifolium*	red huckleberry	VAPA	X	X		X	native	USFS/City	Forest
Forb	Fabaceae	*Lotus parviflorus*	smallflower bird's-foot trefoil	LOPA81			X		native	City	Forest
Forb	Fabaceae	*Lupinus polyphyllus*	bigleaf lupine	LUPO2		X			native	USFS	Meadow
Forb	Fabaceae	*Lupinus rivularis*	riverbank lupine	LURI	X	X	X	X	native	USFS/City	Meadow
Forb	Fabaceae	*Trifolium repens*	white clover	TRRE3	X	X	X		not native	USFS/City	Meadow
Forb	Fabaceae	*Vicia sativa*	garden vetch	VISA	X		X	X	not native	City	both
Shrub	Fagaceae	*Chrysolepis chrysophylla*	giant chinquapin	CHCH7	X				native	City	Forest
Forb	Fumariaceae	*Dicentra formosa*	Pacific bleeding heart	DIFO	X	X		X	native	USFS/City	both
Shrub	Grossulariaceae	*Ribes lacustre*	prickly currant	RILA	X				native	City	Forest
Shrub	Grossulariaceae	*Ribes sanguineum*	redflower current	RISA		X			native	City	Forest
Forb	Hydrophyllaceae	*Phacelia heterophylla*	varileaf phacelia	PHHE2		X			native	USFS	Meadow
Forb	Iridaceae	*Iris tenax*	toughleaf iris	IRTE	X	X	X	X	native	USFS/City	Meadow
Gram	Juncaceae	*Luzula comosa ssp comosa*	Pacific woodrush	LUCO6	X	X		X	native	USFS/City	Forest
Gram	Juncaceae	*Luzula parviflor*	smallflowered woodrush	LUPA4	X			X	native	City	Forest
Forb	Liliaceae	*Calochortus tolmiei*	Tolmi star-tulip	CATO	X		X	X	native	City	Meadow
Forb	Liliaceae	*Clintonia uniflora*	bride's bonnet	CLUN2	X			X	native	City	Forest
Forb	Liliaceae	*Lilium columbianum*	Columbia lily	LICO	X		X	X	native	City	Meadow
Forb	Liliaceae	*Maianthemum racemosum*	feathery false lilly of the valley	MARA7		X			native	USFS	Meadow
Forb	Liliaceae	*Maianthemum stellatum*	starry false lily of the valley	MAST4	X	X	X	X	native	USFS/City	Forest
Forb	Liliaceae	*Prosartes smithii*	largeflower fairybells	PRSM	X			X	native	City	Forest
Forb	Liliaceae	*Streptopus amplexifolius*	claspleaf twistedstalk	STAM2	X				native	City	Forest
Forb	Liliaceae	*Trillium ovatum*	Pacific trillium	TROV2	X	X		X	native	USFS/City	Forest
Forb	Liliaceae	*Veratrum californicum*	California false hellebore	VECA2				X	native	City	Forest

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Forb	Onagraceae	*Chamerion angustifolium*	fireweed	CHANA2	X	X	X	X	native	USFS/City	Forest
Forb	Orchidaceae	*Listera caurina*	northwestern twayblade	LICA10		X		X	native	USFS/City	Meadow
Forb	Oxalidaceae	*Oxalis trilliifolia*	threeleaf woodsorrel	OXTR	X			X	native	City	Forest
Tree	Pinaceae	*Abies amabilis*	Pacific silver fir	ABAM	X			X	native	City	Forest
Tree	Pinaceae	*Abies grandis*	grand fir	ABGR	X	X	X	X	native	USFS/City	Forest
Tree	Pinaceae	*Abies procera*	noble fir	ABPR	X	X	X	X	native	USFS/City	Forest
Tree	Pinaceae	*Pseudotsuga menziesii*	Douglas-fir	PSME	X	X	X	X	native	USFS/City	Forest
Tree	Pinaceae	*Tsuga heterophylla*	western hemlock	TSHE	X	X		X	native	USFS/City	Forest
Forb	Plantaginaceae	*Plantago lanceolata*	narrowleaf plantain	PLAA	X	X	X	X	not native	USFS/City	Meadow
Forb	Plantaginaceae	*Plantago major*	common plantain	PLMA2			X		not native	City	Meadow
Gram	Poaceae	*Agrostis exarata*	spike bentgrass	AGEX	X	X	X		native	USFS/City	Forest
Gram	Poaceae	*Aira caryophyllea*	siver hairgrass	AICA		X	X		not native	USFS/City	Meadow
Gram	Poaceae	*Bromus sitchensis*	Alaska brome	BRSI	X	X	X		native	USFS/City	Forest
Gram	Poaceae	*Bromus* spp.	bromus species	BROMU	X			X	unknown	City	Meadow
Gram	Poaceae	*Cynosurus echinatus*	bristly dogstail grass	CYEC			X		not native	City	Meadow
Gram	Poaceae	*Dactylis glomerata*	ochardgrass	DAGL	X			X	native	City	Meadow
Gram	Poaceae	*Danthonia californicu*	California oatgrass	DACA3			X		native	City	Meadow
Gram	Poaceae	*Elymus glaucus*	blue wildrye	ELGL				X	native	City	Meadow
Gram	Poaceae	*Festuca idahoensis*	Idaho fescue	FEID	X	X	X	X	native	USFS/City	Meadow
Gram	Poaceae	*Festuca rubra ssp commutata*	red fesue	FERU2	X		X		both	City	Forest
Gram	Poaceae	*Lolium perenne ssp perrene*	perrenial ryegrass	LOPEP			X		Both	City	Forest
Gram	Poaceae	*Poa pratensis*	Kentucky bluegrass	POPR	X	X	X		both	USFS/City	Meadow
Gram	Poaceae	*Poa secunda*	Sandberg bluegrass	POSE			X	X	native	City	Forest
Forb	Polemoniaceae	*Microsteris gracilis*	slender phlox	MIGR	X	X	X	X	native	USFS/City	Meadow
Forb	Polygonaceae	*Rumex acetosella*	common sheep sorrel	RUAC3	X	X	X	X	not native	USFS/City	Meadow
Forb	Portulacaceae	*Claytonia sibirica*	Siberian springbeauty	CLSI2	X	X	X	X	native	USFS/City	Forest
Forb	Primulaceae	*Trientalis latifolia*	broadleaf starflower	TRLA6	X			X	native	City	Forest

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Forb	Ranunculaceae	*Anemone deltoidea*	Columbian windflower	ANDE3	X				native	City	Forest
Forb	Ranunculaceae	*Aquilegia formosa*	western columbine	AQFO		X			native	USFS	Meadow
Forb	Ranunculaceae	*Coptis lancionata*	Oregon goldenthread	COLA3		X		X	native	USFS/City	Forest
Forb	Ranunculaceae	*Delphinium nuttallii*	upland larkspur	DENU3	X		X		native	City	Meadow
Forb	Rosaceae	*Amelanchier alnifolia*	Saskatoon serviceberry	AMAL2				X	native	City	Meadow
Forb	Rosaceae	*Fragaria virginiana*	Virginia strawberry	FRVIP2	X	X	X	X	native	USFS/City	Meadow
Shrub	Rosaceae	*Holodiscus discolor*	oceanspray	HODI	X	X	X	X	native	USFS/City	Forest
tree	Rosaceae	*Malus* spp.	commercial apple species	MALUS		X			not native	USFS	Forest
Shrub	Rosaceae	*Prunus emarginata*	bitter cherry	PREM			X		native	City	Meadow
Shrub	Rosaceae	*Rosa gymnocarpa*	dwarf rose	ROGY	X	X	X	X	native	USFS/City	Forest
Forb	Rosaceae	*Rubus parviflorus*	thimbleberry	RUPA		X	X	X	native	USFS/City	Forest
Shrub	Rosaceae	*Rubus ursinus*	California blackberry	RUUR	X	X	X	X	native	USFS/City	Forest
Forb	Rubiaceae	*Galium trifidum*	threepetal bedstraw	GATR2			X	X	native	City	Forest
Forb	Rubiaceae	*Galium triflorum*	fragrent bedstraw	GATR3	X	X	X	X	native	USFS/City	Forest
Fob	Saxifragaceae	*Heuchera chlorantha*	tall alumroot	HECH		X			native	USFS	Meadow
Forb	Scrophulariaceae	*Castilleja hispida*	harsh Indian paintbrush	CAHI9		X			native	USFS	Meadow
Forb	Scrophulariaceae	*Collinsia parviflora*	blue eyed Mary	COPA3		X			native	USFS	Meadow
Forb	Scrophulariaceae	*Digitalis purpurea*	purple foxglove	DIPU	X	X	X	X	not native	USFS/City	both
Forb	Scrophulariaceae	*Penstemon cardwellii*	Cardwell's beardtongue	PECA16	X	X	X	X	native	USFS/City	Forest
Forb	Scrophulariaceae	*Scrophularia oregana*	Oregon figwort	SCOR		X	X	X	native	USFS/City	both
Forb	Violaceae	*Viola adunca*	Violet family	VIAD	X		X	X	native	City	Forest
Forb	Violaceae	*Viola glabella*	pioneer violet	VIGL	X	X	X	X	native	USFS/City	Forest

ATTACHMENT 8 - FIELD DATA FORMS

Habitat Type Forest **Date** 06/26

Observers Sean Perks, Kathleen Sale

Locations (Describe) CPI site, edge of site to the north + east. New BPA site - Northern 2/3 of site

Ecological Condition

Plant Composition and structure:

CPI: late seral plant composition
NEW BPA: " "
City Road: " "
FS Road Alternated forest + meadow

Introduced Species Cover:

CPI site: Ø
New BPA: Ø
FS + City road: Ø

Disturbance:

CPI + New BPA: Low disturbance except for a few cut + downed uncut
City Road: " " " " " " " "
FS Road: Low disturbance except for the use of the roadbed

Circle 1: High Moderate Low

"High" ecological condition will be used for areas having late seral plant composition and structure, minimal disturbance, and <5% estimated cover introduced (non-native) species.
"Moderate" ecological condition will be used for areas having incomplete or skewed plant community structure and composition, most likely due to disturbance factors. Introduced species may be well represented, with up to approximately 25% cover.
"Low" ecological condition will be used for communities with substantially altered plant composition and structure. These will be areas dominated by weed and/or "increaser" species with greater than 25% cover, and/or have relatively sparse vegetation with high bare ground cover and ample evidence of past disturbance.

Dominant Species

Trees
Abies procera
Pseudotsuga menziesii
Abies grandis
Tsuga heterophylla (New BPA)

Shrub
Holodiscus discolor
Sambucus racemosa

Forb
Maianthemum stellatatum
Oxalis trillifolia

Grass
Kes

Habitat Type Meadow **Date** 06/26

Observers Sean Perks, Kathleen Sale

Locations (Describe) CPI site: most of site where there were ø buildings or forest, large % of site.
New BPA site - mostly southern 1/3 of site.

Ecological Condition

Plant Composition and structure:

CPI - Mid to late seral structure with forbs + graminoids,
New BPA - " "
FS + City Road Alternating forested + meadow

Introduced Species Cover:

CPI site - 8% of a single species HYPE.
New BPA - 6% of a single species HYPE.
Roads - 10% HYPE + SEJA

Disturbance:

CPI + New BPA - little sign of recent disturbance except for parking area in front of communication building which has very little vegetation
FS + City Roads Weeds in meadow, roadside, or in middle of road with continued disturbance on roadbed + close roadside

Circle 1: High Moderate Low

"High" ecological condition will be used for areas having late seral plant composition and structure, minimal disturbance, and <5% estimated cover introduced (non-native) species.
"Moderate" ecological condition will be used for areas having incomplete or skewed plant community structure and composition, most likely due to disturbance factors. Introduced species may be well represented, with up to approximately 25% cover.
"Low" ecological condition will be used for communities with substantially altered plant composition and structure. These will be areas dominated by weed and/or "increaser" species with greater than 25% cover, and/or have relatively sparse vegetation with high bare ground cover and ample evidence of past disturbance.

Dominant Species

Trees: ø

Shrub: ø

Forb:
Rumex acetosella
Lupinus rivularis
Fragaria virginiana (in some parts)
Pteridium aquilinum (New BPA)
Rubus ursinus

Grass:
Carex californica
Festuca idahoensis
Rye

Siuslaw National Forest **Invasive Plant Inventory Form**

Adapted from NRIS TERRA Forms (*designates required fields)

*Site ID 1: CityRoad_SEJA_001 *Weed Species Code: SEJA

Site ID 2:

Site ID 3:

Site ID 4:

Use multiple IDs when there is more than one weed species per site.

*Project: Noxious Weed EIS

*Date (MM/DD/YYYY): 06/29/2018 Site Sample Type: INPA

*Examiner (Last, First, MI): Perks, Sean M.; Sale, Kathleen A.

*Region 06, Forest 06, District (circle) N/A Barlow Clackamas River Hood River Zigzag

*State: OR *County (circle) Clackamas Jefferson Marion (Benton) Multnomah Wasco Hood River

*Watershed HUC (aquatic weeds only): *Ownership: City of Corvallis

Legal Description T 12S R 7W S 19 ¼ 5 Willamette Mer.

UTM easting: 454461 northing: 4928384 Zone 10 NAD 27 (NAD 83)

Aspect (degrees): 222° Average Slope (%): 10%

Horizontal Distance to H2O: feet meters Vertical Distance to H2O: Unk. feet meters

Seep Spring Intermittent stream Perennial stream Lake Pond ditch

*Circle Dominant Life Form AL Algae LC Lichen (FB Forb) GR Graminoid SS Subshrub ~~SH Woody Shrub~~ TR Tree NP Non-vascular

*Canopy Cover (%): 25%

3 Dominant Spp.	PLANTS Code	Scientific Name
	RUAC2	Rumex acetasella
	LURI	Lupinus rivularis
	CACA9	Carex Californica

Plant Association: grassland Seral Stage: mid

Circle one for phenology, lifeform and distribution of the weed.

Phenology: Forbs and Shrubs

(F1) Vegetative, rosette
F2 Flowering
F3 Fruiting
F4 Senescent or dormant

Life Form:

AL Algae
(FB) Forb
SS Sub-shrub
LI Woody liana
UN Unknown
NP Non-vascular
SH Woody Shrub
GR Graminoid
VI Herbaceous vine

*Infested Area Species 1 (acres): 0.025 *Infested Area Species 3 (acres):

*Infested Area Species 2 (acres): *Infested Area Species 4 (acres):

Weed Percent Cover: Species 1: 2 % Species 3: %

Species 2: % Species 4: %

Weed Distribution: CL Clumpy SE Scattered even

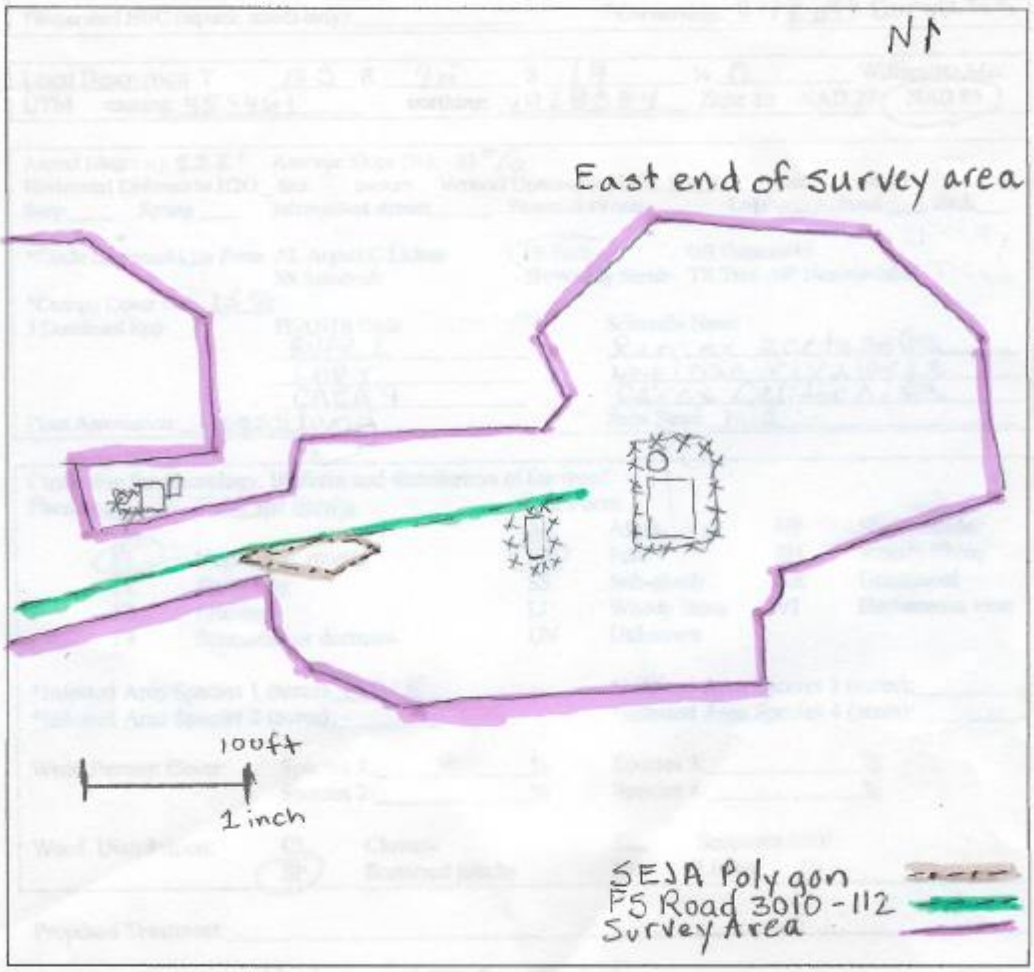
(SP) Scattered patchy LI Linear

Proposed Treatment: Hand treament

Comments/Directions: Only along road.

Additional Comments: Site ID: City Road – SEJA-001

Site Map



Siuslaw National Forest **Invasive Plant Inventory Form**
Adapted from NRIS TERRA Forms (*designates required fields)

*Site ID 1: CPI_HYPE_001 *Weed Species Code: HYPE
Site ID 2:
Site ID 3:
Site ID 4:
Use multiple IDs when there is more than one weed species per site.
*Project: Noxious Weed EIS
*Date (MM/DD/YYYY): 06/26/2018 Site Sample Type: INPA
*Examiner (Last, First, MI): Sale, Kathleen A ; Perks, Sean M. ; Moore, Lynda K.

*Region 06, Forest 06, District (circle) N/A
Barlow Clackamas River
Hood River Zigzag

*State: OR *County (circle)
Clackamas Jefferson Marion Benton
Multnomah Wasco Hood River

*Watershed HUC (aquatic weeds only): N/A *Ownership: USFS + City of Corvalis

T: 12S R: 7W S: 19 ¼ SE

Legal Description T 12S R 7W S 20 ¼ SW Willamette Mer.
UTM easting: 454453 northing: 4928346 Zone 10 NAD 27 (NAD 83)

Aspect (degrees): 220° Average Slope (%): 15%
Horizontal Distance to H2O: feet UNK meters Vertical Distance to H2O: UNK feet meters
Seep ____ Spring ____ Intermittent stream ____ Perennial stream ____ Lake ____ Pond ____ ditch ____

*Circle Dominant Life Form AL Algae LC Lichen (FB) Forb GR Graminoid
SS Subshrub SH Woody Shrub TR Tree NP Non-vascular
*Canopy Cover (%): 90%

3 Dominant Spp.	PLANTS Code	Scientific Name
	RUAC	Rumex acetosella
	CACA9	Carex californica
		Lupinus rivularis

Plant Association: grassland Seral Stage: mid

Circle one for phenology, lifeform and distribution of the weed.

Phenology:	Forbs and Shrubs	Life Form:			
		AL	Algae	NP	Non-vascular
(F1)	Vegetative, rosette	(FB)	Forb	SH	Woody Shrub
F2	Flowering	SS	Sub-shrub	GR	Graminoid
F3	Fruiting	LI	Woody liana	VI	Herbaceous vine
F4	Senescent or dormant	UN	Unknown		

*Infested Area Species 1 (acres): 0.9 acre *Infested Area Species 3 (acres): ____
*Infested Area Species 2 (acres): ____ *Infested Area Species 4 (acres): ____

Weed Percent Cover: Species 1: 8 % Species 3: ____ %
Species 2: ____ % Species 4: ____ %

Weed Distribution: CL Clumpy SE Scattered even
(SP) Scattered patchy LI Linear

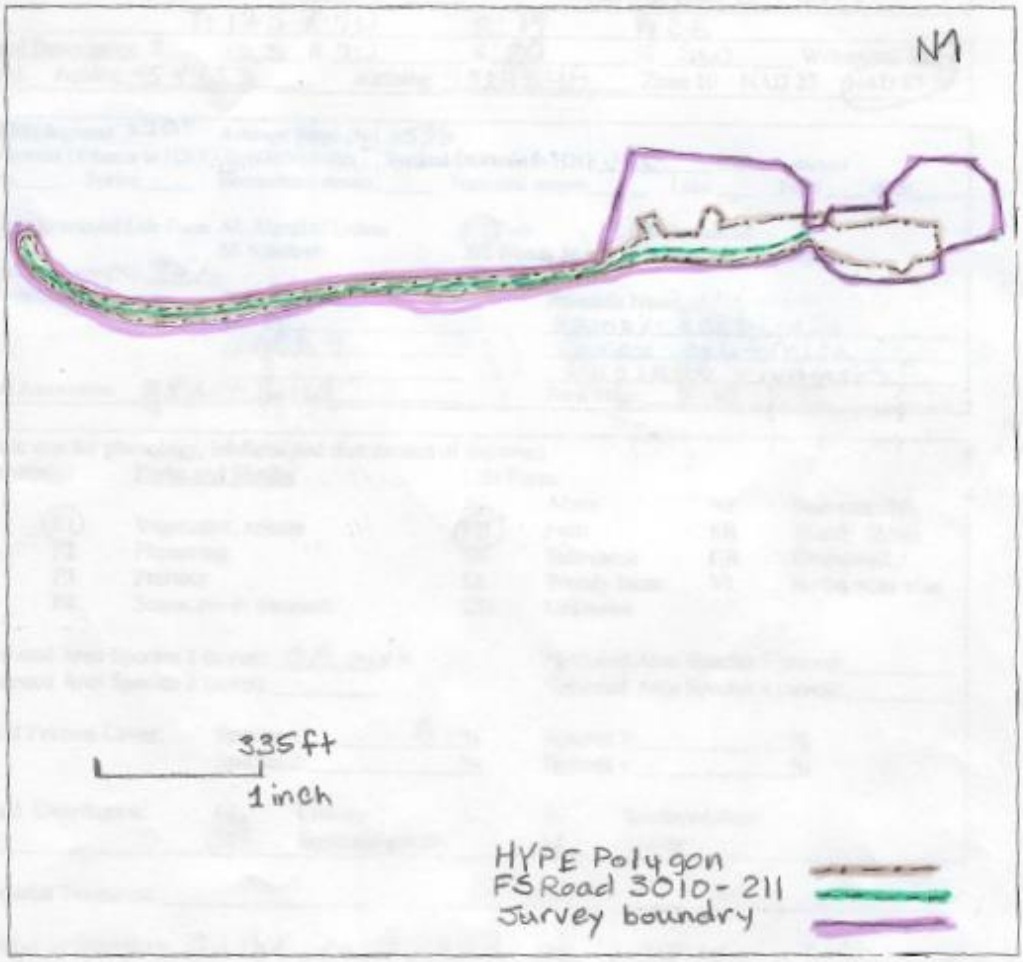
Proposed Treatment: Biocontrol /

Comments/Directions: On the east end of polygon the population continues down hill towards the south.

Site ID: CPI_HYPE_001

Additional Comments: Population is scattered individuals to scattered patches in dense vegetation in the middle of the road and roadside. No invasive species identified in forested areas.

Site Map



Siuslaw National Forest **Invasive Plant Inventory Form**

Adapted from NRIS TERRA Forms (*designates required fields)

*Site ID 1: FSRoad_SEJA_001 *Weed Species Code: SEJA

Site ID 2:

Site ID 3:

Site ID 4:

Use multiple IDs when there is more than one weed species per site.

*Project: Noxious Weed EIS

*Date (MM/DD/YYYY): 06/28/2018 Site Sample Type: INPA

*Examiner (Last, First, MI): Perks, Sean M.; Sale, Kathleen A

*Region 06, Forest 06, District (circle) N/A Barlow Clackamas River Hood River Zigzag

*State: OR *County (circle) Clackamas Jefferson Marion (Benton) Multnomah Wasco Hood River

*Watershed HUC (aquatic weeds only): N/A *Ownership: USFS

Legal Description T 12S R 7W S 20 ¼ SW Willamette Mer.

UTM easting: 453980 northing: 4928834 Zone 10 NAD 27 (NAD 83)

Aspect (degrees): _ Average Slope (%):

Horizontal Distance to H2O: _ feet / meters Vertical Distance to H2O: UKN feet meters

Seep ____ Spring ____ Intermittent stream ____ Perennial stream ____ Lake ____ Pond ____ ditch ____

*Circle Dominant Life Form AL AlgaeLC Lichen FB Forb ~~GR Graminoid~~

SS Subshrub SH Woody Shrub (TR Tree) NP Non-vascular

*Canopy Cover (%): 60%

3 Dominant Spp.	PLANTS Code	Scientific Name
	PSME	Pseudotsuga menziesii
	HODI	Holodiscus discolor
	ACCI	Acer circinatum

Plant Association: Forest Seral Stage: Late

Circle one for phenology, lifeform and distribution of the weed.

Phenology: Forbs and Shrubs

(F1)	Vegetative, rosette	Life Form: AL	Algae	NP	Non-vascular
F2	Flowering	(FB)	Forb	SH	Woody Shrub
F3	Fruiting	~~SS~~	Sub-shrub	GR	Graminoid
F4	Senescent or dormant	LI	Woody liana	VI	Herbaceous vine
		UN	Unknown		

*Infested Area Species 1 (acres): 0.41 *Infested Area Species 3 (acres):

*Infested Area Species 2 (acres): *Infested Area Species 4 (acres):

Weed Percent Cover: Species 1: 2 % Species 3: %

Species 2: % Species 4: %

Weed Distribution: CL Clumpy SE Scattered even

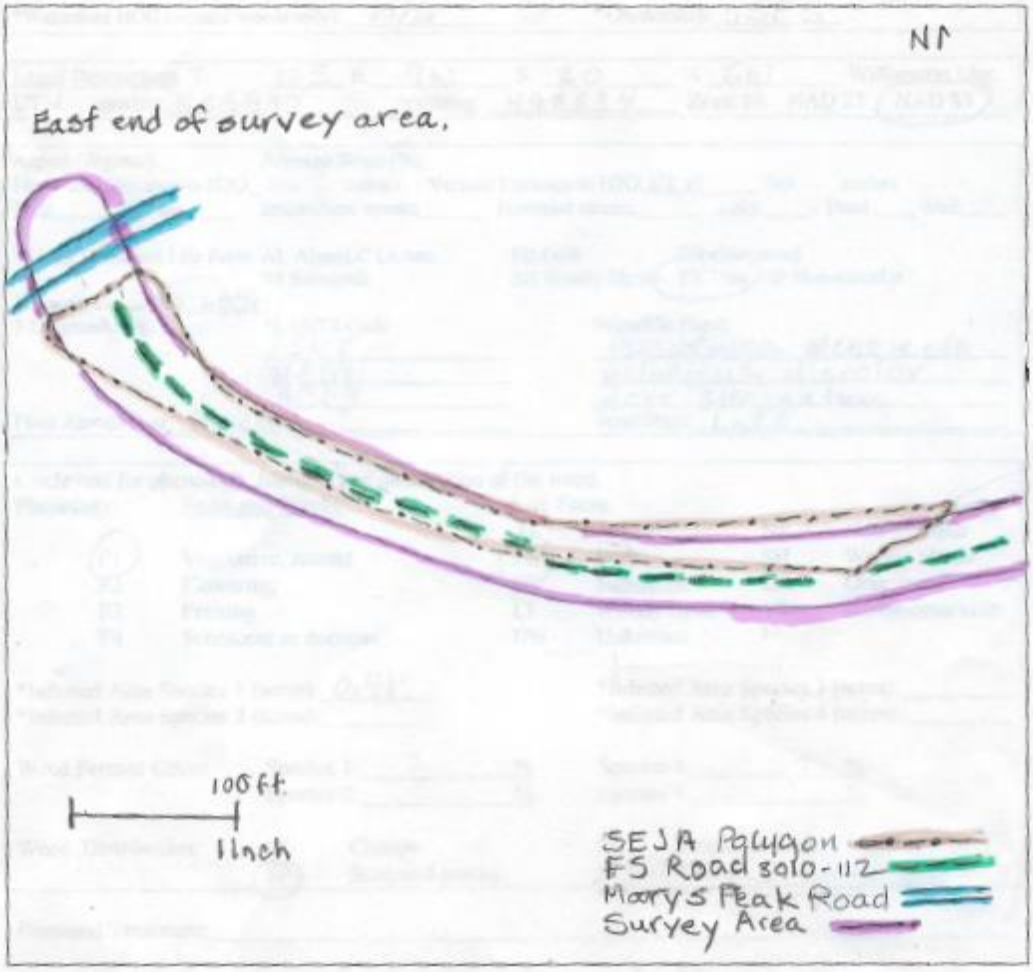
(SP) Scattered patchy LI Linear

Proposed Treatment: Hand treatment

Comments/Directions: Located on the edges of the road.

Additional Comments: Site ID: FSRoad_SEJA.

Site Map



ATTACHMENT 9 RESUMES

Lynda Moore

Natural Resource Specialist
USDA Forest Service
Pacific Northwest Region
Portland, Oregon

Education:

M. S. 2009 Environmental Sciences and Management, Portland State University, Portland, Oregon

B. S. 2006 Botany, Oregon State University, Corvallis, Oregon

Employment:

2014 to Present Natural Resource Specialist, USDA Forest Service Region 6 Restoration Services Team, Portland, Oregon
(8/25/2014 to present, GS-11, Competitive service with permanent tenure)

2014 to 2014 Botanist, USDA Forest Service TEAMS Enterprise Unit, Bend, Oregon
(5/5/2014 to 8/25/2014, GS-9, Permanent Seasonal Appointment)

2013 to 2014 Botanist, USDA Forest Service Region 6 Restoration Services Team, Bend, Oregon
(5/11/2013 to 4/25/2014, GS-11, Detail)

2013 to 2013 Botanist, USDA Forest Service Region 6 Restoration Services Team, Bend, Oregon
(7/22/2013 to 8/17/2013, GS-9, Temporary Inner Service Agreement)

2011 to 2013 Botanist, USDA Forest Service TEAMS Enterprise Unit, Portland, Oregon
(4/24/2011 to 7/22/2013, GS-9, Permanent Seasonal Appointment)

2010 to 2011 Biological Science Technician- Plants, USDA Forest Service TEAMS Enterprise Unit, Portland, Oregon
(6/18/2010 to 10/16/2010, GS-7, Temporary Seasonal Appointment)

2009 to 2010 Research Associate, Portland State University Center for Lakes and Reservoirs, Portland, Oregon

2006 to 2009 Graduate Student Research Assistant, Portland State University, Portland, Oregon

2006 to 2008 Research Associate, Earth Design Consultants, Inc., Corvallis, Oregon

2004 to 2006 Undergraduate Student Worker, Oregon State University, Oregon Flora Project, Corvallis, Oregon

2001 to 2004 Loader and Pick-Off, United Parcel Service, Portland, Oregon

2001 to 2002 Tile Setter, Mad Dog Construction, Portland, Oregon

1999 to 2001 Associate Vice President, Manager, Kasch's Garden Centers and Nurseries, Inc., Portland, Oregon

1994 to 1999 Sales Associate, Assistant Manager, Kasch's Garden Centers and Nurseries, Inc., Portland, Oregon

Invited Presentations: (* denotes presenting author)

2017 USDA Forest Service International Programs Forest Landscape Restoration Seminar, Bend, Oregon. “Design, implementation, and partnerships for non-forested restoration projects”, LK Moore.

2016 7th Annual Native Plants Conference, Vancouver, Washington. “Revegetation with an emphasis on pollinator conservation: resources for practitioners”, LK Moore* and ME Horning.

2016 7th Annual Native Plants Conference, Vancouver, Washington. “The art, science, and humiliation of restoration”, LE Riley* and LK Moore*

2015 Advanced biology class, Access to Success Program, University of Montana, Helena, Montana. “Botany, a senescing science”, LK Moore.

2010 Urban Pest Management Course, Oregon City, Oregon. “Aquatic weeds: Identification and treatment”, LK Moore

2009 The Society for Northwestern Vertebrate Biology and the Washington Chapter of the Wildlife Society joint annual meeting, Stevenson, Washington. “Current status of four invasive plant species”, LK Moore* and Vanessa Howard*.

Training and Certifications:

2017 S1 Mobile Android Field Collection Training, Portland, Oregon

2016 Western Grasses Identification Workshop, Portland, Oregon

2016 Eastern Grasses Identification Workshop, Bend, Oregon

2015 Contracting Officer Representative II, Bend, Oregon

2015 Wetland Construction, State College, Pennsylvania

2015 Wetland Delineation, Whitefish, Montana

2014 Contracting Officer Representative I, Bend, Oregon

2012 Trailer Towing Certification

Sean Perks
USDA Forest Service
Dorena Genetic Resource Center
Summary

- Skill in native species restoration, seed and vegetation collection, plant identification, and outplanting.
- Experience working in and leading a team to grow, weed, fertilize, prune, and maintain a large volume of plants in a controlled nursery environment.
- Effective leader with experience directing student work crews in a Southwestern white pine epigenetic common garden study, and leading vegetation collection and outplanting work crews.
- Safe and effective tree climber instructor skillful in climbing trees for purpose of collecting seed for genetic testing, reforestation, hurricane relief, and wildlife surveys.
- Aid in the completion of revegetation plans and vegetation survey reports to effectively complete restoration projects.

Education
Northern Arizona University, Flagstaff, Arizona *Graduated: December 2015*
MS - Climate Science and Solutions Professional Science Masters Program
This Professional Science Masters program integrates science into professional settings. This applied program was molded to my interests of understanding the link between plants, climate, and disease.

- Initiated a Southwestern white pine (SWWP) distribution model based on future projected climate
- Developed GIS maps documenting climate and elevation gradients to determine ideal seed collection sites
- Directed environmental science undergraduate students in applied biological fieldwork
- Collected, grew, and measured thousands of seeds for climate change and disease resistance research

Northern Arizona University, Flagstaff, Arizona *Graduated: May 2014*
BS - Environmental Science - Biology Emphasis
Relevant course work:

- Sustainable Botany
- Ecological Niche Modeling
- Conservation Biology
- Forest Measurements
- Atmosphere and Hydrosphere
- Organic Chemistry
- Biochemistry
- Climate Dynamics
- Environmental Ecology
- Biology / microbiology lab

Work Experience
Forest Service Detail: El Yunque National Forest Puerto Rican Parrot Hurricane Relief *November 6th 2017 – December 4th 2017*
Assist with the recovery, repair, and construction of artificial parrot nests, and parrot viewing platforms after hurricane Maria in El Yunque National forest for the endangered Puerto Rican Parrot program.

- Locate and assess damage of artificial parrot nests and viewing platforms in a dense rainforest environment
- Recover pieces of broken nests/platforms, and climb trees to recover parts or assess integrity of intact nests/platforms

- Choose new trees to install or build new nests/platforms, and install climbing spikes on new trees for easier future access
- Safely climb trees to install or rebuild artificial parrot nests and parrot viewing platforms
- Climb trees to install rigging lines for a broken 12" iron water pipeline that restored water to nearby town
- Use machete daily to rebuild/reopen trails and access points

Forest Service: Dorena Genetic Resource Center *January 2017 – Present*
Assist nursery crew leader in maintaining plant quality and nursery operations. Collect and grow/propagate native plants from cuttings and seed and outplant them for restoration purposes.

- Lead work crews on vegetation collection and outplanting trips
- Participate in completion of vegetation surveys and use dichotomous keys to identify plant species
- Fertilize, transplant, weed and prune dozens of native species and thousands of individual plants including our Port Orford cedar (POC) seed orchards
- Successfully trained for safe operation of utility vehicles required to complete nursery/horticultural duties which include a bobcat and flatbed, with experience using a tractor and aerial lift
- Plant propagation and seed collection/extraction on site and in the field for native plants and pines
- Strictly control disease and insects by conforming to a high standard of sanitation and monitoring
- Use seed inventories from various ranger districts and private seed companies to aid in developing an inventory and GIS map of available seed for restoration purposes
- Outplant hundreds of native species for native plant restoration projects in the Umpqua, Willamette, Deschutes, Siskiyou, Boise, and other National Forests
- Aid in the writing of revegetation plans and vegetation survey reports to complete restoration projects

Forest Service: Dorena Genetic Resource Center *April 2016 – January 2017*
Maintain smooth nursery operations and keep plants and facility in premium condition. Involved in native plant restoration, seed collection, and tree climbing.

- Skilled and safe tree climbing with experience collecting/caging cones, pruning trees, and conducting wildlife surveys. Have climbed for the Umpqua, Deschutes, and Fremont National Forests.
- Keep accurate seedling and general plant inventories of raised beds and greenhouses
- Knowledge of Dorena's irrigation system and Irritrols. Plumb new greenhouses with PVC and repair PVC plumbing when necessary
- Use and maintenance of waterjet planting system for restoration planting
- Record, download, enter, and send daily weather station data to NOAA
- Work in groups to effectively inoculate pines with blister rust and perform spore density counts using a compound microscope

NAU: Merriam Powell Center and School of Forestry *December 2014 – April 2016*
Researched climate impacts and disease resistance for southwestern white pine (SWWP) as part of a 4 million dollar NSF grant. Worked with supervisor and teammates to collect, process, grow, and maintain over 10,000 seedlings.

- Worked with NAU faculty and Forest Service employees across multiple disciplines including forest pathology, ecology, climate science, and epigenetics to develop SWWP studies

- Took initiative to produce quality climate and distribution maps of SWWP using Arcmap to choose ideal seed collection sites
- Basic distribution modeling for SWWP using MAXENT
- Directed student work crews to take scientific measurements of SWWP for common garden study
- Worked in an interdisciplinary team of professionals to install solar panels and maintain remote irrigation systems for Southwestern Experimental Garden Array (SEGA)
- Over 200 hours spent in the greenhouse/remote common gardens with experience maintaining and taking scientific measurements of over 8,000 seedlings in a small team of graduate students/professors.
- Tested/processed over 5,000 seeds, measured/process over 500 cones for collaborative epigenetic common garden study
- Presented SWWP distribution maps to a group of 20 SWWP, genetic, and modeling professionals
- Forest Service certified tree climber with over 100 hours of climbing experience, cone collecting, and cone manipulation while in tree for purpose of epigenetic and disease resistance research

Certifications and Awards

- Contracting Officer Representative Level I
- Forest Service Tree Climbing Instructor
- USDA Certificate of Merit Award

Resume of Kathleen A. Sale

Botanist
USDA Forest Service
Enterprise Unit
Klamath Falls, Oregon

Education**:**

Southern Oregon University, Ashland, OR 97520 M.S. in Science, Biology
Oregon Institute of Technology, Klamath Falls, OR 97601 B.S., Nursing. (Summa cum Laude)

Employment:

April 2018 to Present Botanist, USDA Forest Service Region 6 Restoration Services Team, Klamath Falls, Oregon
April1, 2018 to Present USDA Forest Service Botanist GS-0430-11, Detail
June 2002 to May 2018 USDA Forest Service TEAMS Enterprise Unit (now operating as the Enterprise Unit)
April 2011 – May 2018 USDA Forest Service Botanist GS-0430-09 Permanent Seasonal Appointment
June 2002 – September 2010 USDA Forest Service Ecologist GS-0408-09 Temporary Seasonal Appointment.
September 1994 to 2011 Oregon Institute of Technology, 3201 Campus Drive, Klamath Falls, OR 97601
June, 2011 Awarded Emeritus Status in Natural Sciences
2003-2011 Associate Professor of Natural Science
2003 Awarded indefinite tenure.
1999 - 2003 Assistant Professor, Department of Natural Science
1994 – 1998 Instructor, Department of Natural Science
June 1999 to September 2001 Fish and Wildlife Biologist, United States Fish and Wildlife Service, Klamath Falls, Oregon
June 1999 to September 2001, GS-7, Temporary Seasonal Appointment
June 1986 to September 1994, Registered Nurse, Klamath Falls, Oregon
June to September Registered Nurse with Klamath Hospice, Klamath Falls, OR
August 1993 to June 1994 Registered Nurse with Dr.Degan, Family Practice, Klamath Falls, OR
March 1992 to August 1993 Registered Nurse, Medical Floor, Merle West Medical Center, Klamath Falls, OR
June 1986- to March 1992 Registered Nurse, Klamath Family Practice Center, Klamath Falls, OR

Scholarly Activities:

2008 Article: Kayes , L. J.,Van Wormer, K., Kofranek, D., Sale, K., and McCune, B. (2008) Chemical variation of *Usnea longissima* Ach. in the central Oregon Coast Range*. North American Fungi 5*:1-10
2006 Assistant in research project, using thin layer chromatography to determine chemo-types in Usnealongissima at Oregon State University, Corvallis, OR.

Training and Certifications:

2018 Contracting Officer Representative I Certification, Klamath Falls, OR
2016 Arc GIS Online (AGOL) training, Klamath Falls, OR
2011 ArcGIS10-Editing Webcast, Tonya Jepson instructor, Geospatial Training and Awareness website.
2011 Completed Forest Plan Implementation Course 1900-01, Kelly Fike instructor.
2011 Completed Modules 1-14, Overview of NEPA on AgLearn
2009 Introduction to ArcGIS 1, John Ritter Instructor, Aspen GIS Services, Inc.
2007 National Science Foundation conference on grant writing in Portland, O
2006 BOT 514 Agrostology, CSS 305 Principles of Soil Science, audited BOT 542 Plant Population Ecology / Oregon State University, Corvallis, OR
2005 Training and Certification on conducting Mexican Spotted owl inventories USDA Forest Service, Lincoln National Forest, Cloudcroft, New Mexico
2004 BI 471 Ornithology / Southern Oregon University
2004 Attended training: Reference Reach Stream Channels: Documenting Form and Function

ATTACHMENT 10 - 2018 NON-VASCULAR PLANTS AND FUNGI OBSERVED

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Bryophyte	Leucodontaceae	*Antitrichia curtipendula*	antitrichia moss	ANCU3	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Brachytheciaceae	*Brachythecium frigidum*	cold brachythecium moss	BRFR70	X			X	native	Corvallis	Forest
Bryophyte	Cephaloziellaceae	*Cephaloziella divaricata*	cephalozia liverwort	CEDI11		X	X		native	USFS/Corvallis	Meadow
Bryophyte	Cephaloziellaceae	*Cephalozia bicuspidata*	cephalozia liverwort	CEBI4	X			X	native	Corvallis	Forest
Bryophyte	Cephaloziellaceae	*Cephalozia lacinulata*	cephalozia liverwort	CELA6	X			X	native	Corvallis	Forest
Bryophyte	Ditrichaceae	*Ceratodon purpureus*	ceratodon moss	CEPU12	X	X	X	X	native	USFS/Corvallis	Forest, Meadow, Disturbed
Bryophyte	Leskeaceae	*Claopodium bolanderi*	Bolander's claopodium moss	CLBO10	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Dicranaceae	*Dicranum fuscescens*	dicranum moss	DIFU5		X			native	USFS	Forest
Bryophyte	Dicranaceae	*Dicranum howellii*	Howell's dicranum moss	DIHO5	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Scapaniaceae	*Douinia ovata*		DOOV	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Brachytheciaceae	*Eurhynchium oreganum*	Oregon eurhynchium moss	EUOR2	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Jubulaceae	*Frullania sp.*		FRNI3		X			native	USFS	Hardwood
Bryophyte	Grimmiaceae	*Grimmia trichophylla*	grimmia dry rock moss	GRTR3	X				native	Corvallis	Rock/Meadow
Bryophyte	Grimmiaceae	*Grimmia* sp	grimmia dry rock moss	GRIMM2	X	X	X		native	USFS/Corvallis	Rock/Meadow
Bryophyte	Hypnaceae	*Hypnum circinale*	hypnum moss	HYCI70	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Brachytheciaceae	*Isothecium myosuroides*	isothecium moss	ISMY2	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Neckeraceae	*Metaneckera menziesii*	Menzies' metaneckera moss	MEME8	X	X		X	native	USFS/Corvallis	Forest/hardwood
Bryophyte	Mniaceae	*Mnium spinulosum*	largetooth calcareous moss	MNSP2	X			X	native	Corvallis	Forest
Bryophyte	Neckeraceae	*Neckera douglasii*	Douglas' neckera moss	NEDO70	X	X		X	native	USFS/Corvallis	Forest/hardwood
Bryophyte	Orthotrichaceae	*Orthotrichum speciosum*	lanceolateleaf rock moss	ORSP6	X			X	native	Corvallis	Forest/hardwood
Bryophyte	Mniaceae	*Plagiomnium insigne*	plagiomnium moss	PLIN11	X			X	native	Corvallis	Forest

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Bryophyte	Polytrichaceae	*Polytrichastrum alpinum*	alpine polytrichastrum moss	POAL24	X			X	native	Corvallis	Forest
Bryophyte	Polytrichaceae	*Polytrichum juniperinum*	juniper polytrichum moss	POJU70		X	X		native	USFS/Corvallis	Open/meadow
Bryophyte	Porellaceae	*Porella navicularis*	porella liverwort	PONA7	X	X		X	native	USFS/Corvallis	Forest/hardwood
Bryophyte	Hypnaceae	*Pseudotaxiphyllum elegans*	elegant pseudotaxiphyllum moss	PSEL3	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Grimmiaceae	*Racomitrium elongatum*	elongate racomitrium moss	RAEL3		X	X		native	USFS/Corvallis	Open/meadow
Bryophyte	Grimmiaceae	*Racomitrium varium*	racomitrium moss	RAVA3	X	X	X		native	USFS/Corvallis	Open/meadow/forest
Bryophyte	Radulaceae	*Radula bolanderi*	radula liverwort	RABO5		X			native	USFS	Hardwood
Bryophyte	Mniaceae	*Rhizomnium nudum*	naked rhizomnium moss	RHNU4	X			X	native	Corvallis	Forest
Bryophyte	Hylocomiaceae	*Rhytidiadelphus triquetrus*	rough goose neck moss	RHTR70	X	X		X	native	USFS/Corvallis	Forest/open
Bryophyte	Hylocomiaceae	*Rhytidiopsis robusta*	robust rhytidiopsis moss	RHRO7				X	native	Corvallis	Forest
Bryophyte	Aneuraceae	*Riccardia latifrons*		RILA6	X			X	native	Corvallis	Forest
Bryophyte	Scapaniaceae	*Scapania bolanderi*	scapania liverwort	SCBO4	X	X		X	native	USFS/Corvallis	Forest
Bryophyte	Orthotrichaceae	*Ulota megalospora*	largespore ulota moss	ULME		X			native	USFS	Hardwood
Fungus	Amanitaceae	*Amanita constricta*			X			X	native	Corvallis	Forest
Fungus	Amanitaceae	*Amanita gemmata*			X				native	Corvallis	Forest
Fungus	Amanitaceae	*Amanita silvicola*				X			native	USFS/Corvallis	Forest
Fungus	Boletaceae	*Boletus chrysenteron*				X			native	USFS/Corvallis	Forest
Fungus	Inocybaceae	*Crepidotus applanatus*						X	native	Corvallis	Forest
Fungus	Polyporaceae	*Cryptoporus volvatus*						X	native	Corvallis	Forest
Fungus	Agaricaceae	*Cyathus stercoreus*					X	X	native	USFS/Corvallis	Forest
Fungus	Fomitopsidaceae	*Fomitopsis ochracea*			X			X	native	Corvallis	Forest

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Fungus	Fomitopsidaceae	*Fomitopsis pinicola*			X			X	native	Corvallis	Forest
Fungus	Strophariaceae	*Hebeloma crustuliniforme*			X	X			native	USFS/Corvallis	Forest
Fungus	Hygrophoraceae	*Hygrocybe acutoconica*						X	native	Corvallis	Forest
Fungus	Hygrophoraceae	*Hygrocybe punicea*				X			native	Corvallis	Forest
Fungus	Inocybaceae	*Inocybe pyriodora*				X			native	Corvallis	Forest
Fungus	Fomitopsidaceae	*Ischnoderma benzoinum*						X	native	Corvallis	Forest
Fungus	Russulaceae	*Lactarius rubrilacteus*				X			native	USFS/Corvallis	Forest
Fungus	Mycenaceae	*Mycena flavoalba*			X				native	Corvallis	Forest
Fungus	Strophariaceae	*Naematoloma capnoides*			X				native	Corvallis	Forest
Fungus	Tricholomataceae	*Pleurotus porrigens*				X		X	native	Corvallis	Forest
Fungus	Exidiaceae	*Phlogiotis helvelloides*					X	X	native	Corvallis	Forest
Fungus	Pluteaceae	*Pluteus cervinus*			X			X	native	Corvallis	Forest
Fungus	Polyporaceae	*Poria incrassata*					X		native	USFS/Corvallis	Forest
Fungus	Russulaceae	*Russula cremoricolor*				X			native	USFS/Corvallis	Forest
Fungus	Russulaceae	*Russula placita*				X		X	native	USFS/Corvallis	Forest
Fungus	Russulaceae	*Russula rosea*				X		X	native	USFS/Corvallis	Forest
Fungus	Russulaceae	*Russula xerampelina*				X			native	USFS/Corvallis	Forest
Fungus	Tremellaceae	*Tremella mesenterica*					X		native	USFS/Corvallis	Forest
Lichen	Alectoriaceae	*Alectoria sarmentosa*	witch's hair lichen	ALSA9	X			X	native	Corvallis	Forest
Lichen	Baeomycetaceae	*Baeomyces rufus*	cap lichen	BARU5		X	X		Native	USFS/Corvallis	Open/meadow
Lichen	Lecideaceae	*Bryobilimbia* sp.			X			X	Native	Corvallis	Forest
Lichen	Parmeliaceae	*Bryoria capillaris*	horsehair lichen	BRCA14	X			X	Native	Corvallis	Forest
Lichen	Parmeliaceae	*Bryoria pseudofuscescens*	horsehair lichen	BRPS60	X			X	native	Corvallis	Forest
Lichen	Teloschistaceae	*Caloplaca* holocarpa	orange lichen	CCAHO19	X				native	Corvallis	Rock/meadow
Lichen	Cladoniaceae	*Cladonia pyxidata*	cup lichen	CLPY60	X	X	X		native	USFS/Corvallis	Open/meadow

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Lichen	Cladoniaceae	*Cladonia* sp.	cup lichen	CLADO3	X	X	X	X	native	USFS/Corvallis	Forest/meadow
Lichen	Cladoniaceae	*Cladonia transcendens*	transcend cup lichen	CLTR60	X			X	native	Corvallis	Forest
Lichen	Pannariaceae	*Fuscopannaria pacifica*			X	X		X	native	USFS/Corvallis	Rock/forest
Lichen	Parmeliaceae	*Hypogymnia enteromorpha*	tube lichen	HYEN60	X	X		X	native	USFS/Corvallis	Forest
Lichen	Parmeliaceae	*Hypogymnia inactiva*	inactive tube lichen	HYIN2	X	X		X	native	USFS/Corvallis	Forest
Lichen	Bacidiaceae	*Japewia tornoensis*	japewia lichen	JATO	X			X	native	Corvallis	Forest
Lichen	Lecanoraceae	*Lecanora symmicta*	rim lichen	LESY	X			X	native	Corvallis	Rock/meadow
Lichen	Lecideaceae	*Lecidea* sp.	crust lichen	LECID2	X		X		native	Corvallis	Rock/meadow
Lichen	Lobariaceae	*Lobaria oregana*	Oregon lung lichen	LOOR60		X			native	USFS	Forest
Lichen	Lobariaceae	*Lobaria pulmonaria*	lung lichen	LOPU60		X			native	USFS	Forest
Lichen	Pertusariaceae	*Loxosporopsis corallifera*		LOCO15	X	X		X	native	USFS/Corvallis	Forest
Lichen	Parmeliaceae	*Menegazzia terebrata*	honeycombed lichen	METE7		X	X		native	USFS/Corvallis	Forest/hardwood
Lichen	mycoblastaceae	*Mycoblastus sanguinarius*	blood lichen	MYSA5	X			X	native	Corvallis	Forest
Lichen	Nephromataceae	*Nephroma parile*	kidney lichen	NEPA60		X			native	USFS	Forest
Lichen	Pertusariaceae	*Ochrolechia laevigata*	crabseye lichen	OCLA3	X	X		X	native	USFS/Corvallis	Forest
Lichen	Pertusariaceae	*Ochrolechia oregonensis*	Oregon crabseye lichen	OCOR60	X	X		X	native	USFS/Corvallis	Forest
Lichen	Parmeliaceae	*Parmelia hygrophila*	shield lichen	PAHY4	X	X		X	native	USFS/Corvallis	Forest
Lichen	Parmeliaceae	*Parmelia sulcata*	shield lichen	PASU63	X	X		X	native	USFS/Corvallis	Forest
Lichen	Peltigeraceae	*Peltigera degenii*	Degen's felt lichen	PEDE23		X			native	USFS	Forest
Lichen	Peltigeraceae	*Peltigera praetextata*	felt lichen	PEPR60		X			native	USFS	Forest
Lichen	Pertusariaceae	*Pertusaria ophthalmiza*	pore lichen	PEOP4	X	X		X	native	Corvallis	Forest
Lichen	Pertusariaceae	*Pertusaria* sp.	crust lichen	PERTU	X	X	X	X	native	USFS/Corvallis	Forest
Lichen	Pertusariaceae	*Pertusaria subambigens*	pore lichen	PESU14	X	X		X	native	Corvallis	Forest
Lichen	Stereocaulaceae	*Pilophorus acicularis*	nail lichen	PIAC60	X	X		X	native	Corvallis	Forest

Life form	Family	Botanical name	Common Name	CODE	CPI Site	Road FS	Road City	New BPA Site	Nativity	Ownership	Habitat
Lichen	Stereocaulaceae	*Pilophorus clavatus*	nail lichen	PICL3	X			X	native	Corvallis	Forest
Lichen	Pertusariaceae	*Placopsis gelida*	bullseye lichen	PLGE2		X	X		native	USFS/Corvallis	Meadow/rock/open
Lichen	Parmeliaceae	*Platismatia glauca*	ragged lichen	PLGL60		X			native	USFS	Forest
Lichen	Parmeliaceae	*Platismatia herrei*	Herre's ragged lichen	PLHE60	X	X		X	native	USFS/Corvallis	Forest
Lichen	Parmeliaceae	*Platismatia lacunosa*	ragged lichen	PPLLA6	X	X		X	native	USFS/Corvallis	Forest
Lichen	Porpidiaceae	*Porpidia* sp.	porpidia lichen	PORPI2	X			X	native	Corvallis	Forest
Lichen	Lobariaceae	*Pseudocyphellaria crocata*		PSCR60		X			native	USFS	Forest
Lichen	Lobariaceae	*Pseudocyphellaria anomala*		PSAN60		X			native	USFS	Forest
Lichen	Sphaerophoraceae	*Sphaerophorus globosus* var. *gracilis*	globe ball lichen	SPGLG	X	X		X	native	USFS/Corvallis	Forest
Lichen	Lobariaceae	*Sticta fuliginosa*	spotted felt lichen	STFU60		X			native	USFS	Forest
Lichen	Bacidiaceae	*Tephromela* sp.	tephromela lichen	TEPHR2	X			X	native	Corvallis	Forest
Lichen	Parmeliaceae	*Tuckermannopsis orbata*	tuckermannopsis lichen	TUOR60	X	X		X	native	USFS/Corvallis	Forest
Lichen	Parmeliaceae	*Usnea filipendula*	beard lichen	USFI61	X	X		X	native	USFS/Corvallis	Forest
Lichen	Parmeliaceae	*Usnea* sp.	beard lichen	USNEA2	X	X		X	native	USFS/Corvallis	Forest