

# Exhibit J

## Wetlands and Other Waters

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**Mist Resiliency Project**

**March 2024**

**Prepared for**



**NW Natural**

**Northwest Natural Gas**

**Prepared by**



**TETRA TECH**

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## **Acronyms and Abbreviations**

HDD	Horizontal Directional Drilling
NHD	National Hydrography Dataset
NWI	National Wetland Inventory
NWN	Northwest Natural Gas
OAR	Oregon Administrative Rules
ODSL	Oregon Department of State Lands
ORS	Oregon Revised Statutes
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
Project	Mist Resiliency Project
USACE	US Army Corps of Engineers
USGS	US Geological Survey

## 1.0 Introduction

Exhibit J provides information pertaining to wetlands and waters located in the Site Boundary and potential adverse impacts of construction and operation of the Mist Resiliency Project (Project) on regulated waters of the state, as required by Oregon Administrative Rules (OAR) 345-021-0010(1)(j) paragraphs (A) through (F).

## 2.0 Wetlands and Other Jurisdictional Waters – OAR 345-021-0010(1)(j)(A)

*OAR 345-021-0010(1)(j) Information based on literature and field study, as appropriate, about waters of this state, as defined under ORS 196.800, including:*

*OAR 345-021-0010(1)(j)(A) A description of all areas within the site boundary that might be waters of this state and a map showing the location of these features;*

The following sections describe wetlands and other waters identified by Northwest Natural Gas (NWN), the Certificate Holder, as required by OAR 345-021-0010(1)(j)(A). Detailed descriptions of the wetlands and other waters of the state are presented in Attachment J-1 Wetlands and Waters Delineation Report.

### 2.1 Definitions

Oregon Revised Statutes (ORS) 196.800(15) defines “Waters of the State” as:

*All natural waterways, tidal and non-tidal bays, intermittent streams, constantly flowing streams, lakes, wetlands, that portion of the Pacific Ocean that is in the boundaries of this state, all other navigable and non-navigable bodies of water in this state and those portions of the ocean shore, as defined in ORS 390.605, where removal or fill activities are regulated under a state-assumed permit program as provided in 33 United States Code 1344(g) of the Federal Water Pollution Control Act, as amended.*

### 2.2 Jurisdictional Versus Non-Jurisdictional Waters

The Oregon Department of State Lands (ODSL) does not regulate ephemeral waters and only regulates some roadside ditches. State jurisdictional determinations will occur once ODSL has reviewed and approved the wetlands and waters delineation report with a concurrence letter and expiration date of that jurisdictional determination.

Based on OAR 141-85-0515(10), roadside ditches are not jurisdictional if they are less than 10 feet wide, artificially created, not adjacent, connected, or contiguous with wetlands, and do not contain food and game fish. This exhibit presents NWN’s best professional judgment as to which features are jurisdictional under ODSL regulation. Most of the roadside ditches would not be jurisdictional,

as they do not appear to meet the definition provided above. Any ditch and culvert connected or adjacent to a wetland should be considered jurisdictional.

NWN recognizes that any final determination of agency jurisdiction will be made by ODSL based on the information presented by NWN.

## **2.3 Desktop Study**

NWN conducted a desktop study of potentially jurisdictional wetlands and other waters to assist in planning for field delineations. Site-specific literature and Geographic Information System map layers reviewed as part of the desktop study included:

- The Natural Resources Conservation Service Soil Surveys of Columbia County in Oregon (NRCS 1986). The soil surveys were useful in estimating the likelihood and extent of wetlands indicated by mapped hydric soil units.
- National Wetland Inventory (NWI) maps, see Figure J-1 (USFWS 2012). The NWI data were useful not only for identifying potential wetlands, but also for identifying the likely location of off-site wetlands with the potential for influencing the duration of flow in on-site streams.
- US Geological Survey (USGS) 7.5-minute quadrangle maps for the proposed transmission pipeline corridor.
- USGS National Hydrography Dataset (NHD; USGS 2001) (Figure J-1). The NHD provided the location of potential streams.

## **2.4 Delineation Methods**

Field investigations for the delineation of wetlands and other waters included pedestrian surveys within the study area. Field delineations were conducted during the following time periods:

- September 2022; and
- September and December 2023.

Delineations were conducted utilizing techniques published in the 1987 USACE *Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (USACE 2010), and OARs for Wetland Delineations 141-090-0005 through 141-090-0055.

During the delineation effort, each wetland or other water encountered was examined for field indicators (vegetation, soils, and hydrology) and this evidence was documented using standard field data sheets. The location and extent of each wetland or other water (regardless of its characteristics) was mapped with GPS technology. Streams were characterized as intermittent or ephemeral using the Oregon Streamflow Duration Assessment Method, Interim Version (Nadeau 2011). The data sheets are provided in the wetland delineation report.

Detailed descriptions of delineation methods for wetlands and other waters are provided in the Wetlands and Waters Delineation Report (Attachment J-1). NWN has not yet received written concurrence from ODSL.

## 2.5 Delineation Results

Based on the results of the site investigations, 19 wetlands and nine other water features were delineated within the Site Boundary. Table J-1 summarizes all wetland and other waters of the state delineated within the Site Boundary by water type classification. Attachment J-1 provides additional detail about each of the wetlands and other waters, including ephemeral streams. Figure J-2 presents all wetlands and waters mapped within the Project Site Boundary.

**Table J-1. Summary of Delineated Wetlands and Other Water Features**

Type of Water	Number of Features
Palustrine Emergent (PEM) Wetland	12
Palustrine Scrub-Shrub (PSS) Wetland	3
Palustrine Forested (PFO)	4
Perennial Waters (Lindgren and Lindgren Tributary)	2
Ephemeral Waters	3
Ditches	4

## 3.0 Effects on Wetlands and Other Jurisdictional Waters of the State – OAR 345-021-0010(1)(j)(B)

*OAR 345-021-0010(1)(j)(B) An analysis of whether construction or operation of the proposed facility would adversely affect any waters of this state;*

Since the start of Project planning and design, NWN has made efforts to avoid and minimize impacts to wetlands and other waters. While developing the initial Project layout, NWN utilized NWI and NHD data to site all of the Project facilities away from wetlands and other waters to the maximum extent practicable. After the wetland delineation in 2022 and 2023, the resulting wetland and waters data were used to inform the microsites of the pipeline and other facilities.

Impacts to wetlands and other waters have been and will continue to be avoided to the extent practicable as the Project design moves forward. Horizontal directional drilling (HDD) will be used in many locations to avoid direct impacts to wetlands and streams. For example, HDD will be used to cross waters such as Lindgren Creek, which is considered Essential Salmonid Habitat. NWN will narrow the construction footprint to avoid wetlands and will construct aspects of the Project to traverse over or under culverts to avoid direct impacts to other waters to the maximum extent feasible. Construction mats will be used when heavy machinery is not on improved roads or surfaces.

The only aspect of the Project that will have wetland impacts is the placement of a buried powerline starting at Highway 202 and ending at Miller Station. Those impacts will be temporary, there are no permanent impacts proposed. These wetlands are in an existing powerline corridor and will be restored post-construction. All other identified wetlands and other waters of the state will be avoided.

## 4.0 Significance of Impacts – OAR 345-021-0010(1)(j)(C)

*OAR 345-021-0010(1)(j)(C) A description of the significance of potential adverse impacts to each feature identified in (A), including the nature and amount of material the applicant would remove from or place in the waters analyzed in (B);*

NWN estimates the construction of the Project would result in temporary impacts to wetlands which are summarized in Table J-2. Due to avoidance and minimization efforts, the Project will not permanently impact wetlands or other jurisdictional waters. Temporary impacts to wetlands total 0.016 acres.

**Table J-2. Summary of Impacts to Wetlands**

Wetland Name	Temporary Impact (acres)	Removal (cubic yards)	Fill (cubic yards)
WET-10	0.001	<1	<1
WET-11	0.005	16	16
WET-12	0.010	33	33
<b>Total</b>	<b>0.016</b>	<b>50</b>	<b>50</b>

As described above, NWN will use HDD methods to install the pipeline under culverts of waterways. For locations where the pipeline will not be installed using HDD methods, NWN will utilize the trenching method. Trenching will consist of excavation of soils, stockpiling soils (separating topsoil and subsoil), placement of the conduit, and subsequent backfill to preconstruction contours. Trenching is expected to be a temporary impact.

No other impacts to wetlands and other waters will occur within laydown areas and bore pads associated with HDD pipeline installation methods and temporary extra workspace. The bore pad is the entry point where the pilot hole and pipe will be drilled underground through an excavated pit. The laydown areas extend in the opposite direction of the bore pad. Laydown areas are utilized to assemble the pipe segments prior to installing. Temporary extra work space is needed for construction along the pipeline route in locations where the construction corridor is not wide enough to work in safely. Construction vehicles will operate on laydown areas and designated temporary extra workspace areas when soils are dry. If soil is moist, construction mats would be used to lessen impacts to soil. No impacts to wetlands and other waters will occur with use of the off-site storage yards.

## **5.0 Information Supporting Lack of Requirement for Removal-Fill Permit – OAR 345-021-0010(1)(j)(D)**

*OAR 345-021-0010(1)(j)(D) If the proposed facility would not need a removal-fill authorization, an explanation of why no such authorization is required for the construction and operation of the proposed facility;*

The project will exceed 50 cubic yards of removal and fill within jurisdictional wetlands. There is not an exemption that can be applied to the Project. Because impacts from the Project will only consist of temporary wetland impacts; however, the General Authorization for Temporary Disturbance to Non-Tidal Wetlands will be used to authorize the impacts.

## **6.0 Information Supporting Issuance of Removal-Fill Permit – OAR 345-021-0010(1)(j)(E)**

*OAR 345-021-0010(1)(j)(E) If the proposed facility would need a removal-fill authorization, information to support a determination by the Council that the Oregon Department of State Lands should issue a removal-fill permit, including information in the form required by the Department of State Lands under OAR Chapter 141 Division 85; and*

General Authorizations are a less robust permitting route compared to the Individual Permit which requires the Joint Permit Application to be submitted for permitting. The General Authorization for Temporary Disturbance to Non-Tidal Wetlands requires that there are no permanent impacts to wetlands and no impacts to waters. Temporary impacts to wetlands cannot exceed 0.2 acres. Because the project has avoided all permanent impacts and will only temporarily impact 0.016 acres of wetland, the General Authorization is the appropriate permitting route for this project. General Authorizations are valid for 3 years and can be reviewed and approved in as little as 30 days. These cannot be renewed after the expiration date. The wetland delineation report must be concurred with prior to issuance of the General Authorization. The wetland report review time usually takes a minimum of 120 days. A copy of the General Authorization is attached as Attachment J-2. The General Authorization will be submitted after ODSL has concurred with the wetland delineation report.

## **7.0 Mitigation and Monitoring Program – OAR 345-021-0010(1)(j)(F)**

*OAR 345-021-0010(1)(j)(F) A description of proposed actions to mitigate adverse impacts to the features identified in (A) and the applicant's proposed monitoring program, if any, for such impacts.*

The ODSL does not require mitigation for temporary impacts to wetlands or other waters. Temporary impacts are defined by ODSL as adverse impacts to waters of this state that are rectified within 24 months from the date of the initiation of the impact.

Following construction, temporary impact sites will be reestablished to the original ground elevation, the ground will be revegetated, and precautions will be taken to ensure that the site's hydrology is retained by placing erosion control devices in appropriate areas. In locations where wetlands will be directly affected by trenching, no net loss of wetland area and no loss of wetland functions will result since construction will be temporary. Monitoring is not required if the project is approved under the General Authorization.

**Table J-3. Submittal Requirements Matrix**

Requirement	Location
OAR 345-021-0010(1)(j) Information based on literature and field study, as appropriate, about waters of this state, as defined under ORS 196.800 including:	-
(A) A description of all areas within the site boundary that might be waters of this state and a map showing the location of these features.	Section 2
(B) An analysis of whether construction or operation of the proposed facility would adversely affect any waters of this state.	Section 3
(C) A description of the significance of potential adverse impacts to each feature identified in (A), including the nature and amount of material the applicant would remove from or place in the waters analyzed in (B).	Section 4
(D) If the proposed facility would not need a removal-fill authorization, an explanation of why no such authorization is required for the construction and operation of the proposed facility.	Section 5
(E) If the proposed facility would need a removal-fill authorization, information to support a determination by the Council that the Oregon Department of State Lands should issue a removal-fill permit, including information in the form required by the Department of State Lands under OAR chapter 141 division 85.	Section 6
(F) A description of proposed actions to mitigate adverse impacts to the features identified in (A) and the applicant's proposed monitoring program, if any, for such impacts.	Section 7

## 8.0 References

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Nadeau, T-L. 2011 Streamflow Duration Assessment Method for Oregon, U.S. Environmental Protection Agency, Region 10, Document No. EPA 910-R-11-002.

NRCS (Natural Resources Conservation Service).1986. The Soils Survey of Columbia County, Oregon.

[http://www.nrcs.usda.gov/Internet/FSE\\_MANUSCRIPTS/oregon/OR009/0/or009\\_text.pdf](http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/oregon/OR009/0/or009_text.pdf)



USACE (U.S. Army Corps of Engineers). 2010. Regional supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Range. Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USFWS (U.S. Fish and Wildlife Service). 2012. National Wetlands Inventory Download Data: USFWS Online Data Website: <http://www.fws.gov/wetlands/Data/State-Downloads.html>

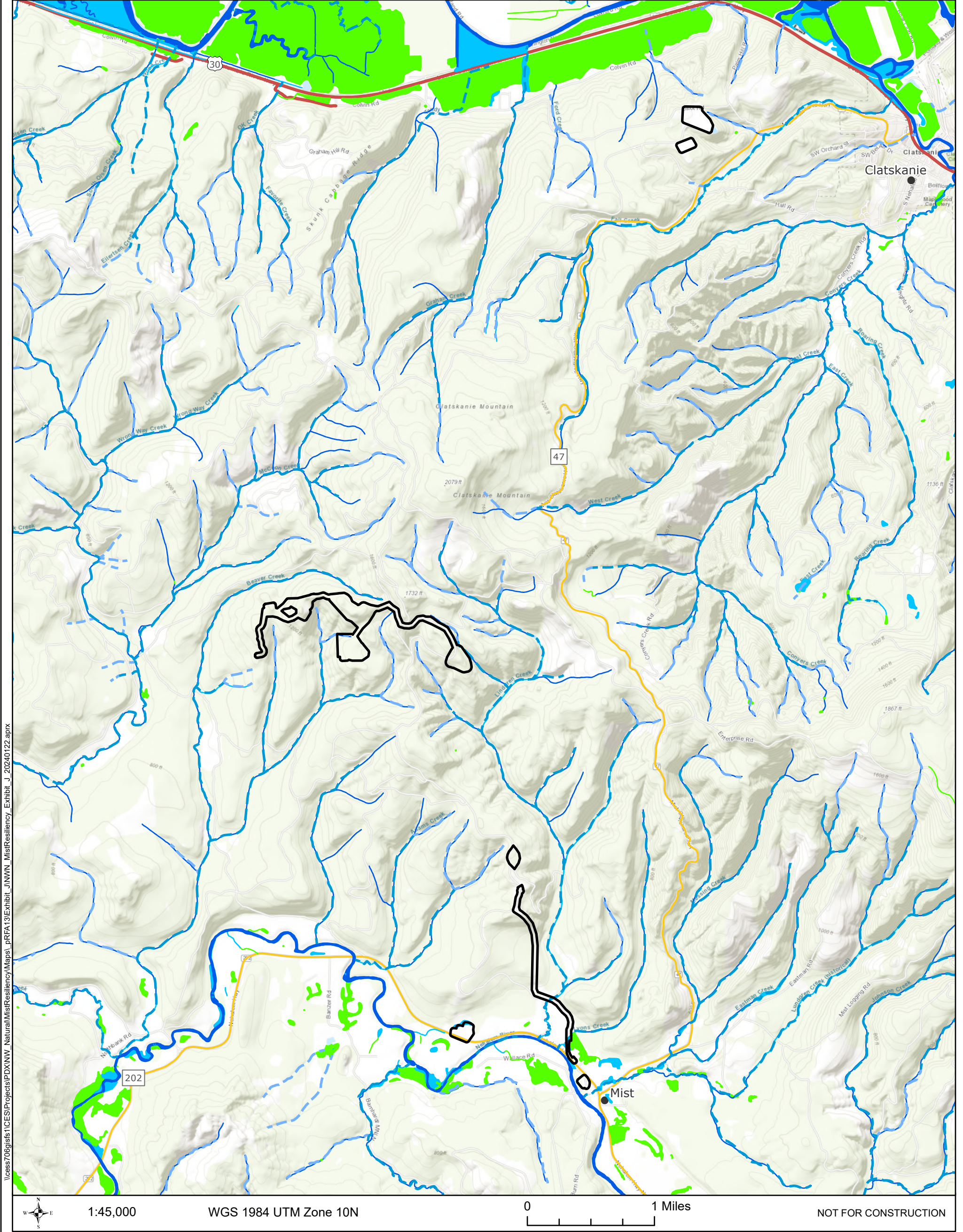
USGS (U.S. Geological Survey). 2001. National Hydrology Dataset (NHD). <http://nhd.usgs.gov>

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# Figures

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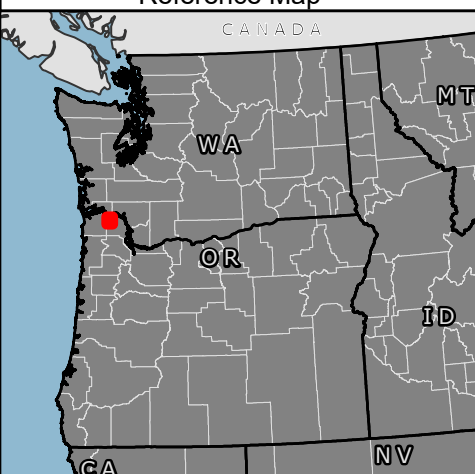
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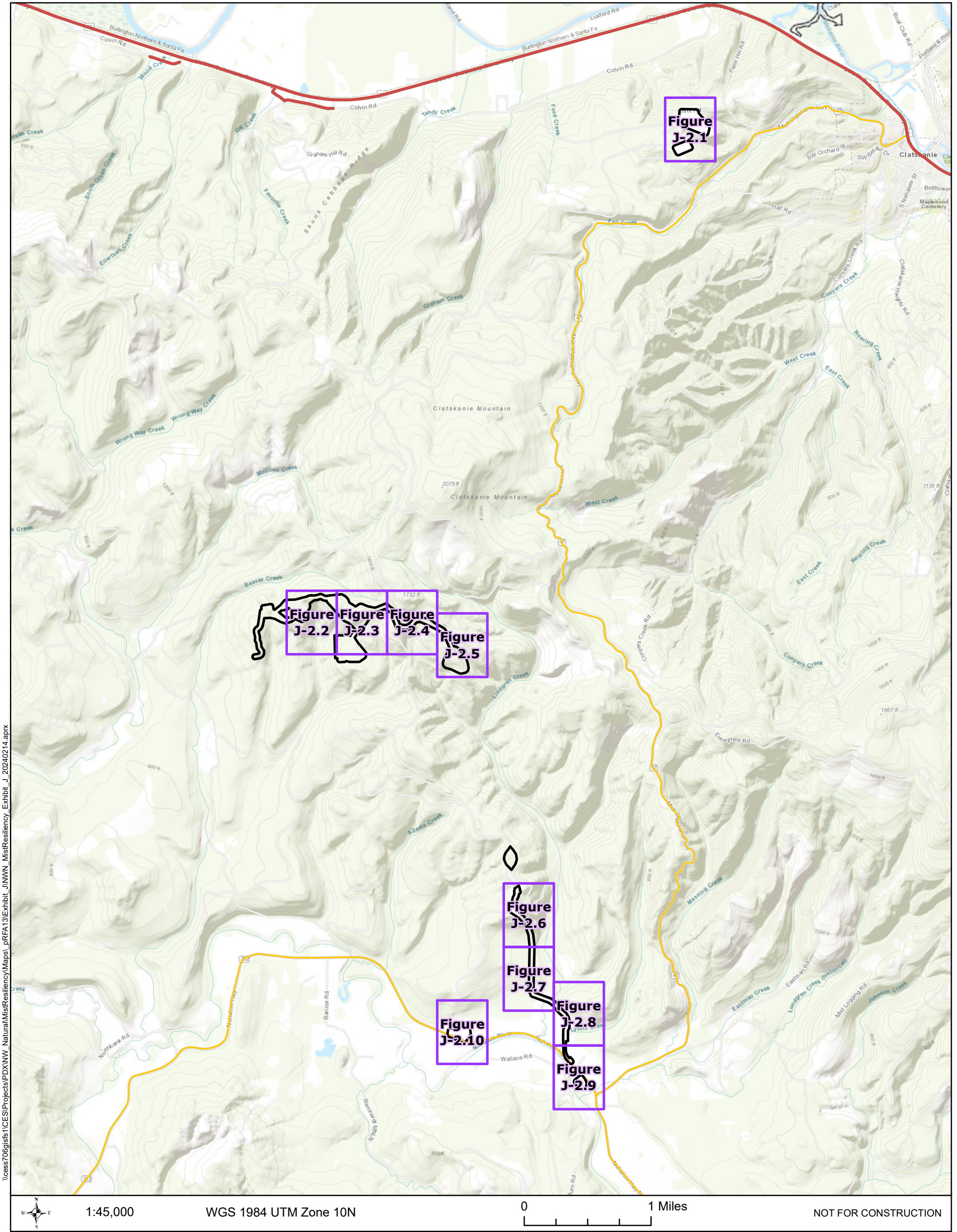
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<div><b>Mist Resiliency Project</b></div> <div><b>Figure J-1 National Wetlands Inventory and National Hydrography Dataset</b></div> <div>COLUMBIA COUNTY, OREGON</div>	<div> Site Boundary</div> <div> City/Town</div> <div> County Boundary</div> <div> US Highway</div> <div> State Highway</div>	<div>Wetlands and Waters</div> <div> Freshwater Emergent Wetland (NWI)</div> <div> Freshwater Forested/Shrub Wetland (NWI)</div> <div> Riverine (NWI)</div> <div> Lake/Pond (NHD)</div> <div> Swamp/Marsh (NHD)</div> <div> Intermittent Stream (NHD)</div> <div> Perennial Stream (NHD)</div>	<div>Reference Map</div> 
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<div>Mist Resiliency Project</div> <div>Figure J-2 Delineated Wetlands and Waters Index Map</div> <div>COLUMBIA COUNTY, OREGON</div>	<div><div><div></div>Site Boundary</div><div><div></div>Grid Index</div><div><div></div>County Boundary</div><div><div></div>US Highway</div><div><div></div>State Highway</div></div>	<div>Reference Map</div> <div></div>
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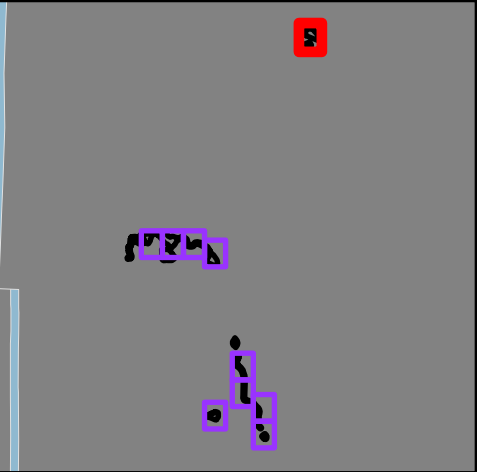
**Mist Resiliency Project**

**Figure J-2.1  
Delineated Wetlands  
and Waters**

COLUMBIA COUNTY, OREGON

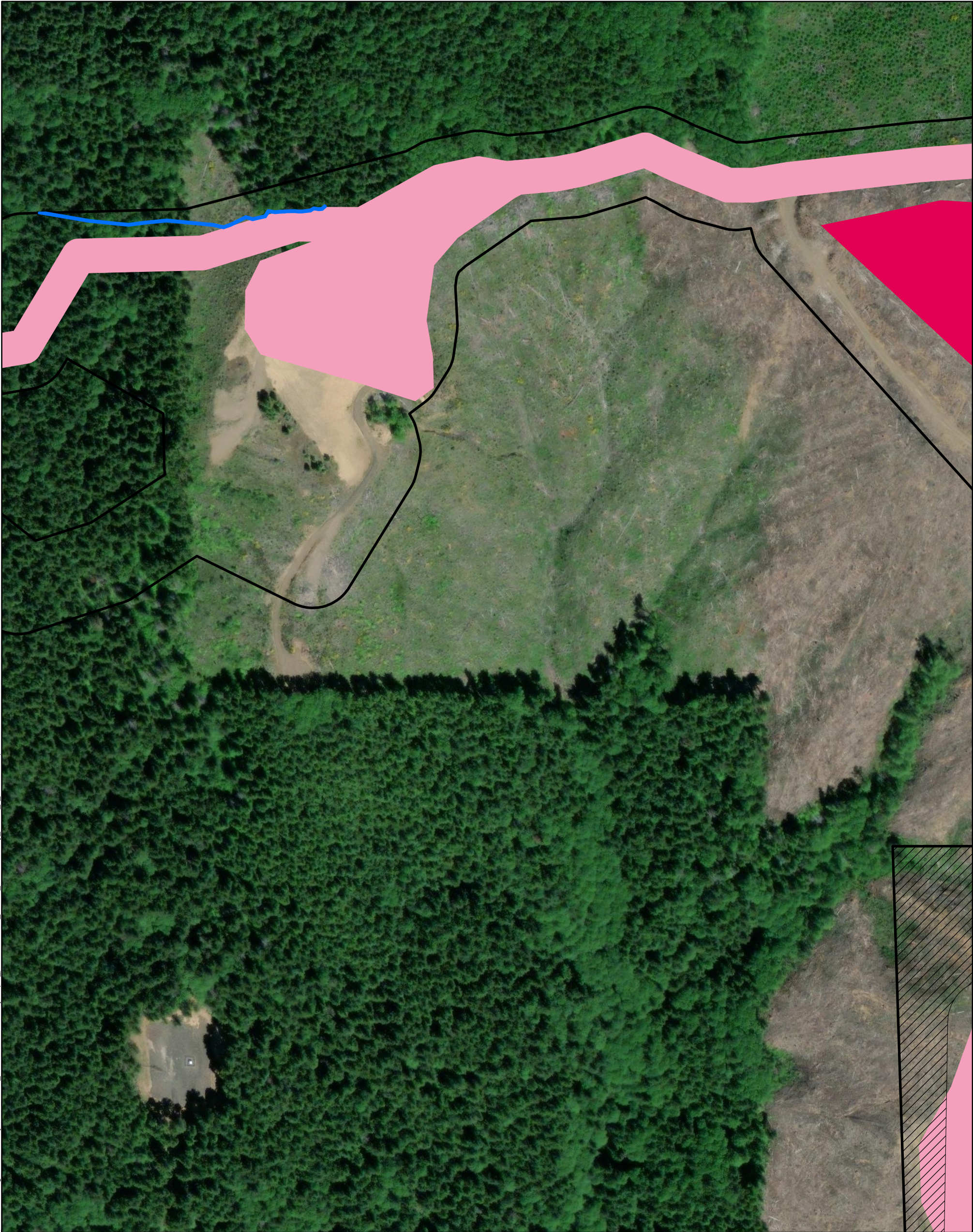
-  Site Boundary
- Delineated Features
-  Field Delineated Wetland
- Impacts
-  Temporary Impact

Reference Map





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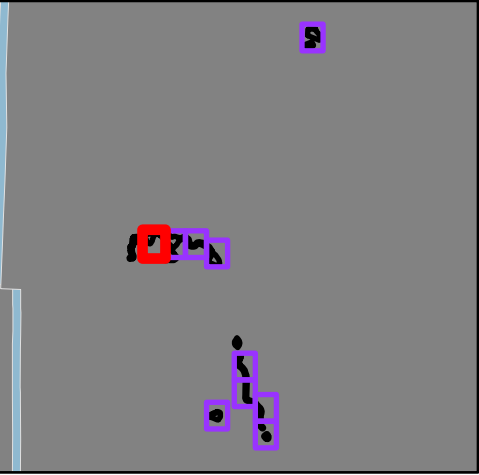
**Mist Resiliency Project**

**Figure J-2.2  
Delineated Wetlands  
and Waters**

COLUMBIA COUNTY, OREGON

- Site Boundary
- Area Not Surveyed
- Delineated Features**
- Field Delineated Stream
- Impacts**
- Permanent Impact
- Temporary Impact

**Reference Map**





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### Mist Resiliency Project

**Figure J-2.3  
Delineated Wetlands  
and Waters**

COLUMBIA COUNTY, OREGON

- Site Boundary
- Area Not Surveyed
- Delineated Features
  - Culvert
- Impacts
  - Permanent Impact
  - Temporary Impact

### Reference Map



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**Mist Resiliency Project**

**Figure J-2.4  
Delineated Wetlands  
and Waters**

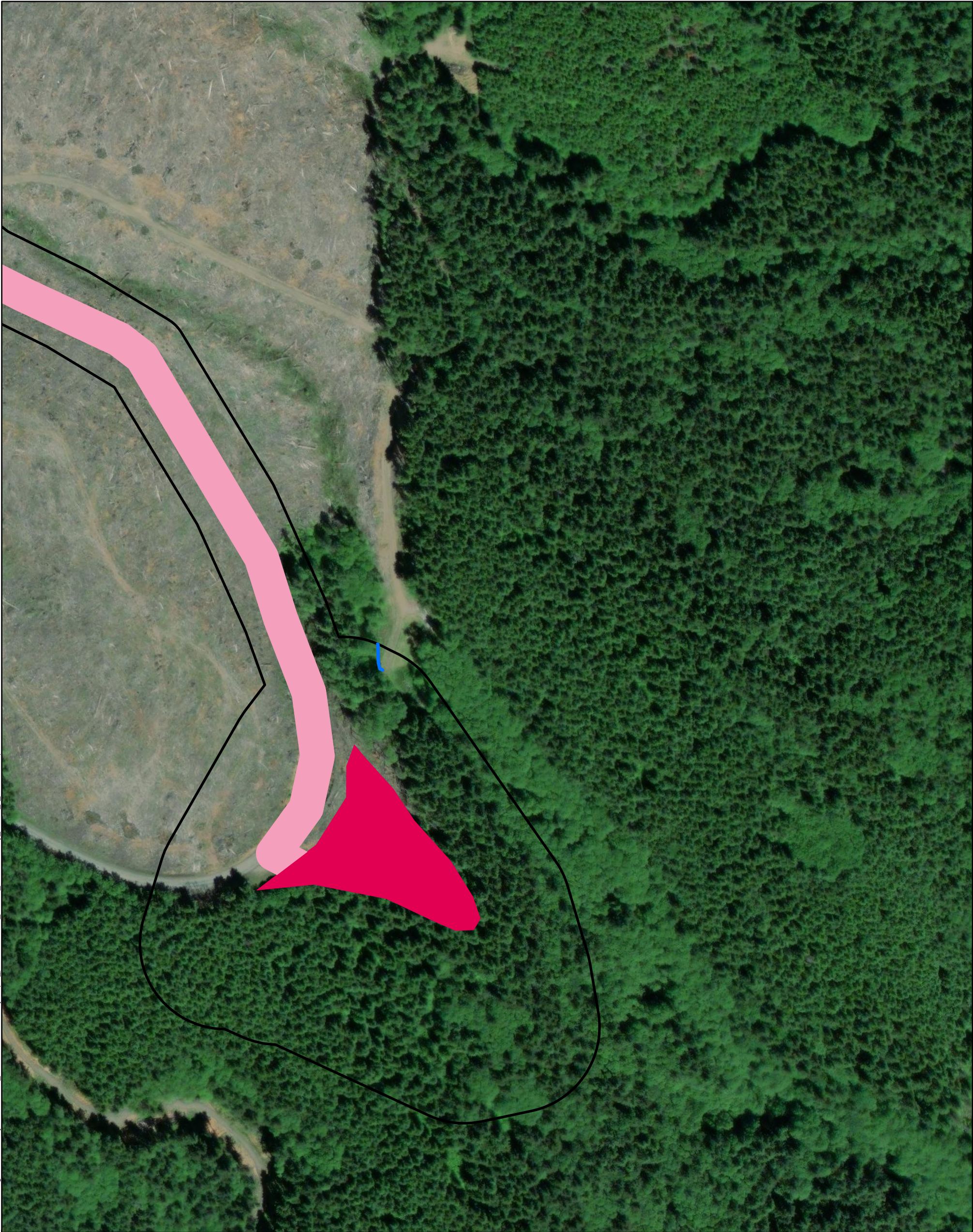
COLUMBIA COUNTY, OREGON

- Site Boundary**
- Delineated Features**
- Field Delineated Stream
  - Field Delineated Wetland
  - Culvert
- Impacts**
- Temporary Impact

**Reference Map**



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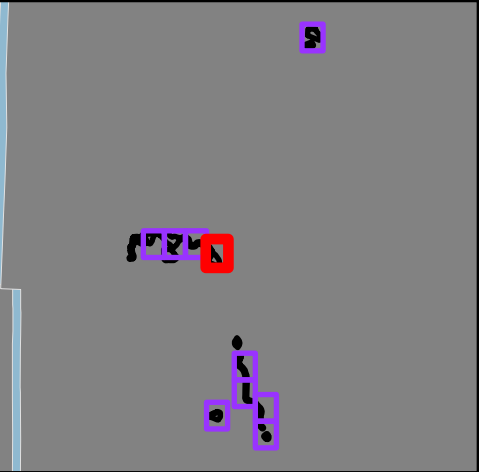
Mist Resiliency Project

Figure J-2.5  
Delineated Wetlands  
and Waters

COLUMBIA COUNTY, OREGON

- Site Boundary
- Delineated Features
  - Field Delineated Stream
- Impacts
  - Permanent Impact
  - Temporary Impact

Reference Map





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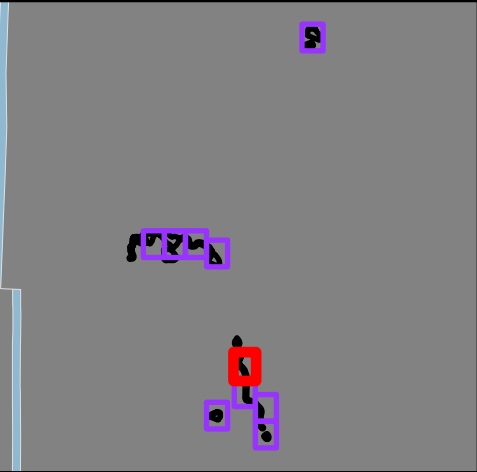
### Mist Resiliency Project

**Figure J-2.6  
Delineated Wetlands  
and Waters**

COLUMBIA COUNTY, OREGON

-  Site Boundary
- Delineated Features
-  Field Delineated Stream
-  Field Delineated Wetland
- Impacts
-  Temporary Impact

#### Reference Map





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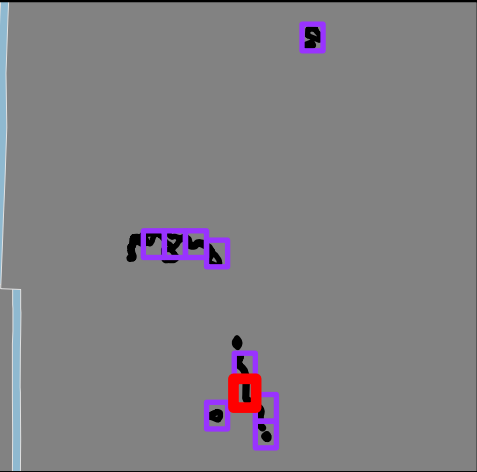
Mist Resiliency Project

Figure J-2.7  
Delineated Wetlands  
and Waters

COLUMBIA COUNTY, OREGON

- Site Boundary
- Delineated Features
- Field Delineated Stream
- Field Delineated Wetland
- Culvert
- Impacts
- Temporary Impact

Reference Map





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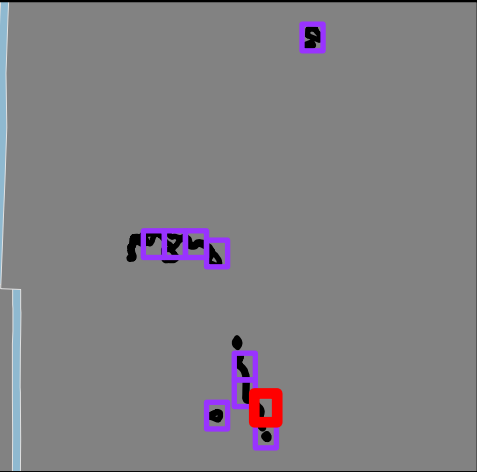
**Mist Resiliency Project**

**Figure J-2.8  
Delineated Wetlands  
and Waters**

COLUMBIA COUNTY, OREGON

- Site Boundary
- Delineated Features
- Field Delineated Stream
- Field Delineated Wetland
- Culvert
- Impacts
- Temporary Impact

Reference Map





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<div>Mist Resiliency Project</div>	<div><div> Site Boundary</div><div>Delineated Features</div><div> Field Delineated Stream</div><div> Field Delineated Wetland</div><div> Culvert</div><div>Impacts</div><div> Temporary Impact</div></div>	<div>Reference Map</div> 
<div>Figure J-2.9 Delineated Wetlands and Waters</div> <div>COLUMBIA COUNTY, OREGON</div>	<div> TETRA TECH  NW Natural</div>	



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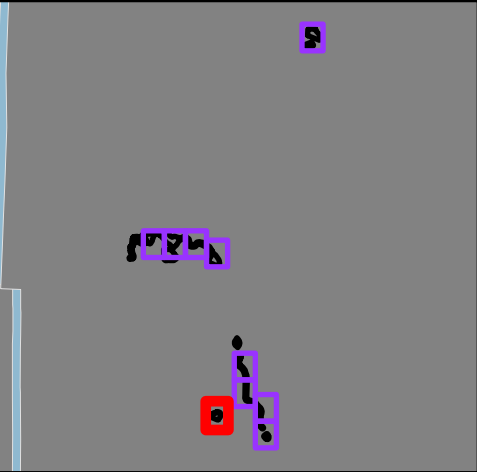
**Mist Resiliency Project**

**Figure J-2.10  
Delineated Wetlands  
and Waters**

COLUMBIA COUNTY, OREGON

- Site Boundary
- Delineated Features
- Field Delineated Wetland
- Culvert
- Impacts
- Temporary Impact

**Reference Map**





# **Attachment J-1: Wetlands and other Waters Delineation Report**

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# **Mist Resiliency Project Wetland Delineation Report**

**Prepared For**



**NW Natural**

**Prepared By**



**Tetra Tech, Inc.**

**February 2024**

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## Acronyms and Abbreviations

FAC	Facultative [indicator code]
FACU	Facultative Upland [indicator code]
FACW	Facultative Wetland [indicator code]
LRR	Land Resource Region
Manual	Wetlands Delineation Manual, Technical Report Y-87-1
NHD	National Hydrography Dataset
NI	No Indicator [indicator code]
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OAR	Oregon Administrative Rules
OBL	Obligate [indicator code]
PEM	Palustrine, Emergent
PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated
PFO	Palustrine, Forested
PFOA	Palustrine, Forested, Temporarily Flooded
Project	Mist Resiliency Project
PSS	Palustrine Scrub-Shrub
PSSC	Palustrine, Scrub-Shrub, Seasonally Flooded
PUBFh	Palustrine, Unconsolidated Bottom, Semi-permanently Flooded, Impounded
PUBHx	Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded
SDAM	Streamflow Duration Assessment Method for the Pacific Northwest
Tetra Tech	Tetra Tech, Inc.
UPL	Upland [indicator code]
WETS	Climate Analysis for Wetlands Tables

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## 1.0 Introduction

NW Natural (NWN) is proposing the Mist Resiliency Project (Project) near Mist, Oregon (Figure 1). The purpose of the Project is to amend the Mist Underground Natural Gas Storage Site Certificate for its underground natural gas storage facility in Columbia County, Oregon. NWN proposes to upgrade and replace the two existing natural gas compressors; upgrade and replace the existing electric power supply line from its origin at Highway 202 to Miller Station; develop the existing Newton, Medicine, Crater, and Stegosaur underground storage reservoirs; install injection and withdrawal wells; install three reciprocating engine driven natural gas compressors; install two natural gas dehydration equipment systems; and construct a control and operations building.

NWN contracted Tetra Tech, Inc. (Tetra Tech) to perform a wetland delineation in the vicinity of the proposed excavation work areas (Study Area) that will be potentially impacted by the Project. Based on the information gained from the wetland delineation, NWN designed the Project with construction methods that will have only minimal, temporary impacts to wetlands.

## 2.0 Landscape Setting and Land Use

### 2.1 Study Area

The Project Study Area is located within Columbia County, Oregon between the townships of Mist and Clatskanie. The Study Area consists of three Project Areas and their associated buffers, ranging from 100 to 200 feet, totaling approximately 240 acres. The Study Area for wetlands and other potentially jurisdictional waters encompasses all Project components that would potentially involve ground disturbance. The Project is within a highly modified forest landscape, managed for timber harvest, and consists of mixed conifer-deciduous forest, recently cleared timber lands, gravel roadways, existing buried utilities, and grassy pasture. NWN will utilize existing roads and the cleared right-of-way to access the Project during construction. Figure 2 shows the tax lots in and adjacent to the Study Area. Tax lots are listed in Table 1 below.

**Table 1. Tax Maps - Tax Lots**

<b>Tax Map</b>	<b>Tax Lot Numbers</b>
6050000	300
6050000	200
6050000	2500
6050000	2501
6050000	2600
6050000	2700
6050000	2800

Tax Map	Tax Lot Numbers
7050000	2200
7050000	3000
7050000	5100
7050000	5000
7050000	4900
7050000	4800
7050000	4700
6051500	200
6051500	900
6051500	202
6051500	300
6051500	100
6051500	ROAD
6051400	100
6051400	500
6051400	501
6051400	401
6051400	400
6051400	100
6051400	ROAD
6051400	200
6050000	2502
7051200	400
6051500	500
7051200	100
7050000	4500
7051200	ROAD
7051200	500
7051200	401
7051200	100
7050000	4701

## 2.2 Landscape Setting

The Project is located within the Level III Coast Range Ecoregion and within the Level IV Volcanics and Willapa Hills Ecoregions (Thorson et al. 2003). In addition, the Project is within US Department of Agriculture Land Resource Region (LRR) A, Northwest Forest, Forage, and Specialty Crop Region (NRCS 2006). The LRR A, Northwest Forest, Forage, and Specialty Crop Region is equivalent to the LRR A Northwest Forests and Coast Region in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (WMVC Supplement; USACE 2010).

The Project is primarily situated within two sub-watersheds of the Northern Oregon Coastal Watershed: Calvin Creek-Nehalem River and Lindgren Creek-Nehalem River, while the northernmost area of the project is located within one Lower Columbia sub-watershed: Lower Clatskanie River (6th level HUC; Oregon Explorer 2021). Plant species' names and associated wetland indicator status ratings are from the 2020 National Wetland Plant List (USACE 2020a). The following wetland indicator ratings are ordered according to the percent likelihood of the plant occurring in wetlands, from most likely to least likely: Obligate (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Upland (UPL). Species with an indicator of NI (No Indicator) refers to plants that are not listed in the wetland plant list and are thereby considered to be Upland plants.

Reed canary grass (*Phalaris arundinacea*, FACW) was the predominant species in the grassy pasture in the southern portion of the Project. Red alder (*Alnus rubra*, FAC), cascara (*Frangula purshiana*, FAC), and Himalayan blackberry (*Rubus armeniacus*, FAC) were common throughout the Project and documented in both upland and wetland sample plots. Dominant tree species in the project study area also included Oregon ash (*Fraxinus latifolia*, FACW), Douglas fir (*Pseudotsuga menziesii*, FACU), Scouler's willow (*Salix scouleriana*, FACW), and Western red cedar (*Thuja plicata*, FAC).

The most prevalent shrub species in the Project area included snowberry (*Symphoricarpus albus*, FACU), Douglas' Meadowsweet (*Spiraea douglasii*, FACW), vine maple (*Acer circinatum*, FAC), Oregon cherry (*Prunus emarginata*, FACU), Pacific ninebark (*Physocarpus capitatus*, FACW), Pacific dogwood (*Cornus nuttallii*, FACU), beaked hazelnut (*Corylus cornuta*, FACU), Nootka rose (*Rosa nutkana*, FAC), trailing blackberry (*Rubus ursinus*, FACU), cutleaf blackberry (*Rubus laciniatus*, FACU), and oneseed hawthorne (*Crataegus monogyyna*, FAC).

Herbaceous vegetation commonly observed in upland areas in the Project Study Area included sword fern (*Polystichum munitum*, FACU), field horsetail (*Equisetum arvense*, FAC), common ladyfern (*Athyrium filix-femina*, NI), white clover (*Trifolium repens*, FAC), creeping bentgrass (*Agrostis stolonifera*, FAC), field-meadow foxtail (*Alopecurus pratensis*, FAC), and velvet grass (*Holcus lanatus*, FAC).

## 2.3 National Wetlands Inventory, Local Wetlands Inventory, Natural Resources Conservation Service Soils, and National Hydrography Dataset Mapped Features

Prior to field work, Tetra Tech reviewed the National Wetlands Inventory (NWI), Local Wetlands Inventory, the National Hydrography Dataset (NHD), Natural Resources Conservation Service (NRCS) hydric soils data, and aerial photographs to identify potential wetlands and other waters.

### 2.3.1 National Wetland Inventory and Local Wetlands Inventory Data

Desktop review of NWI data determined that seven NWI wetlands intersect the Study Area. There is one mapped NWI palustrine, emergent, persistent, seasonally flooded, excavated (PEM1C) wetland that is bordered by a palustrine, scrub-shrub, seasonally flooded (PSSC) wetland just to the north of where the Project study area splits off from Highway 202. Another NWI mapped PSSC wetland is located roughly a third of a mile north, adjacent to a palustrine, forested, temporarily flooded (PFOA) wetland. In another area of the Project, a few miles north, a mapped riverine, intermittent, streambed, seasonally flooded (R4SBC) wetland runs along and through the Project study area. This mapped R4SBC wetland is broken up by a palustrine, unconsolidated bottom, semi-permanently flooded, impounded (PUBFh) wetland which skims the edge of the study area. In the most northern part of the Project study area there is a palustrine, unconsolidated bottom, permanently flooded, excavated wetland (PUBHx) at the southeastern edge of the study area. Lastly, in the most southwestern portion of the Project study area there is another PSSC wetland. Figure 3 shows the NWI map layered over the Project study area. There is no Local Wetland Inventory available at this location (ODSL 2023).

### 2.3.2 Hydric Soils Data

Four hydric rated soil map units are mapped in one of the Study Area sites (Figure 4):

- 20 – Eilersten silt loam;
- 32—McNulty silt loam;
- 37 – Natal silty clay loam; and
- 58 – Treharne silt loam (NRCS 2016, NRCS 2021a, NRCS 2021b).

Table 2 below summarizes the soil types found in the project study area.

**Table 2. Soils Mapped in the Project Study Area**

Map Unit Symbol	Map Unit Name	Hydric Rating
24	Hapludalfs-Udifuvents complex	No
20	Eilersten silt loam	Yes
32	McNulty silt loam	Yes

Map Unit Symbol	Map Unit Name	Hydric Rating
36D	Murnen silt loam, 3 to 30 percent slopes	No
37	Natal silty clay loam	Yes
3E	Alstony gravelly loam, 30 to 60 percent north slopes	No
50E	Scaponia-Braun silt loams, 30 to 60 percent south slopes	No
56D	Tolke silt loam, 5 to 30 percent slopes	No
58	Treharne silt loam	Yes
5D	Anunde silt loam, 3 to 30 percent slopes	No
7D	Braun-Scaponia silt loams, 5 to 30 percent slopes	No
9F	Braun-Scaponia silt loams, 60 to 90 percent south slopes	No

### 2.3.3 National Hydrography Dataset

Five NHD streams are mapped within the Study Area. One is an unnamed intermittent waterway that overlaps one of the mapped R4SBC wetlands near the center of the Project. Another unnamed NHD feature overlaps the PUBHx wetland in the northern portion of the Project area. The other three mapped NHD features are perennial waterways, two of which are named. The third unnamed perennial feature is a continuation of the intermittent waterway, and overlaps another mapped NWI R4SBC wetland (NHD 2017).

One of the named NHD streams, Lindgren Creek, runs through the southern end of the Project, along the northern end of the mapped NWI PEM1C wetland. The other named NHD stream, Lyons Creek, is a perennial waterway that crosses through the Project along the NWI mapped PFOA wetland (NHD 2017, NWI 2020).

## 3.0 Site Alterations

Site alterations are activities that would directly or indirectly impact wetlands and other waters in such a way that the function or area of the feature changes significantly. A significant alteration would be one that renders the feature non-functioning, or one that changes the feature boundaries. The dominant land use adjacent to the Study Area is timber harvest, gravel logging roads, state and county highways, and an underground natural gas storage facility. Activity associated with these practices have likely affected the geographic size or the hydroperiod of wetlands and other waters.

## **4.0 Precipitation Data and Analysis**

Average historical monthly and daily precipitation data for the periods preceding and during field work were obtained from the National Oceanic and Atmospheric Administration's National Weather Service (Table 3, Table 4; NOAA 2022). The closest geographical location with an NRCS WETS table is Clatskanie, Oregon, approximately 5 miles northeast of the project area (NOAA 2022, NOAA 2023).

**Table 3. Precipitation Data for Fall 2022 Site Visit – Current and Historic (Inches)**

<b>Precipitation</b>	<b>Oct. 2021</b>	<b>Nov. 2021</b>	<b>Dec. 2021</b>	<b>Jan. 2022</b>	<b>Feb. 2022</b>	<b>Mar. 2022</b>	<b>Apr. 2022</b>	<b>May 2022</b>	<b>June 2022</b>	<b>July 2022</b>	<b>Aug. 2022</b>	<b>Sept. 2022</b>	<b>Total</b>
Recorded Monthly Precipitation Totals <sup>1</sup> (inches); (Clatskanie, OR)	7.41	10.81	10.54	8.75	3.87	4.80	7.42	4.89	2.40	0.00	0.00	0.20	61.09
WETS Average Monthly Precipitation <sup>2</sup> (inches); (Clatskanie, OR)	4.41	8.71	9.17	8.32	6.07	6.09	4.07	2.70	1.80	0.67	0.83	2.21	55.05
Recorded Precipitation Relative to WETS Average Monthly Precipitation	168%	124%	115%	105%	64%	79%	182%	181%	133%	0%	0%	9%	111%
Normal Monthly Range of Precipitation <sup>2</sup> (inches)	2.55- 5.37	5.98- 10.39	6.63- 10.81	5.58- 9.96	4.16- 7.24	4.38- 7.19	2.93 - 4.65	1.74- 3.25	1.26- 2.13	0.23- 0.76	0.33- 1.00	2.21- 0.79	0.23- 10.81
1. National Weather Service, Clatskanie, OR Climate Station. 2. WETS Table for Clatskanie, OR, years 1971-2022.													

**Table 4. Precipitation Data for Fall 2023 (Winter 2024) Site Visit – Current and Historic (Inches)**

<b>Precipitation</b>	<b>Oct. 2022 2023</b>	<b>Nov. 2022 2023</b>	<b>Dec. 2022 2023</b>	<b>Jan. 2023</b>	<b>Feb. 2023</b>	<b>Mar. 2023</b>	<b>Apr. 2023</b>	<b>May 2023</b>	<b>June 2023</b>	<b>July 2023</b>	<b>Aug. 2023</b>	<b>Sept. 2023</b>	<b>Total</b>
Recorded Monthly Precipitation Totals <sup>1</sup> (inches); (Clatskanie, OR)	3.34 3.57	9.16 6.60	7.88 10.84	4.45	4.05	4.05	6.55	0.81	0.63	0.14	0.33	2.26	43.65
WETS Average Monthly Precipitation <sup>2</sup> (inches); (Clatskanie, OR)	4.40	8.71	9.17	8.25	6.03	6.05	4.11	2.66	1.77	0.66	0.82	2.21	54.84
Recorded Precipitation Relative to WETS Average Monthly Precipitation	76% 81%	105% 75%	86% 118%	54%	67%	67%	159%	30%	36%	21%	40%	102%	80%
Normal Monthly Range of Precipitation <sup>2</sup> (inches)	2.55- 5.34	5.98- 10.39	6.63- 10.81	5.53- 9.87	4.14- 7.19	4.36- 7.14	2.94- 4.86	1.70- 3.21	1.23- 2.11	0.23- 0.75	0.33- 0.98	0.80- 2.66	0.23- 10.81
1. National Weather Service, Clatskanie, OR Climate Station. 2. WETS Table for Clatskanie, OR, years 1971-2023.													

## **4.1 Fall 2022 Site Visit**

For the 10-day span preceding field work (which began on September 27, 2022), zero inches of precipitation were measured (NOAA 2022). There was no recorded precipitation for September 2022, through the 27th of the month, nor was there any recorded precipitation in July or August 2022. Total accumulated precipitation between October 2021 and September 2022 was 111 percent of average due to above average precipitation in October, November, and December 2021, along with January, April, May, and June 2022.

Higher than average precipitation levels followed by no precipitation until after field work had begun did not affect the delineation of waters, as determinations were made using indicators described in the Streamflow Duration Assessment Method for the Pacific Northwest (SDAM; Nadeau 2015). The SDAM relies on multiple indicators that are independent of hydrology.

## **4.2 Fall 2023 Site Visit**

For the 10-day span preceding field work (which began on September 26, 2023), 0.32 inches of precipitation were measured (NOAA 2023). During the survey period between September 26 to 28, there was 0.82 inches of precipitation. Total accumulated precipitation between October 2022 and September 2023 was 80 percent of average due to below average precipitation in October and December 2022, along with January, February, March, May, June, July, and August 2023.

Below average precipitation level, followed by precipitation during field work did not affect the delineation of waters, as determinations were made using indicators described in the Streamflow Duration Assessment Method for the Pacific Northwest (SDAM; Nadeau 2015). The SDAM relies on multiple indicators that are independent of hydrology.

## **4.3 Winter 2023 Site Visit**

For the 10-day span preceding field work (which began on September 26, 2023), 0.32 inches of precipitation were measured (NOAA 2023). During the survey period between September 26 to 28, there was 0.82 inches of precipitation. Total accumulated precipitation between October 2022 and September 2023 was 80 percent of average due to below average precipitation in October and December 2022, along with January, February, March, May, June, July, and August 2023.

This site visit was conducted as a hydrology check to verify the boundaries of WET-18. Datasheets are provided and the boundary was expanded based on saturation and a water table within the first 12 inches of the pit. Several pits were dug and left open for a minimum of 15 minutes to observe hydrology. None of the pit locations had standing water, but there was standing water in the pasture adjacent to the wooded area.



## 5.0 Methods

### 5.1 Pre-field Work

In preparation for field work, Tetra Tech reviewed NWI, NHD, hydric soils data, and aerial photographs to identify potential wetlands and other waters, as described in Section 2.3. Tetra Tech prepared digital field maps with these data and uploaded these maps onto a Samsung Android data collection tablet to assist field staff in identifying the locations of probable wetlands and non-wetland waters within or adjacent to the Project Study Area.

Wetland and surface water data were also obtained from the Oregon Wetlands Database, which includes NWI and miscellaneous wetland mapping by state and federal agencies, non-governmental organizations, academia, and consultants, and from the NHD (NHD 2017, NWI 2020). Soils data were also obtained from the NRCS Web Soil Survey (NRCS 2021b). Tetra Tech used high-resolution ESRI aerial imagery captured during 2017 because it provided recent, 1 meter or better resolution satellite imagery taken during the growing season (ESRI 2017).

The following guidance documents and procedures were reviewed:

- The WMVC Supplement (USACE 2010);
- Wetlands Delineation Manual, Technical Report Y-87-1 (the Manual; USACE 1987);
- Navigable Waters Protection Rule (USACE 2020b);
- SDAM (Nadeau 2015);
- Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979);
- Oregon Administrative Rule (OAR) 141-090, Administrative Rules for Wetland Delineation Report Requirements and for Jurisdictional Determinations for the Purpose of Regulating Fill and Removal within Waters of the State; and

### 5.2 Field Work

Field investigations for the delineation of wetlands and other waters included pedestrian surveys within the Project Study Area. Tetra Tech conducted the field delineation September 27, 2022, September 29 and 30, 2022, October 4 to 6, 2022, October 10 to 12, 2022, September 26 to 28, 2023, and December 20, 2023. The desktop wetland data were used to focus the wetland delineations, while the desktop surface water data were used to focus the non-wetlands water evaluation, as necessary. The Study Area has been changed and reduced because of Project layout changes. Therefore, names of features and sample plots may not be sequential. Currently, only minor temporary impacts are proposed to wetlands within the Study Area.

### 5.2.1 Wetland Delineations

Wetland presence was determined per the methods in the Manual and the WMVC Supplement. Wetland indicator status for plants was determined using the 2020 National Wetland Plant List (USACE 2020a).

- Sample plots were established in all features identified by NWI data (Appendix A; NWI 2020). The sample plot was located within each feature that Tetra Tech judged most likely to have wetland characteristics (i.e., the lowest or most green place).
- Paired sample plots were established in logical locations to document wetland boundaries.
- The number of sample plots established in a wetland was commensurate with the size and complexity of the wetland.
- Photographs were taken to document wetland and upland conditions at the sample plots, and to document the wetland boundary (Appendix B).
- Wetland boundaries were recorded as a polygon using a survey grade Juniper Geode GPS unit. Details on mapping methods are presented in Section 8.0.

### 5.2.2 Non-wetland Water Evaluations

- The ordinary high water mark was determined using criteria such as change in the soil character or vegetation, sediment, litter or debris deposition, and scour lines.
- The centerlines of non-wetland waters less than 6 feet wide were recorded as line features and buffered to the stream width determined in the field.
- Non-wetland waters with a width greater than 6 feet were recorded as two line features, mapping both the right and left banks of the stream's ordinary high water lines.
- Photographs were taken to document streams, ditches, and upland conditions at locations that NHD mapped as streams. The wetland and waters photolog is provided in Appendix B.

## 6.0 Description of Wetlands and Non-wetland Waters

### 6.1 Wetlands

Wetlands delineated within the Project included palustrine emergent (PEM), palustrine forested (PFO), and palustrine scrub-shrub (PSS) wetlands, or were some combination of the classifications listed above (Table 5). Dominant herbaceous species found in delineated wetlands include slough sedge (*Carex obnupta*, OBL), soft rush (*Juncus effusus*, FACW), Reed canary grass (*Phalaris arundinacea*, FACW), and water parsley (*Oenanthe sarmentosa*, OBL). Wetlands in the project also commonly included Douglas' Meadowsweet (*Spiraea douglasii*, FACW), Pacific ninebark (*Physocarpus capitatus*, FACW), Oregon ash (*Fraxinus latifolia*, FACW), and Scouler's willow (*Salix*

*scouleriana*, FACW). Many delineated wetlands continued outside the boundaries of the Project. WET-03 and WET-04 are separated by islands of upland within the Project, although they are hydrologically connected outside of the Project (Table 5). All wetlands and non-wetland waters are mapped in Figure 5.

Table 5. Wetlands Mapped in the Project Study Area

Wetland Name	HGM (subclass) Wetland Type	Dominant Cowardin Class	Acres	Figure #	General Conditions
WET-01	Depressional (Outflow)	PEM	0.02	5.15.2	Wetland located between gravel road and laydown yard. Dominant vegetation spreading rush ( <i>Juncus patens</i> , FACW) and creeping bentgrass ( <i>Agrostis stolonifera</i> , FAC).
WET-03	Slope (Valley)	PFO	1.09	5.14.3 5.14.4	Wetland location ranges from in a swale about eight feet past the ends of three culverts, near the toe of fill on a slope of the mainline road, the side of a vegetated mound, and a swale off of a logging road. Both polygons are hydrologically connected outside of the study area. Majority of wetland was forested with some open patches of shrubs. Dominant vegetation was Sitka willow ( <i>Salix sitchensis</i> , FACW), western redcedar ( <i>Thuja plicata</i> , FAC), slough sedge, red alder ( <i>Alnus rubra</i> , FAC), pacific willow ( <i>Salix lasiandra</i> , FACW), pacific ninebark ( <i>Physocarpus capitatus</i> , FACW), western dogwood ( <i>Cornus alba</i> var. <i>occidentalis</i> , FACW), Scouler's willow ( <i>Salix scouleriana</i> , FAC), cascara ( <i>Frangula purshiana</i> , FAC), and reed canary grass.
WET-04	Depressional (Outflow)	PSS	.048	5.14.3 5.14.4	Wetland is approximately four to six feet lower than surrounding upland within a swale. Both polygons are hydrologically connected outside of the study area. Wetland contains a culvert outflow into dense reed canary grass. Other dominant vegetation consisted of spotted touch-me-not ( <i>Impatiens capensis</i> , FACW), and water parsley ( <i>Oenanthe sarmentosa</i> , OBL), Oregon ash ( <i>Fraxinus latifolia</i> , FACW), and field meadow-foxtail ( <i>Alopecurus pratensis</i> , FAC).
WET-05	Flats	PEM	0.73	5.14.1 5.14.2 5.14.3	Reed canary grass field along west side of road at the toe of a slope. Other vegetation observed was slough sedge, reed canary grass, soft rush, creeping bentgrass, Oregon crabapple ( <i>Malus fusca</i> , FACW), Oregon ash, and Douglas' meadowsweet ( <i>Spiraea douglasii</i> , FACW).
WET-06	Depressional (Outflow)	PEM	0.01	5.14.3	Wetland is contained in the south end of an excavated roadside ditch. Dominant vegetation present in the wetland was slough sedge, soft rush, and Canada thistle ( <i>Cirsium arvense</i> , FAC).
WET-07a	Riverine (Flow-through)	PEM	0.002	5.14.1	Wetland is on a vegetated gravel bar below the ordinary high-water line of ST-01. This wetland is hydrologically connected underground to WET-07b. Dominant vegetation consisted of red-tinge bulrush ( <i>Scirpus microcarpus</i> , OBL) and reed canary grass.

Wetland Name	HGM (subclass) Wetland Type	Dominant Cowardin Class	Acres	Figure #	General Conditions
WET-07b	Riverine (Flow-through)	PEM	0.01	5.14.1	Wetland is on a vegetated gravel bar below the ordinary high-water line of ST-01. This wetland is hydrologically connected underground to WET-07a. Vegetation consisted of stinging nettle ( <i>Urtica dioica</i> , FAC), reed canary grass, water parsley, and tall manna grass ( <i>Glyceria elata</i> , FACW).
WET-08	Flats	PSS	0.06	5.14.1	Low wetland follows edge of upland area north of logging road and west of ST-01. Approximately three feet below road was vegetation such as Oregon crabapple, slough sedge, climbing nightshade ( <i>Solanum dulcamara</i> , FAC), creeping buttercup ( <i>Ranunculus repens</i> , FAC), and water parsley. Wetland boundary follows vegetation change and gradual elevation change with additional hydric soil confirmation.
WET-09	Flats	PEM	0.06	5.11.1	Wetland is located within a potentially disturbed site on a terrace between a larger logged hillside and a dense forest. Wetland vegetation consisted of soft rush and slough sedge.
WET-10	Slope (Headwater)	PEM	0.04	5.11.1	Wetland vegetated and partially channelized turning into ST-02 in the middle of the survey corridor. Dominant wetland vegetation consisted of cursed buttercup ( <i>Ranunculus sceleratus</i> , OBL) and water parsley.
WET-11	Flats	PSS	0.30	5.12.1	Wetland located on a lower terrace of a logged hillside and is in an existing gas line corridor. Dominant vegetation consisted of Scouler's willow, Oregon ash, slough sedge, and reed canary grass.
WET-12	Slope (Headwater)	PEM	0.14	5.12.1 5.14.1	Wetland is located on a grassy toe slope lowland near a parking pullout. Dominant vegetation observed within the wetland was reed canary grass and trailing blackberry ( <i>Rubus ursinus</i> , FACU).
WET-15a	Slope (Headwater)	PEM	0.05	5.7.1	Wetland is in the channel of a shallow ravine. Dominant vegetation observed was soft rush, American brooklime ( <i>Veronica americana</i> , OBL), and red-tinge bulrush.
WET-15b	Slope (Headwater)	PFO	0.01	5.7.1	Wetland is a culvert outflow downhill of WET-15a. Dominant vegetation consisted of red alder, western skunk cabbage ( <i>Lysichiton americanus</i> , OBL), sword fern ( <i>Polystichum munitum</i> , FACU), stinging nettle, and vine maple ( <i>Acer circinatum</i> , FAC).
WET-16	Flats	PEM	0.13	5.14.2	Wetland slightly uphill of road and is lower in elevation than to the northwest and southeast where Douglas fir ( <i>Pseudotsuga menziesii</i> , FACU) and western redcedar grow. Wetland dominated by soft rush.

Wetland Name	HGM (subclass) Wetland Type	Dominant Cowardin Class	Acres	Figure #	General Conditions
WET-17	Flats	PEM	0.02	5.1	Wetland is made up of problematic shallow soils in a gravel laydown yard. Dominant vegetation was soft rush and red alder.
WET-18	Depressional (Outflow)	PFO	2.64	5.13.1	Depressional wetland partially forested, scrub-shrub, and emergent vegetation classes present. Wetland includes a naturally vegetated portion with clear breaks between hydrophytic and upland vegetation communities, and a portion that extends into an open hay field and had significantly disturbed vegetation. The wetland boundary within the hay field portion was delineated based on a combination of aerial imagery, topography, and subtle changes in vegetation community composition. Dominant vegetation included Oregon ash, Douglas' meadowsweet, reed canary grass, and soft rush.
WET-19	Depressional (Outflow)	PFO	0.02	5.13.1	Wetland depression next to culvert, bed elevation is below culvert invert. Wetland continues outside of site boundary to the northeast. Dominant vegetation included Oregon ash, pacific ninebark, water parsley, slough sedge, and Douglas' meadowsweet.
WET-21	Depressional (Closed Permanent)	PEM	0.32	5.1	Emergent wetland within an excavated pond that collects parking lot storm water runoff. Dominant vegetation included broad-leaf cattail ( <i>Typha latifolia</i> , OBL) and reed canary grass.

## 6.2 Non-wetland Waters

The non-wetland waters in the project study area consist of two perennial streams, three ephemeral streams, and four roadside ditches (Table 6). The delineated ditch features are primarily gravel bottomed and are found alongside the gravel logging roads throughout the Project. Where ditches were not bare gravel, vegetation commonly included trailing blackberry (*Rubus ursinus*, FACU), creeping bentgrass (*Agrostis stolonifera*, FAC), tansy ragwort (*Jacobaea vulgaris*, FACU), Kentucky bluegrass (*Poa pratensis*, FAC), Fuller's teasel (*Dipsacus fullonum*, FAC), and white clover (*Trifolium repens*, FAC). All ditches were found to be ephemeral.

**Table 6. Wetlands Mapped in the Project Study Area**

Feature Name	Water Type	Flow Duration	Length Feet	Width Feet	Acres	ESH	Figures
ST-01	Lindgren Creek	Perennial	501	15	0.260	Yes	5.14.1
ST-02	Incised Stream	Perennial	108	4	0.010	No	5.11.1
ST-03	Stream	Ephemeral	65	2	0.003	No	5.8
ST-05	Stream	Ephemeral	672	3	0.047	No	5.4
ST-06	Stream	Ephemeral	119	3	0.008	No	5.4
D-01	Roadside Ditch*	Ephemeral	113	1	0.003	No Fish	5.15.2
D-04	Roadside Ditch*	Ephemeral	459	1	0.111	No Fish	5.14.2
D-05	Roadside Ditch*	Ephemeral	153	1	0.004	No Fish	5.14.1
D-07	Roadside Ditch*	Ephemeral	297	2	0.014	No Fish	5.5
*Roadside Ditch is not jurisdictional based on OAR 141-085-0515(10).							

The beds and banks of the ephemeral streams are dominated by sword fern (*Polystichum munitum*, FACU), Douglas fir saplings (*Pseudotsuga menziesii*, FACU), vine maple (*Acer circinatum*, FAC), creeping barberry (*Mahonia repens*, NI), devilsclub (*Oplopanax horridus*, FAC), trailing blackberry (*Rubus ursinus*, FACU), velvet grass (*Holcus lanatus*, FAC), and piggyback plant (*Tolmiea menziesii*, FAC).

Both perennial streams had flowing water. Lindgren Creek (also named Fords Creek), delineated as ST-01 had vegetated banks and gravel bars, but no vegetation within the stream bed (Table 6).

Lindgren Creek is considered an Essential Salmonid Habitat (ESH) waterway and is a tributary to the Nehalem River. ST-02 is an unnamed tributary to Lindgren creek and is not considered ESH. The tributary originates outside of the study area to the west and is mapped as WET-10 within the study area and then becomes a narrow steep unvegetated channelized stream as it flows out of the study area to the east (Table 6).

Lyons Creek crosses the study area and is also a tributary to the Nehalem River, but is not considered ESH. There are four culverts that flow under Miller Station Road from the east to the west. It is likely that Miller Station Road was constructed over a braided system and there is not a main channel for Lyons Creek. There are no obvious bed and banks for Lyons Creek within the study area and flows through vegetated wetlands on either side of the culverts (Table 6).

## 7.0 Mapping Methods

Wetland and other waters boundaries, and sample plot locations were recorded using a Juniper Geode series GPS unit. The Geode uses Global Navigation Satellite System and Satellite Based Augmentation System technology to collect data and differentially correct positions in real-time, which typically results in positional error of less than 1 meter (Juniper Systems 2019) under ideal conditions. During the site visit, GPS accuracy was typically less than 1 foot.

## 8.0 Results and Conclusions

The total area of potentially jurisdictional wetlands reported within the Study Area is 6.138 acres. Table 7 provides the acreage and length of the wetlands and waters delineated with the Study Area.

**Table 7. Summary**

Feature	Number of Features	Acreage	Linear Feet
Wetlands	19	6.138	–
Other Waters (Streams)	2	0.271	609
Potentially Non-Jurisdictional Ephemeral Streams	3	–	856
Potentially Non-Jurisdictional Roadside Ditches	4	–	1022

## 9.0 Disclaimer

This disclaimer is included per OAR 141-090-0035(12)(j):



This report documents the investigation, best professional judgment, and conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055, and the U.S. Army Corps of Engineers.

## 10.0 References

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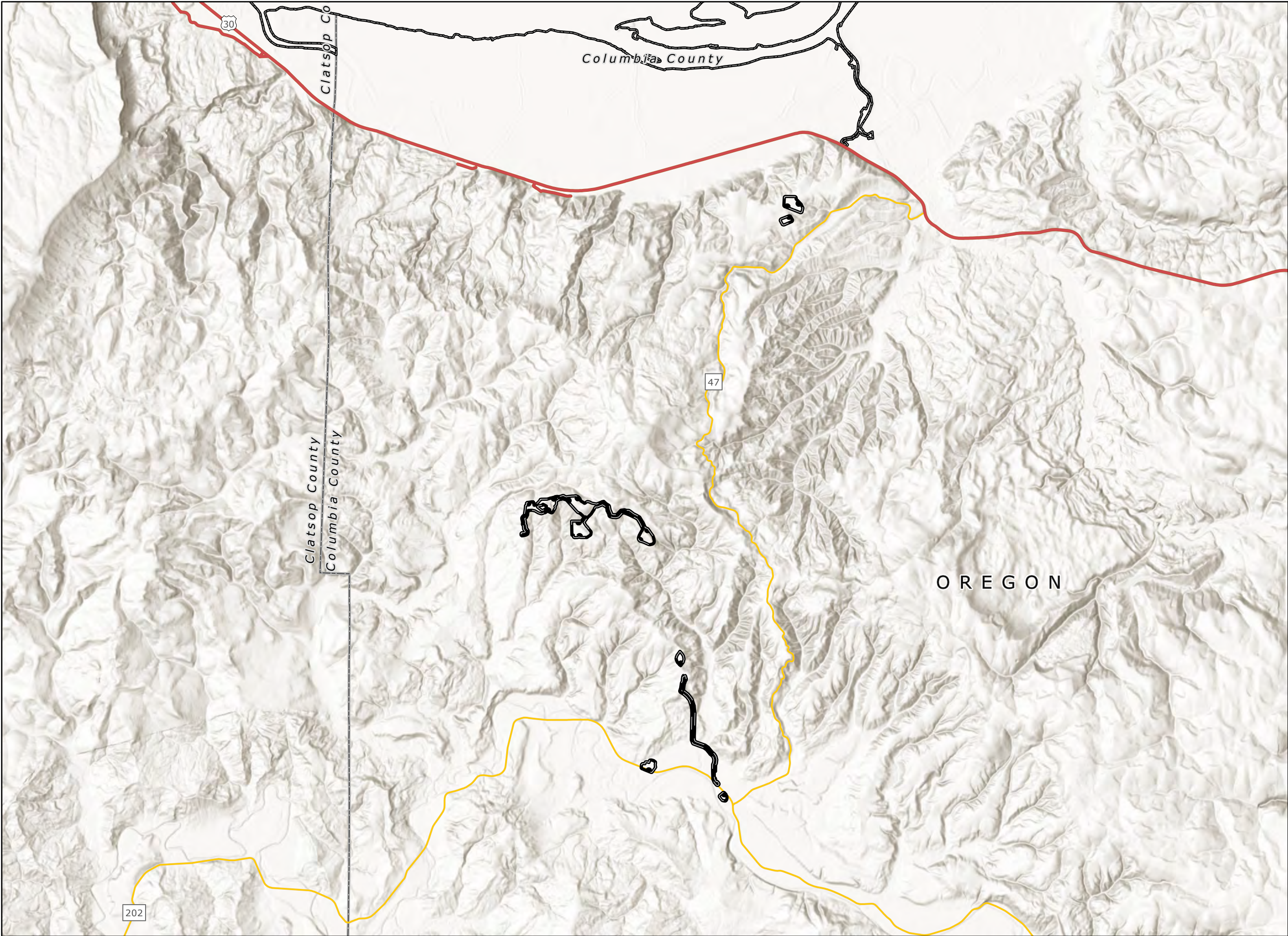
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# Figures

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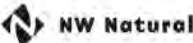


# Mist Resiliency Project

Figure 1  
Project Location

COLUMBIA COUNTY, OR

-  Site Boundary
-  US Highway
-  State Highway
-  County Boundary
-  State Boundary



Data Sources

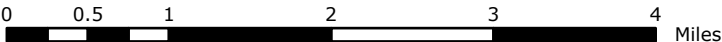
Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topographic



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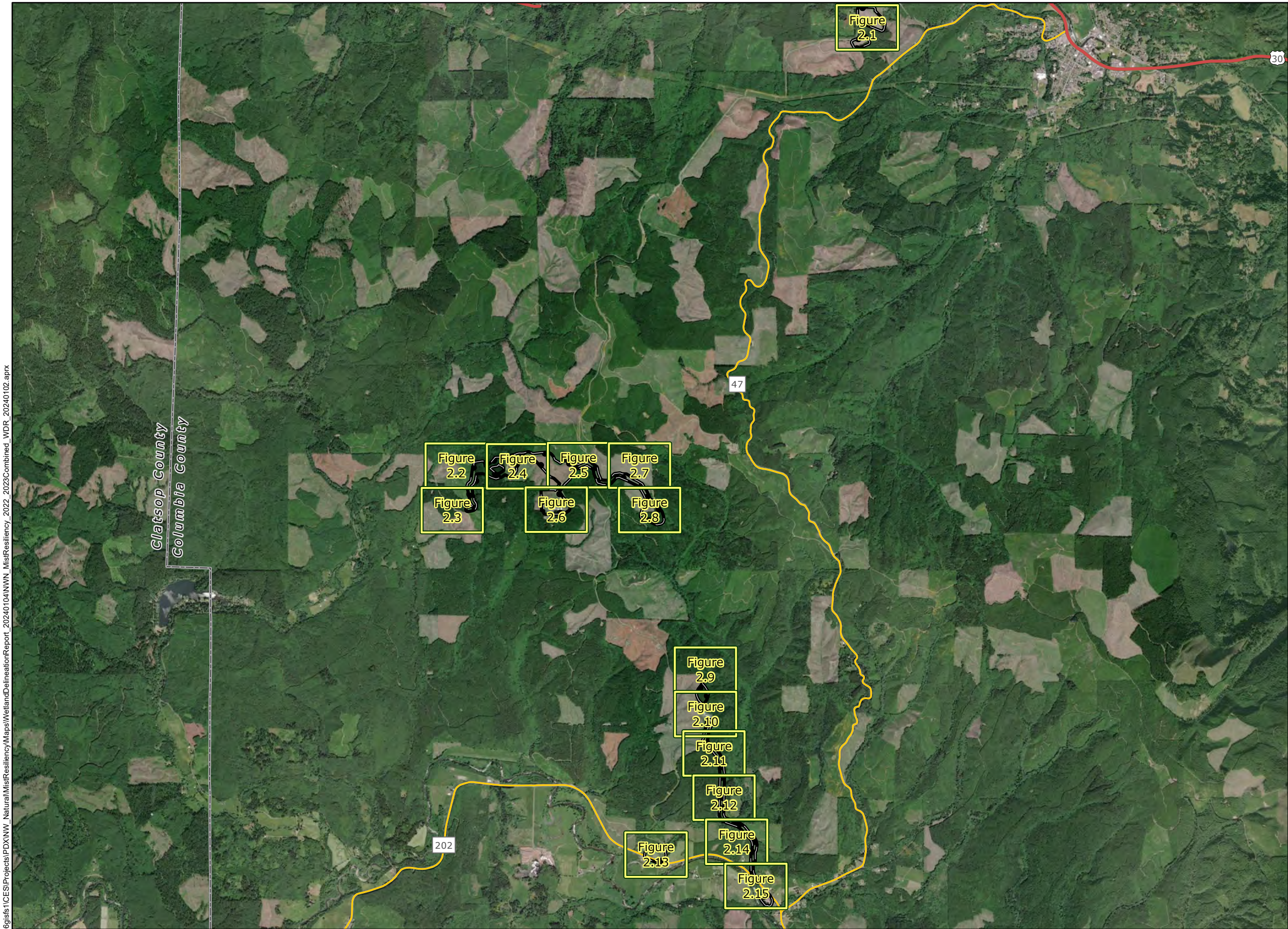
WGS 1984 UTM Zone 10N



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
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# Mist Resiliency Project

## Figure 2 Tax Lot Index Map

COLUMBIA COUNTY, OR

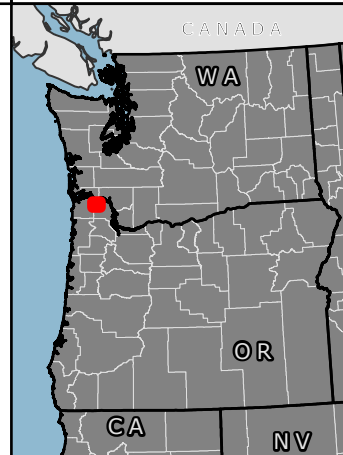
-  Site Boundary
-  Map Grid
-  US Highway
-  State Highway
-  County Boundary



Data Sources

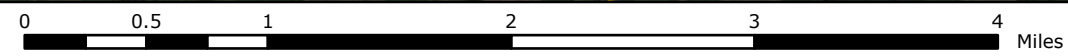
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots

Reference Map



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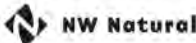


# Mist Resiliency Project

Figure 2.1  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

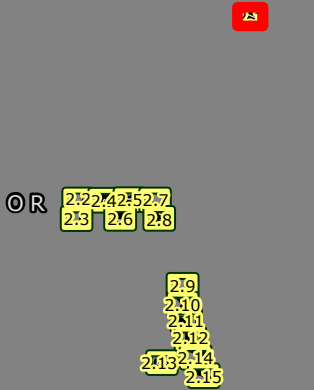
-  Site Boundary
-  Taxlot Boundary
-  Section
-  Township
-  County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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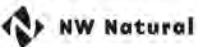


# Mist Resiliency Project

Figure 2.2  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

-  Site Boundary
-  Taxlot Boundary
-  Section
-  Township
-  County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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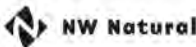


# Mist Resiliency Project

## Figure 2.3 Tax Lot Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

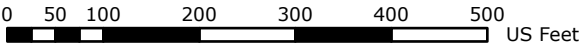
Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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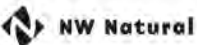


Mist Resiliency Project

Figure 2.4  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

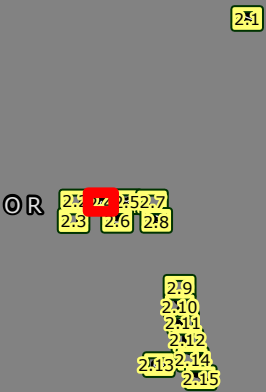
- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

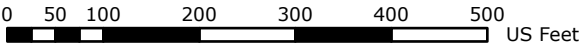
Reference Map

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ESRI-Aerial; Columbia County-Taxlots



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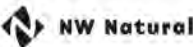


# Mist Resiliency Project

Figure 2.5  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

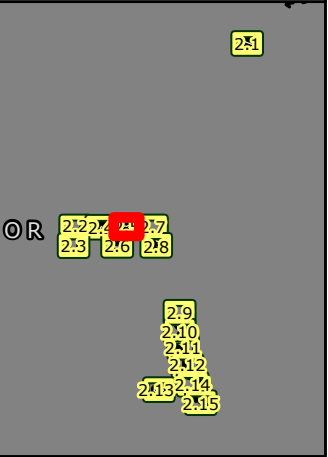
-  Site Boundary
-  Taxlot Boundary
-  Section
-  Township
-  County Boundary



Data Sources

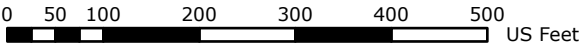
Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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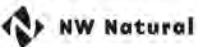


# Mist Resiliency Project

Figure 2.6  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

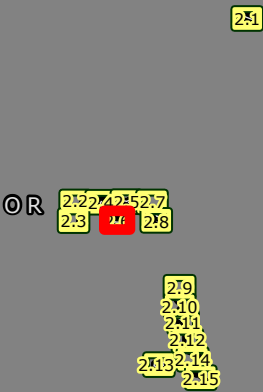
- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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# Mist Resiliency Project

Figure 2.7  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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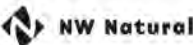


# Mist Resiliency Project

Figure 2.8  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

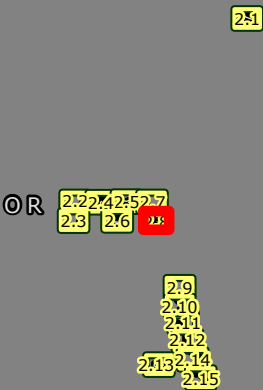
-  Site Boundary
-  Taxlot Boundary
-  Section
-  Township
-  County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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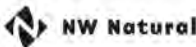


# Mist Resiliency Project

## Figure 2.9 Tax Lot Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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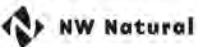


# Mist Resiliency Project

Figure 2.10  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

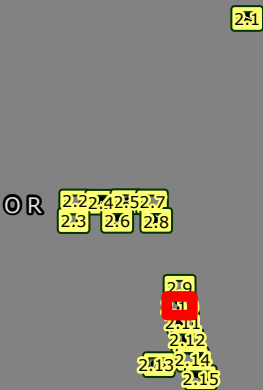
- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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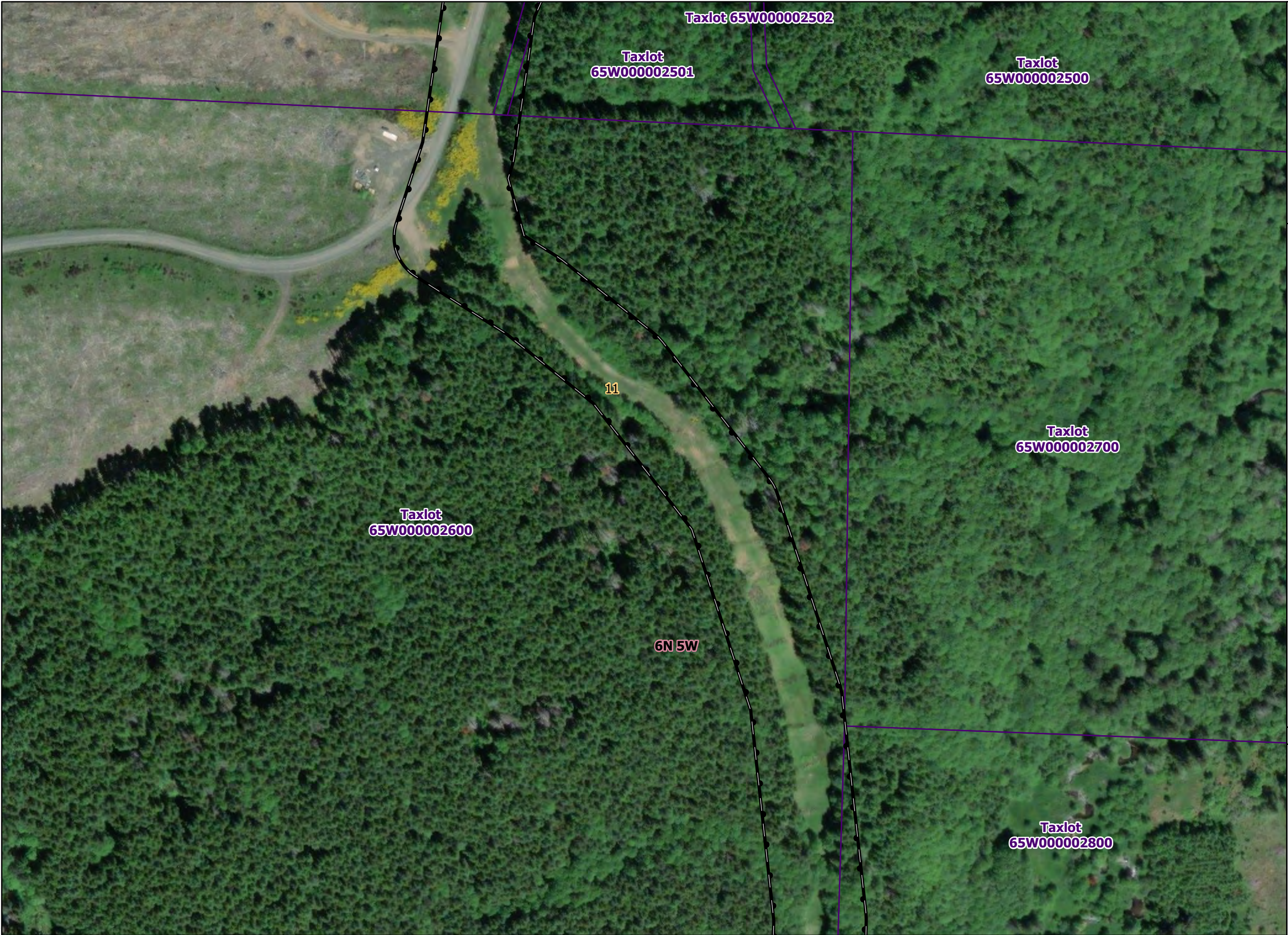
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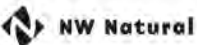


# Mist Resiliency Project

Figure 2.11  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

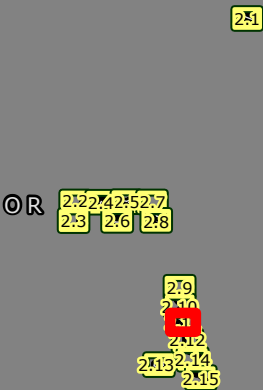
- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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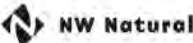


Mist Resiliency Project

Figure 2.12  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

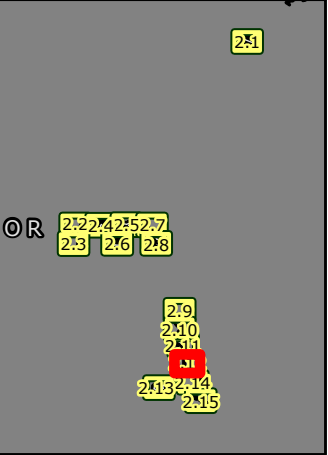
- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

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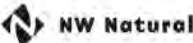


Mist Resiliency Project

Figure 2.13  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

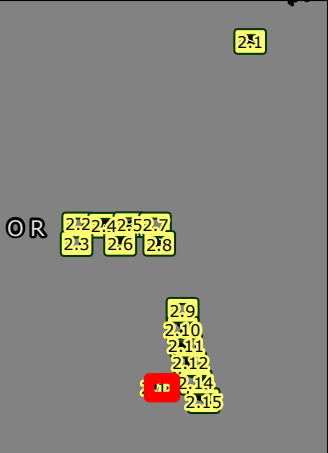
- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



1:2,400

WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

## Figure 2.14 Tax Lot Detail Map

COLUMBIA COUNTY, OR

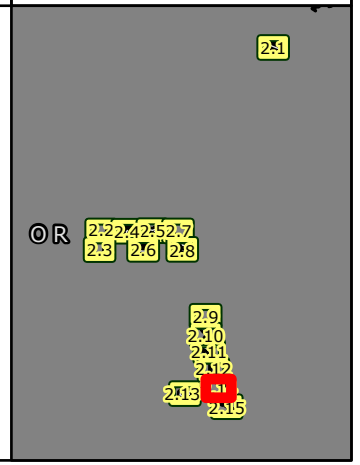
- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources

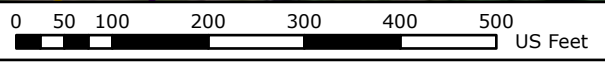
Reference Map

NWN-Project Infrastructure: Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots



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WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

Figure 2.15  
Tax Lot Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Taxlot Boundary
- Section
- Township
- County Boundary



Data Sources	Reference Map
NWN-Project Infrastructure: Tiger-Roads; ESRI-Aerial; Columbia County-Taxlots	



1:2,400

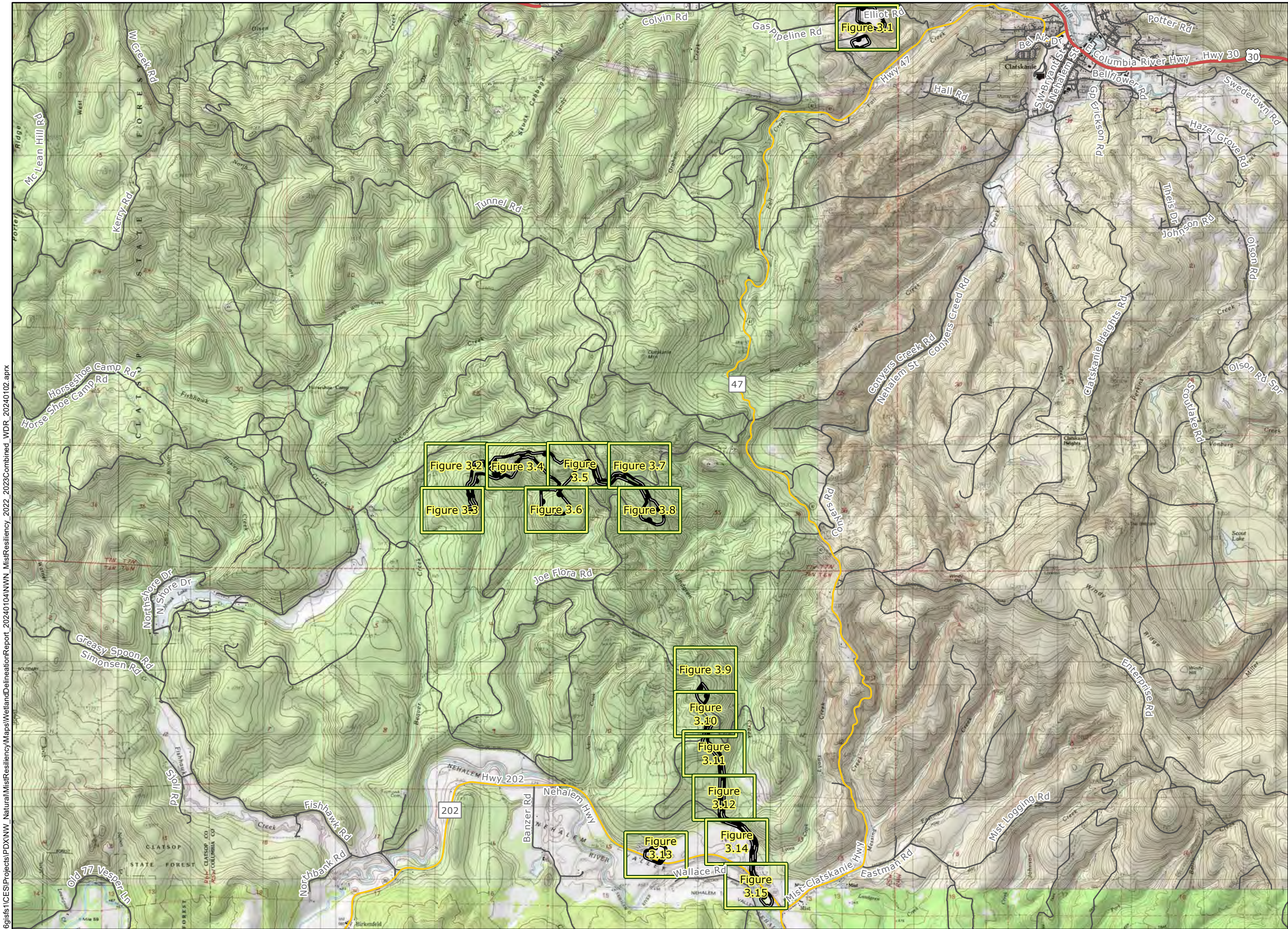
WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION



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# Mist Resiliency Project

## Figure 3 National Wetlands Inventory Index Map

COLUMBIA COUNTY, OR

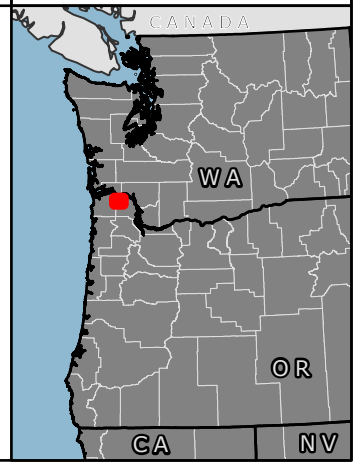
- Site Boundary
- Map Grid
- US Highway
- State Highway
- Local Roads
- County Boundary



Data Sources

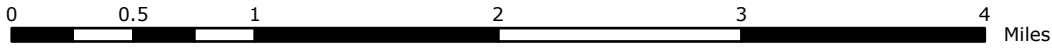
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

Reference Map



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WGS 1984 UTM Zone 10N



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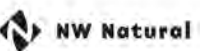


# Mist Resiliency Project

**Figure 3.1**  
**National Wetlands Inventory Detail Map**

COLUMBIA COUNTY, OR

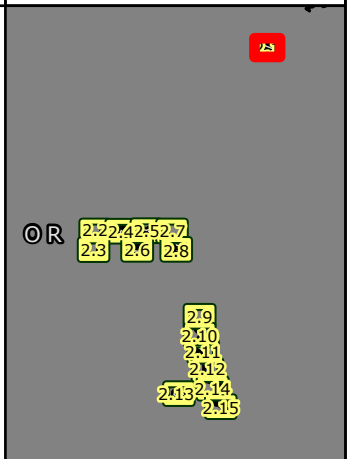
-  Site Boundary
-  County Boundary
- Wetlands and Waters**
  -  Riverine (NWI)
  -  Lake/Pond (NHD)
  -  Intermittent Stream (NHD)



Data Sources

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

Reference Map



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500  
US Feet

NOT FOR CONSTRUCTION








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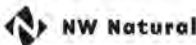


# Mist Resiliency Project

**Figure 3.2  
National Wetlands  
Inventory Detail Map**

COLUMBIA COUNTY, OR

-  Site Boundary
-  County Boundary
- Wetlands and Waters**
  -  Riverine (NWI)
  -  Intermittent Stream (NHD)
  -  Perennial Stream (NHD)



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI



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WGS 1984 UTM Zone 10N



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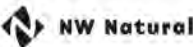


# Mist Resiliency Project

## Figure 3.3 National Wetlands Inventory Detail Map

COLUMBIA COUNTY, OR

-  Site Boundary
-  County Boundary
- Wetlands and Waters
  -  Riverine (NWI)
  -  Intermittent Stream (NHD)
  -  Perennial Stream (NHD)



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI



1:2,400

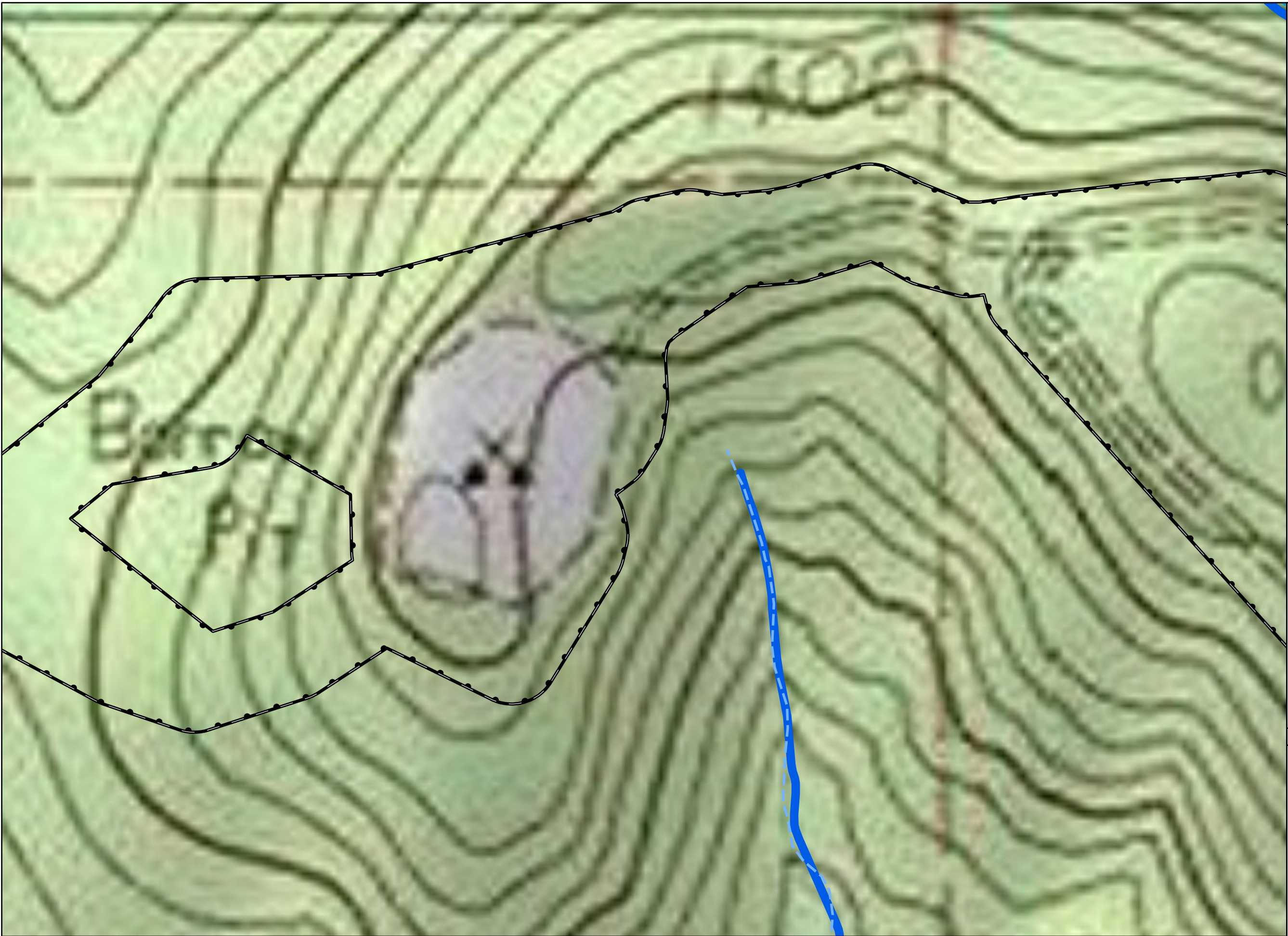
WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

**Figure 3.4**  
**National Wetlands**  
**Inventory Detail Map**

COLUMBIA COUNTY, OR

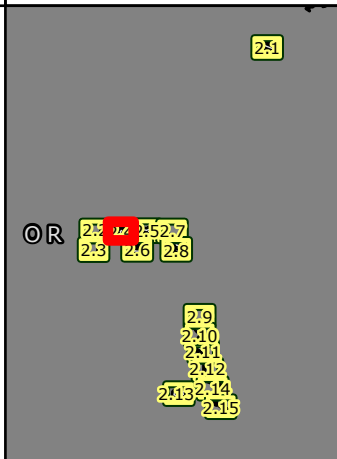
-  Site Boundary
-  County Boundary
- Wetlands and Waters
  -  Riverine (NWI)
  -  Intermittent Stream (NHD)
  -  Perennial Stream (NHD)



Data Sources

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

Reference Map



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION








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# Mist Resiliency Project

**Figure 3.5**  
**National Wetlands**  
**Inventory Detail Map**

COLUMBIA COUNTY, OR

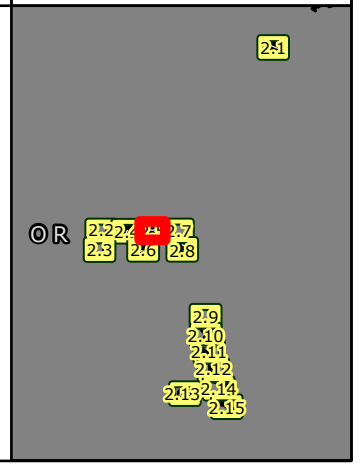
-  Site Boundary
-  County Boundary
- Wetlands and Waters
  -  Riverine (NWI)
  -  Intermittent Stream (NHD)
  -  Perennial Stream (NHD)



Data Sources

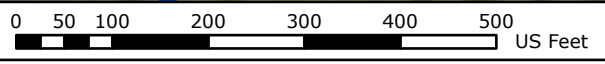
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

Reference Map



1:2,400

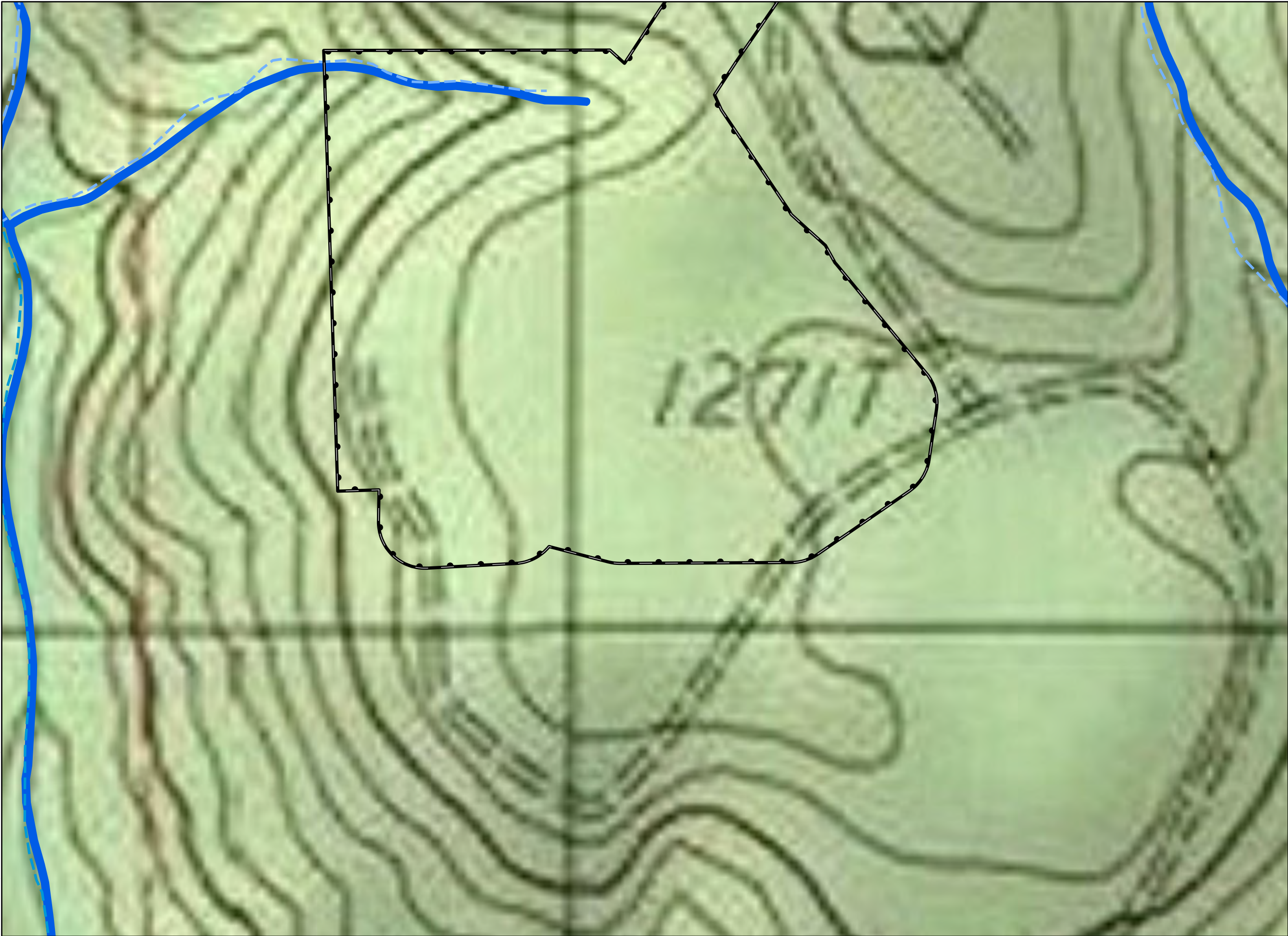
WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

## Figure 3.6 National Wetlands Inventory Detail Map

COLUMBIA COUNTY, OR

-  Site Boundary
-  County Boundary
- Wetlands and Waters
  -  Riverine (NWI)
  -  Intermittent Stream (NHD)
  -  Perennial Stream (NHD)



Data Sources

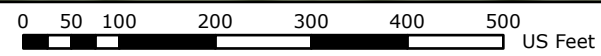
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

Reference Map



1:2,400

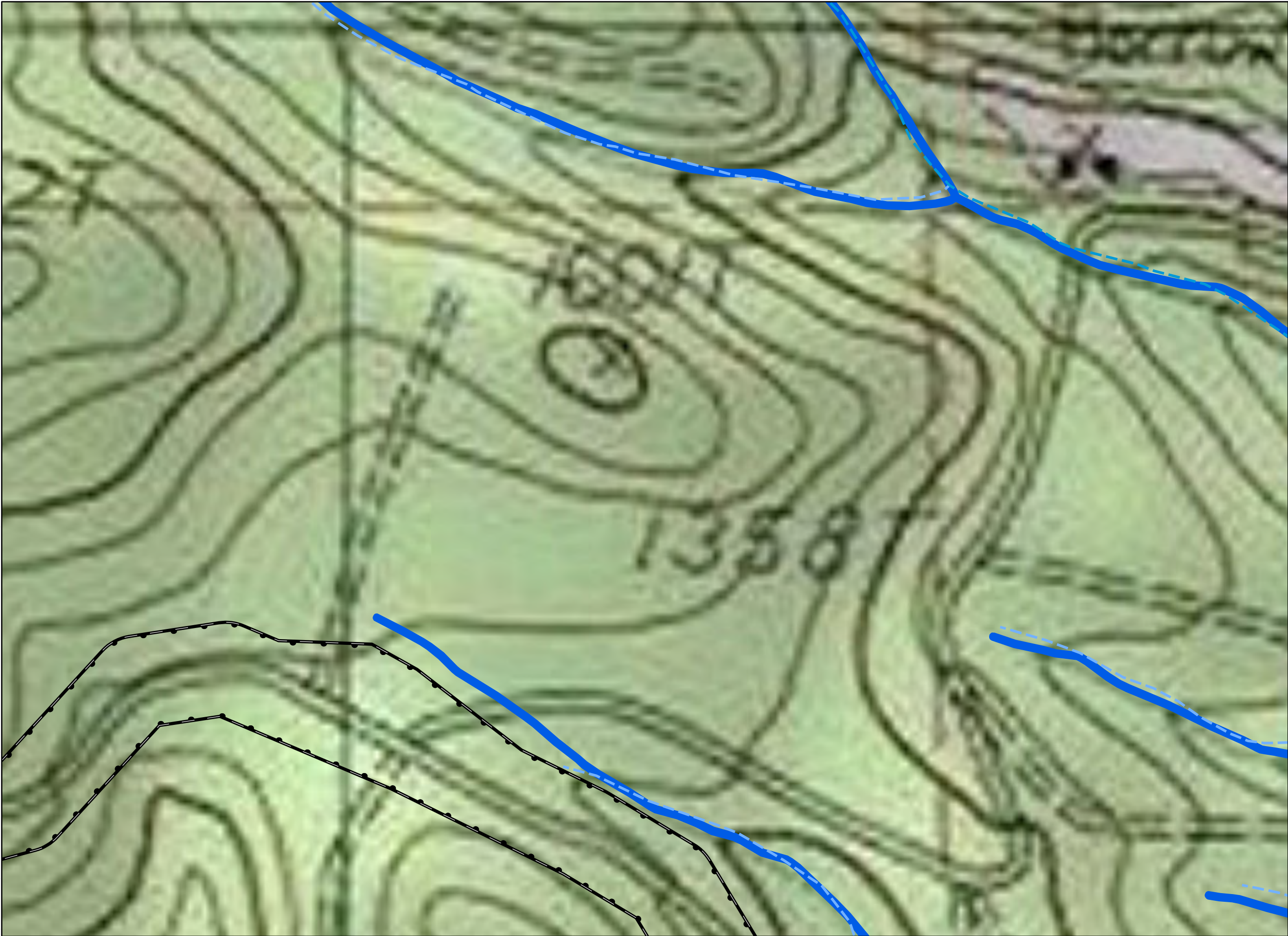
WGS 1984 UTM Zone 10N



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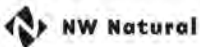


# Mist Resiliency Project

**Figure 3.7**  
**National Wetlands Inventory Detail Map**

COLUMBIA COUNTY, OR

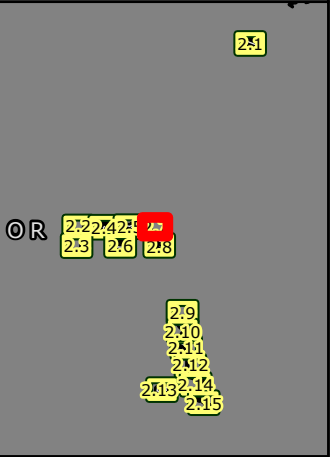
- Site Boundary
- County Boundary
- Wetlands and Waters
  - Riverine (NWI)
  - Intermittent Stream (NHD)
  - Perennial Stream (NHD)



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI



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WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION








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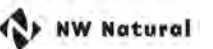


# Mist Resiliency Project

## Figure 3.8 National Wetlands Inventory Detail Map

COLUMBIA COUNTY, OR

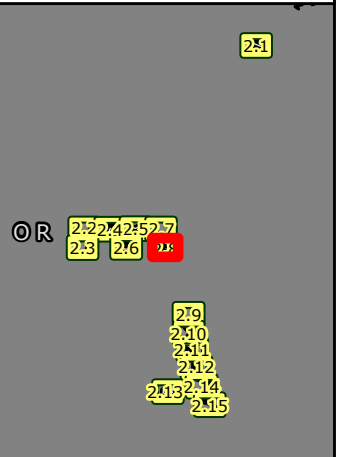
-  Site Boundary
-  County Boundary
- Wetlands and Waters
  -  Riverine (NWI)
  -  Intermittent Stream (NHD)
  -  Perennial Stream (NHD)



### Data Sources

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

### Reference Map



1:2,400

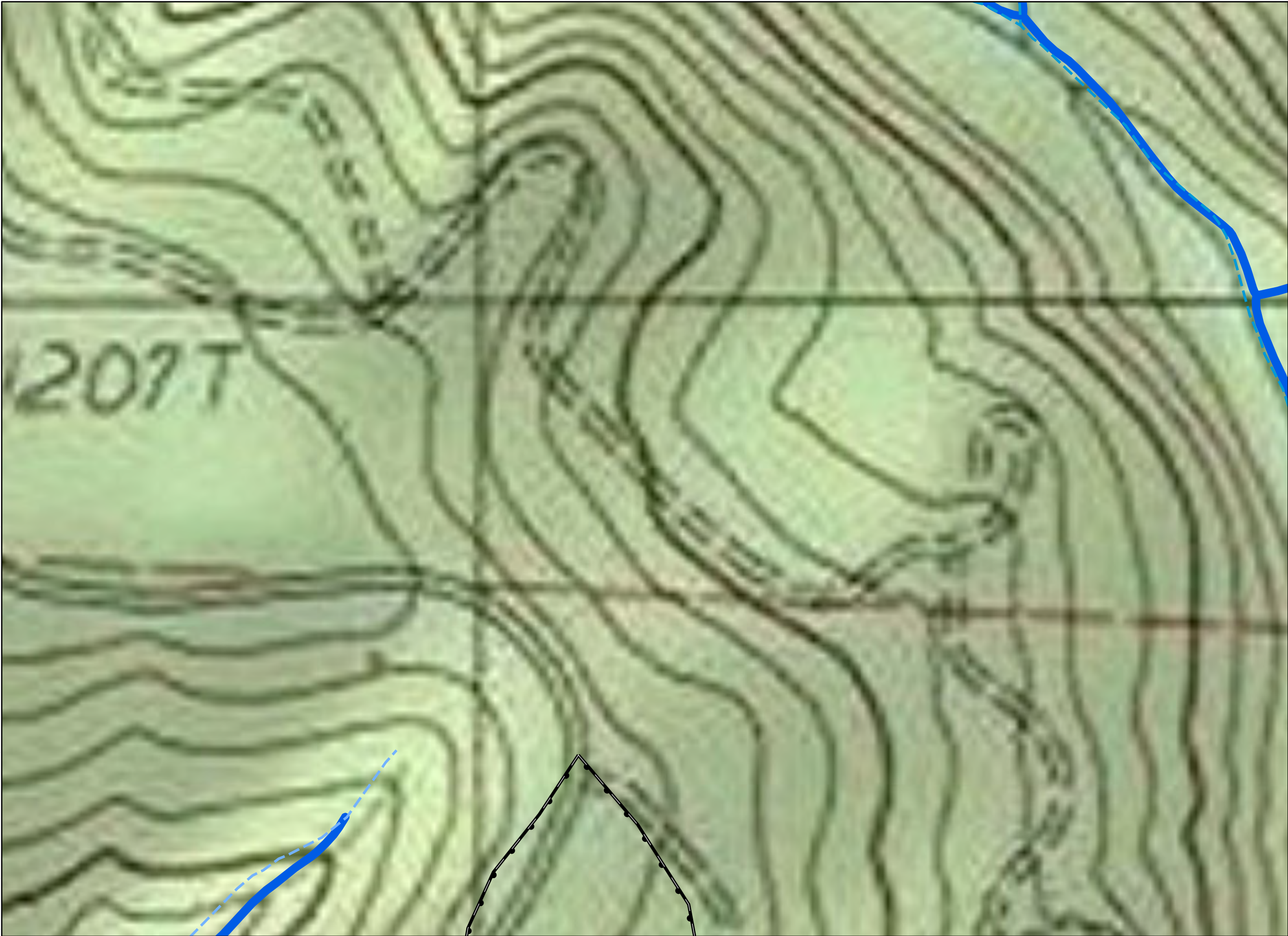
WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION








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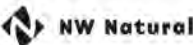


# Mist Resiliency Project

**Figure 3.9**  
**National Wetlands Inventory Detail Map**

COLUMBIA COUNTY, OR

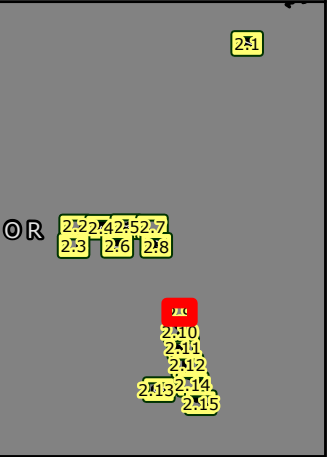
-  Site Boundary
-  County Boundary
- Wetlands and Waters
  -  Riverine (NWI)
  -  Intermittent Stream (NHD)
  -  Perennial Stream (NHD)



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI







1:2,400

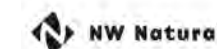
WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION



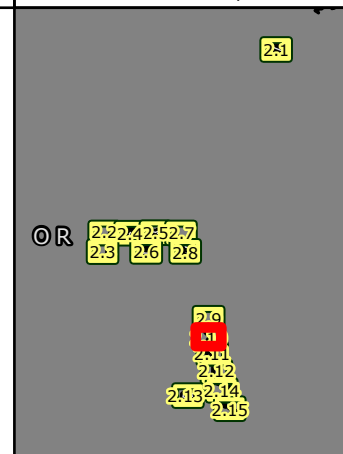
-  Site Boundary  
 County Boundary  
**Wetlands and Waters**  
 Riverine (NWI)  
 Intermittent Stream (NHD)



## Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI





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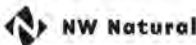


# Mist Resiliency Project

**Figure 3.11**  
**National Wetlands**  
**Inventory Detail Map**

COLUMBIA COUNTY, OR

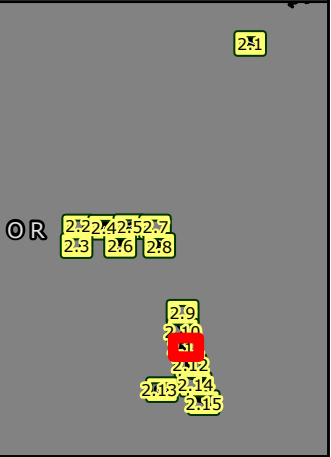
- Site Boundary
- County Boundary
- Wetlands and Waters
  - Freshwater Forested/Shrub Wetland (NWI)
  - Perennial Stream (NHD)



Data Sources

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

Reference Map



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION








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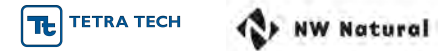


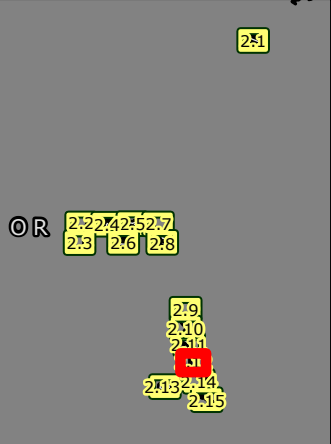
# Mist Resiliency Project

**Figure 3.12**  
**National Wetlands**  
**Inventory Detail Map**

COLUMBIA COUNTY, OR

-  Site Boundary
-  County Boundary
- Wetlands and Waters**
-  Freshwater Forested/Shrub Wetland (NWI)
-  Riverine (NWI)
-  Perennial Stream (NHD)



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Topo; USGS-NHD; USFWS-NWI	



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION



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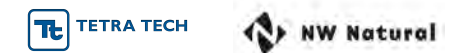


# Mist Resiliency Project

**Figure 3.13**  
**National Wetlands**  
**Inventory Detail Map**

COLUMBIA COUNTY, OR

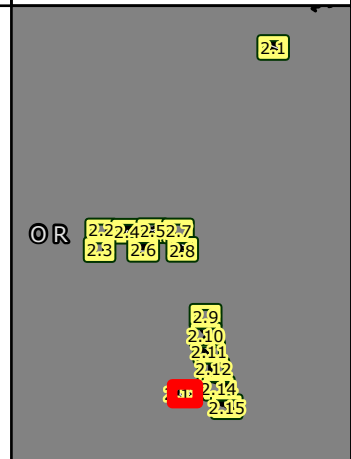
- Site Boundary
- County Boundary
- Wetlands and Waters**
  - Freshwater Emergent Wetland (NWI)
  - Freshwater Forested/Shrub Wetland (NWI)
  - Riverine (NWI)
  - Lake/Pond (NHD)
  - Perennial Stream (NHD)
  - Artificial Path



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

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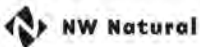


# Mist Resiliency Project

Figure 3.14  
National Wetlands  
Inventory Detail Map

COLUMBIA COUNTY, OR

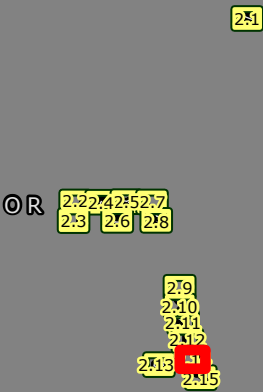
- Site Boundary
- County Boundary
- Wetlands and Waters**
- Freshwater Emergent Wetland (NWI)
- Freshwater Forested/Shrub Wetland (NWI)
- Riverine (NWI)
- Perennial Stream (NHD)
- Artificial Path



Data Sources

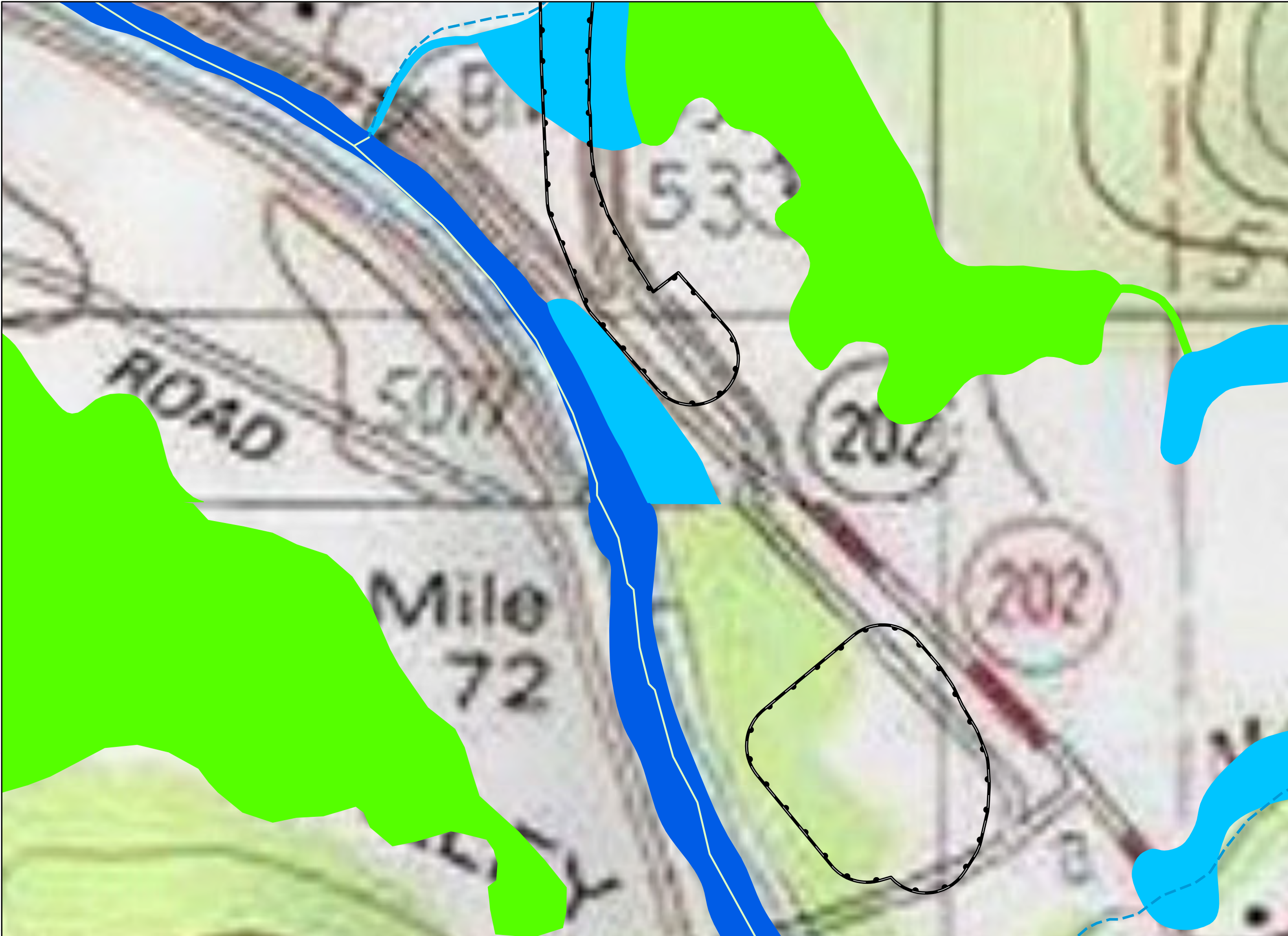
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

Reference Map





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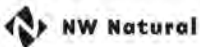


# Mist Resiliency Project

**Figure 3.15  
National Wetlands  
Inventory Detail Map**

COLUMBIA COUNTY, OR

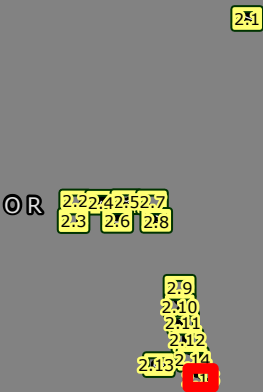
- Site Boundary
- County Boundary
- Wetlands and Waters**
  - Freshwater Emergent Wetland (NWI)
  - Freshwater Forested/Shrub Wetland (NWI)
  - Riverine (NWI)
  - Perennial Stream (NHD)
  - Artificial Path



Data Sources

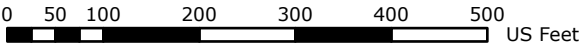
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Topo; USGS-NHD; USFWS-NWI

Reference Map









1:2,400

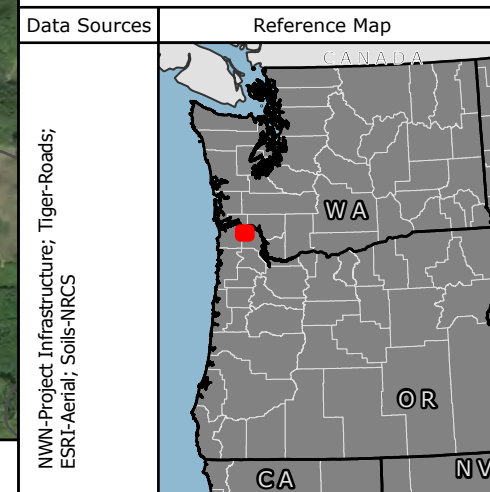
WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION



-  Site Boundary
-  Map Grid
-  US Highway
-  State Highway
-  Local Roads
-  County Boundary








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# Mist Resiliency Project

Figure 4.1  
Soils Detail Map

COLUMBIA COUNTY, OR

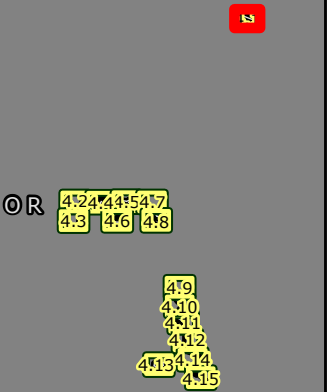
-  Site Boundary
-  County Boundary
- Hydric Rating
  -  No



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION



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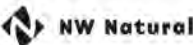


# Mist Resiliency Project

Figure 4.2  
Soils Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- County Boundary
- Hydric Rating
  - No



Data Sources

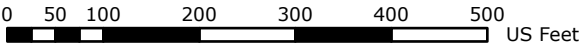
Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION






\\cess706g\stis\ICES\Projects\PD\X\NW\_Natural\MistResiliency\Maps\WetlandDelineationReport\_20240104\NW\_Natural\MistResiliency\_2022\_2023Combined\_WDR\_20240102.aprx

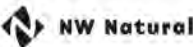


# Mist Resiliency Project

Figure 4.3  
Soils Detail Map

COLUMBIA COUNTY, OR

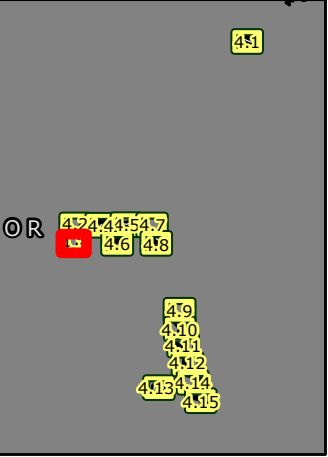
-  Site Boundary
-  County Boundary
- Hydric Rating
  -  No



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION





### Figure 4.4 Soils Detail Map

COLUMBIA COUNTY, OR

 Site Boundary County Boundary

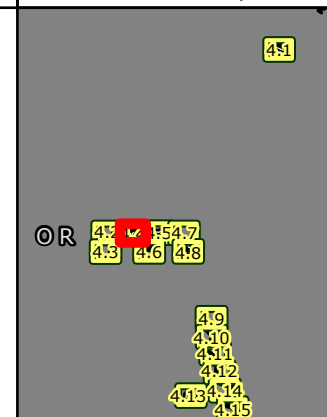
Hydric Rating

☐ No

Data Sources
--------------

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N

A scale bar labeled "US Feet" with markings at 0, 50, 100, 200, 300, 400, and 500. The bar is divided into segments corresponding to these values.

NOT FOR CONSTRUCTION



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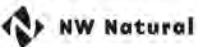


Mist Resiliency Project

Figure 4.5  
Soils Detail Map

COLUMBIA COUNTY, OR

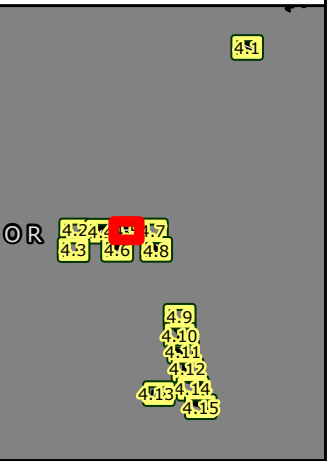
- Site Boundary
- County Boundary
- Hydric Rating
  - No



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

Figure 4.6  
Soils Detail Map

COLUMBIA COUNTY, OR

-  Site Boundary
-  County Boundary
- Hydric Rating
  -  No

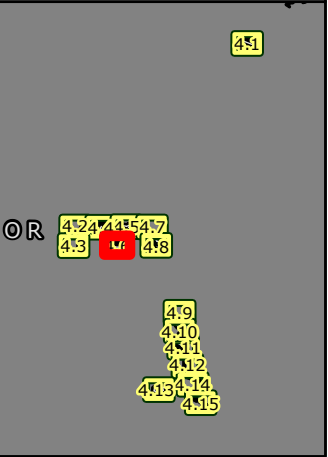


Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;

ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION



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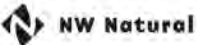


Mist Resiliency Project

Figure 4.7  
Soils Detail Map

COLUMBIA COUNTY, OR

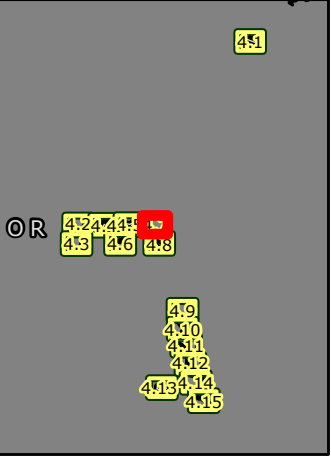
- Site Boundary
- County Boundary
- Hydric Rating
  - No



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N



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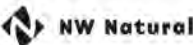


# Mist Resiliency Project

Figure 4.8  
Soils Detail Map

COLUMBIA COUNTY, OR

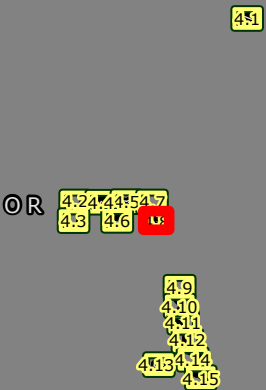
-  Site Boundary
-  County Boundary
- Hydric Rating
  -  No



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION






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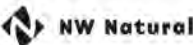


Mist Resiliency  
Project

Figure 4.9  
Soils Detail Map

COLUMBIA COUNTY, OR

-  Site Boundary
-  County Boundary
- Hydric Rating
-  No



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;

ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION






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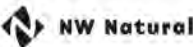


# Mist Resiliency Project

Figure 4.10  
Soils Detail Map

COLUMBIA COUNTY, OR

-  Site Boundary
-  County Boundary
- Hydric Rating
  -  No

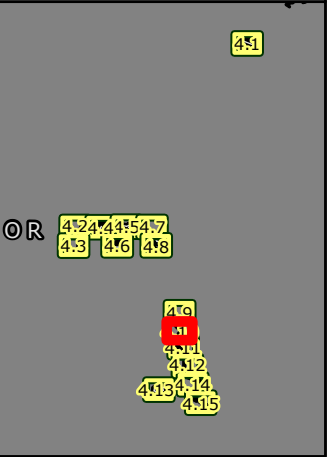


Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;

ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION






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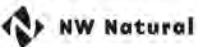


# Mist Resiliency Project

Figure 4.11  
Soils Detail Map

COLUMBIA COUNTY, OR

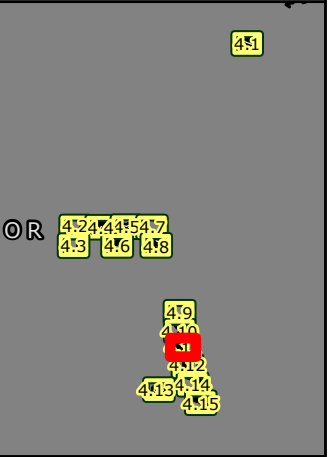
-  Site Boundary
-  County Boundary
- Hydric Rating
  -  No



Data Sources

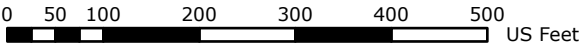
Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION







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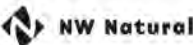


# Mist Resiliency Project

Figure 4.12  
Soils Detail Map

COLUMBIA COUNTY, OR

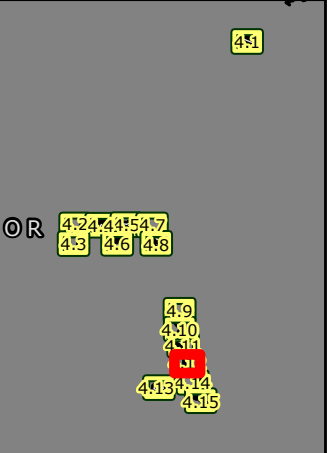
-  Site Boundary
-  County Boundary
- Hydric Rating
  -  No
  -  Yes



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION







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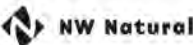


# Mist Resiliency Project

Figure 4.13  
Soils Detail Map

COLUMBIA COUNTY, OR

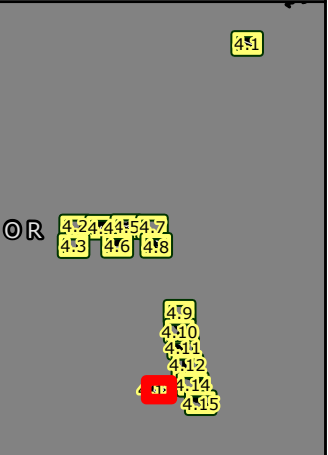
-  Site Boundary
-  County Boundary
- Hydric Rating
  -  No
  -  Yes



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION



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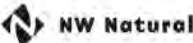


Mist Resiliency Project

Figure 4.14  
Soils Detail Map

COLUMBIA COUNTY, OR

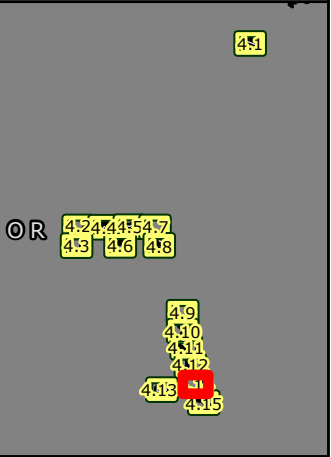
- Site Boundary
- County Boundary
- Hydric Rating
  - No
  - Yes



Data Sources

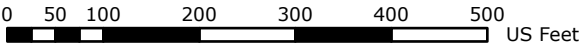
Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS



1:2,400

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION



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# Mist Resiliency Project

Figure 4.15  
Soils Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- County Boundary
- Hydric Rating
  - Yes



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial; Soils-NRCS	



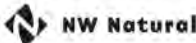
Mist Resiliency Project

Figure 4a  
Soils Legend

COLUMBIA COUNTY, OR

Map Unit Symbol, Map Unit Name

- 20 - Eilertsen silt loam
- 24 - Hapludalfs-Udifulvents complex
- 32 - McNulty silt loam
- 36D - Murnen silt loam, 3 to 30 percent slopes
- 37 - Natal silty clay loam
- 3E - Alstony gravelly loam, 30 to 60 percent north slopes
- 49E - Scaponia-Braun silt loams, 30 to 60 percent north slopes
- 50E - Scaponia-Braun silt loams, 30 to 60 percent south slopes
- 56D - Tolke silt loam, 5 to 30 percent slopes
- 58 - Treharne silt loam
- 5D - Anunde silt loam, 3 to 30 percent slopes
- 7D - Braun-Scaponia silt loams, 5 to 30 percent slopes
- 8F - Braun-Scaponia silt loams, 60 to 90 percent north slopes
- 9F - Braun-Scaponia silt loams, 60 to 90 percent south slopes



Data Sources

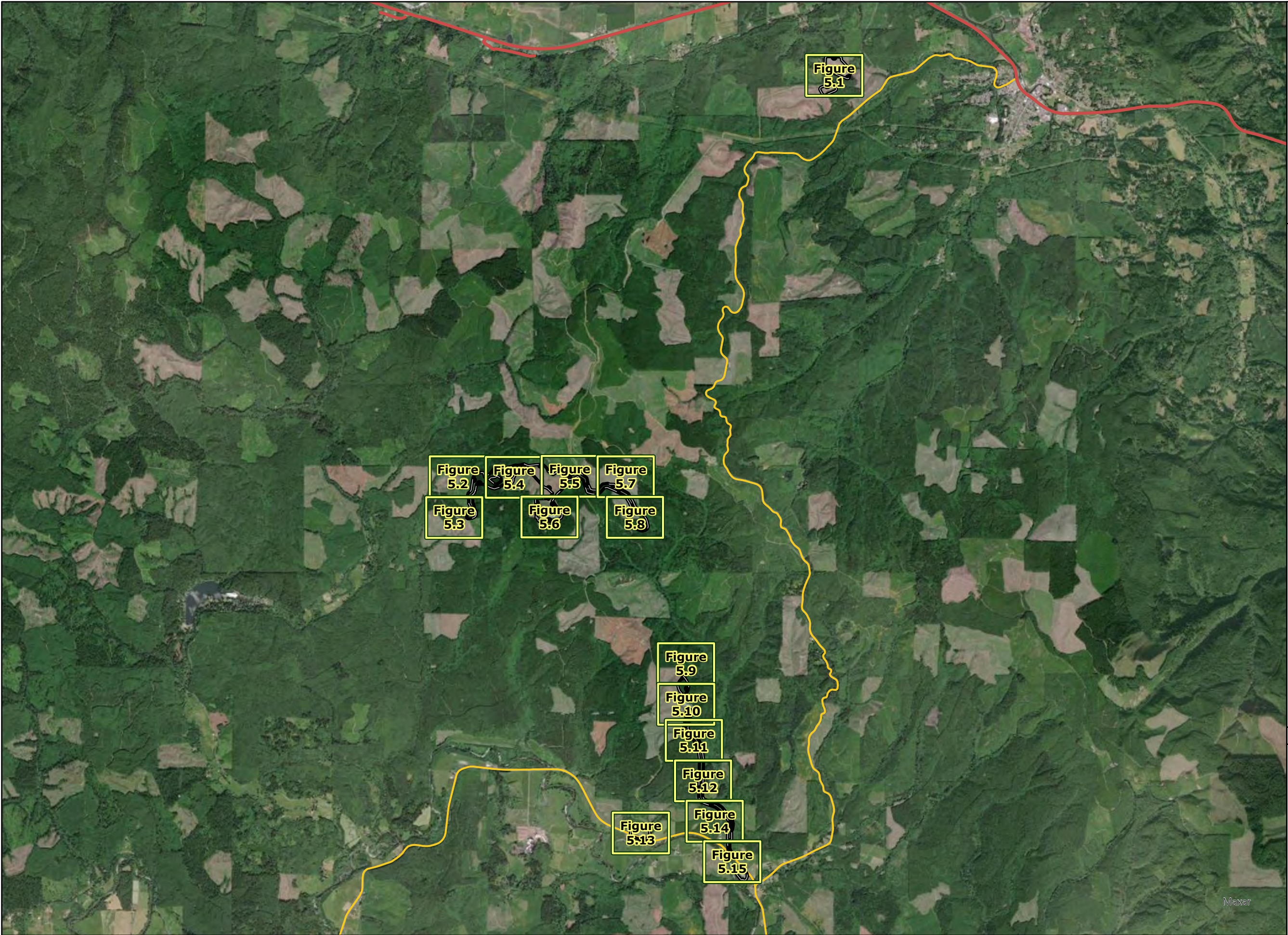
Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Soils-NRCS









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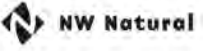


# Mist Resiliency Project

## Figure 5 Wetland Delineation Index Map

COLUMBIA COUNTY, OR

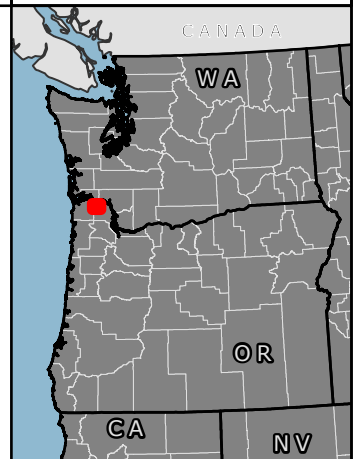
-  Study Area
-  US Highway
-  State Highway
-  Map Grid



Data Sources

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial

Reference Map



1:55,000

WGS 1984 UTM Zone 10N

0 0.5 1 2 3 4 Miles

NOT FOR CONSTRUCTION



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Mist Resiliency Project

Figure 5.1  
Wetland Delineation  
Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



1:2,400

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION



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# Mist Resiliency Project

## Figure 5.2 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)

*All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted*

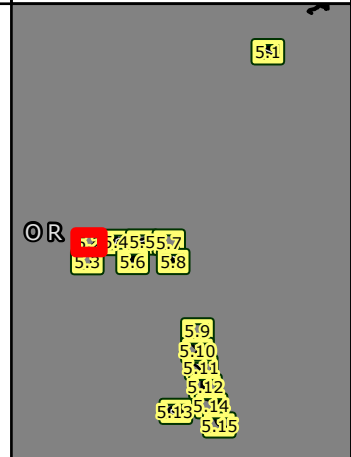
*Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq$  1 meter of the ground location.*



Data Sources

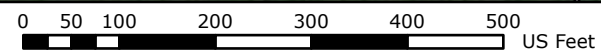
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial

Reference Map



1:2,400

WGS 1984 UTM Zone 10N



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Mist Resiliency Project

Figure 5.3  
Wetland Delineation  
Detail Map

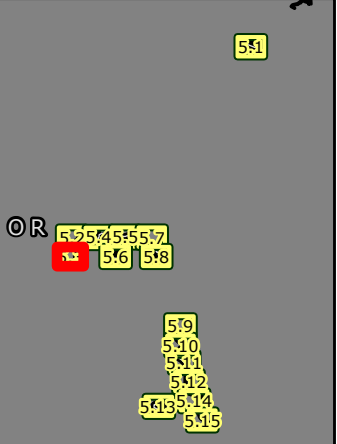
COLUMBIA COUNTY, OR

-  Site Boundary
-  Photo Point (# Photo Number)

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq$  1 meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



1:2,400

WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

## Figure 5.4 Wetland Delineation Detail Map

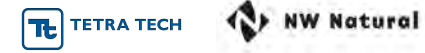
COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Field Delineated Stream
- Culvert

ST-06 and culvert have been digitized based on field observations.

*All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted*

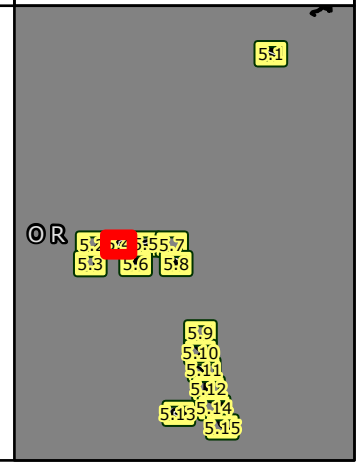
*Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are </= 1 meter of the ground location.*



Data Sources

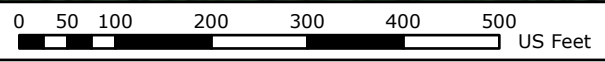
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial

Reference Map



1:2,400

WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

## Figure 5.5 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Culvert
- Field Delineated Stream

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	A reference map of Oregon showing a grid of numbered locations. A red box highlights a specific area in the central part of the state, indicating the project's location.



1:2,400

WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

NOT FOR CONSTRUCTION






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# Mist Resiliency Project

## Figure 5.6 Wetland Delineation Detail Map

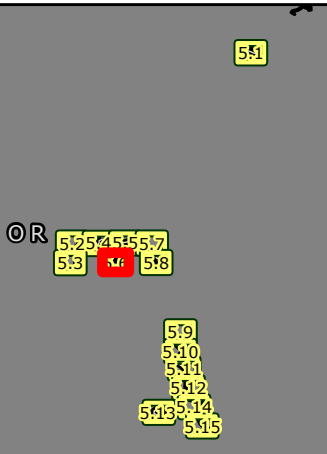
COLUMBIA COUNTY, OR

-  Site Boundary
-  Not\_Surveyed
-  Photo Point (# Photo Number)

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq$  1 meter of the ground location.

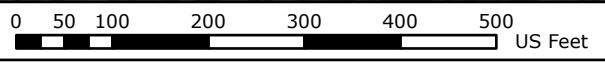


Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



1:2,400

WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

**Figure 5.7  
Wetland Delineation  
Detail Map**

COLUMBIA COUNTY, OR

- Detailed Map Grid
- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	The reference map shows a larger area with a road and wetland boundary. It includes labels for various features and points, such as 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, and 5.15. It also includes a label 'OR' and a red arrow pointing to a specific location.



1:2,400

WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

## Figure 5.7.1 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.

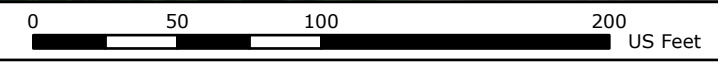


Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



1:800

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION



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Mist Resiliency Project

Figure 5.8  
Wetland Delineation  
Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Field Delineated Stream

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq$  1 meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



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WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION






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# Mist Resiliency Project

Figure 5.9  
Wetland Delineation  
Detail Map

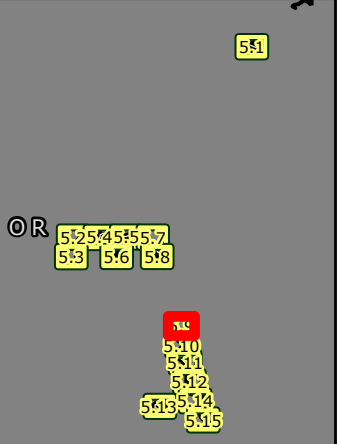
COLUMBIA COUNTY, OR

-  Site Boundary
-  Photo Point (# Photo Number)
-  Sample Plot

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq$  1 meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



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WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

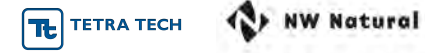
## Figure 5.10 Wetland Delineation Detail Map

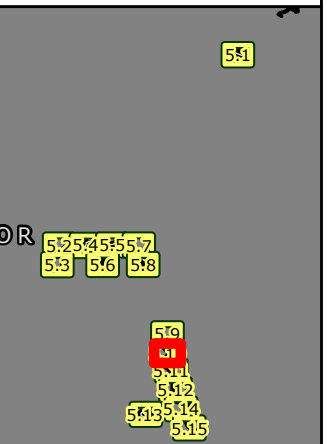
COLUMBIA COUNTY, OR

-  Site Boundary
-  Photo Point (# Photo Number)

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.

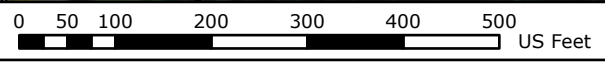


Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



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WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

## Figure 5.11 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Detailed Map Grid
- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Field Delineated Stream
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are < /= 1 meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



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WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

Figure 5.11.1  
Wetland Delineation  
Detail Map

COLUMBIA COUNTY, OR

-  Site Boundary
-  Photo Point (# Photo Number)
-  Sample Plot
-  Field Delineated Stream
-  Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

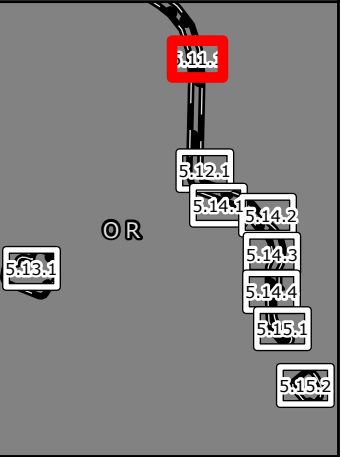
Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial



1:800

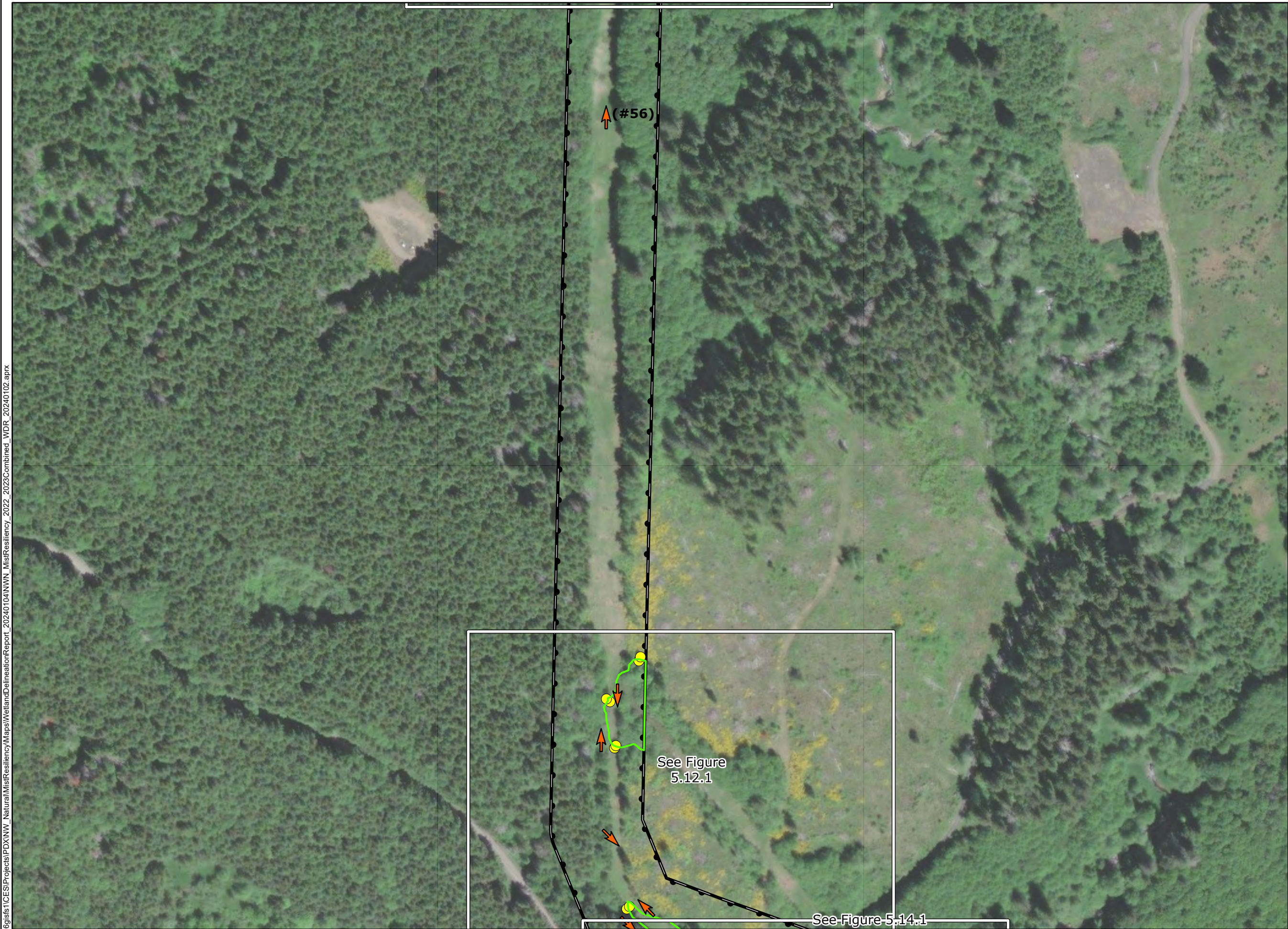
WGS 1984 UTM Zone 10N

0 50 100 200 US Feet

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# Mist Resiliency Project

## Figure 5.12 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Detailed Map Grid
- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

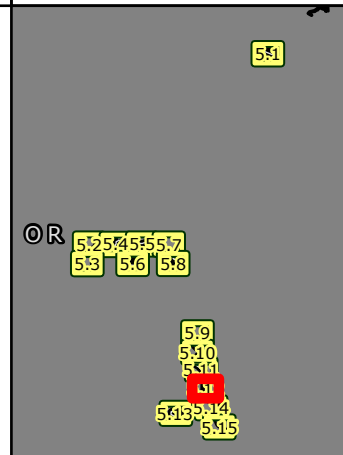
Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial



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WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

See Figure 5.14.1

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# Mist Resiliency Project

## Figure 5.14 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Detailed Map Grid
- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Stream
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



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WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

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# Mist Resiliency Project

## Figure 5.15 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Detailed Map Grid
- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Stream
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.

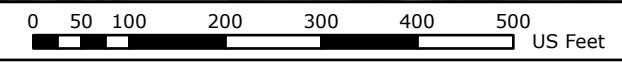


Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



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WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

## Figure 5.12.1 Wetland Delineation Detail Map

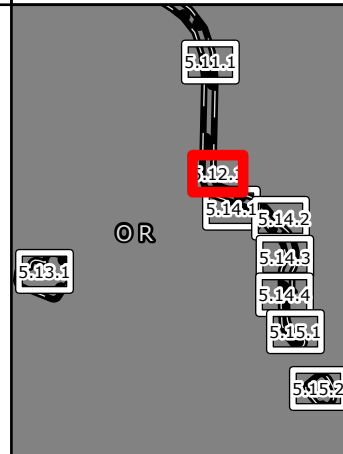
COLUMBIA COUNTY, OR

-  Site Boundary
-  Photo Point (# Photo Number)
-  Sample Plot
-  Field Delineated Wetland

*All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted*

*Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are <math>\leq 1</math> meter of the ground location.*

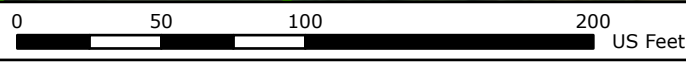


Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



1:800

WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

Figure 5.14.1  
Wetland Delineation  
Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Stream
- Field Delineated Wetland

WET-07a northeast  
of WET-07b

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

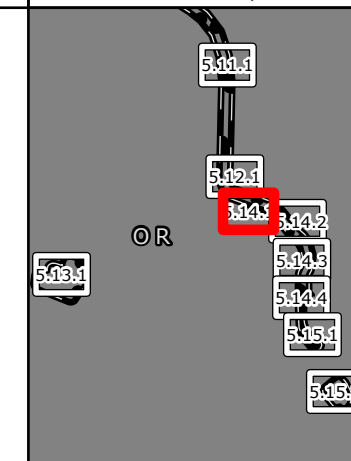
Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq$  1 meter of the ground location.



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial



1:800

WGS 1984 UTM Zone 10N

0 50 100 200  
US Feet

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# Mist Resiliency Project

## Figure 5.14.2 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Field Delineated Stream
- Field Delineated Wetland

*All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted*

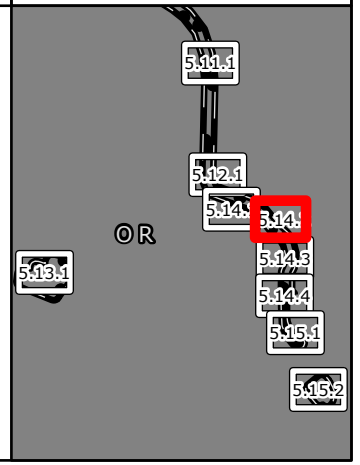
*Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are <= 1 meter of the ground location.*



Data Sources

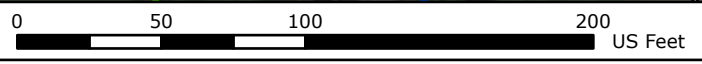
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial

Reference Map



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WGS 1984 UTM Zone 10N



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# Mist Resiliency Project

## Figure 5.14.3 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



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# Mist Resiliency Project

## Figure 5.14.4 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.

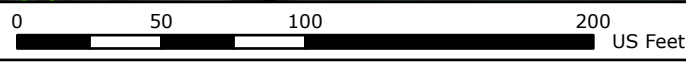


Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



1:800

WGS 1984 UTM Zone 10N



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Mist Resiliency Project

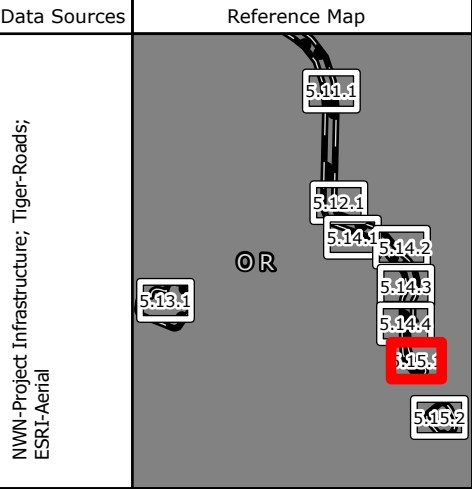
Figure 5.15.1  
Wetland Delineation  
Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.










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# Mist Resiliency Project

Figure 5.15.2  
Wetland Delineation  
Detail Map

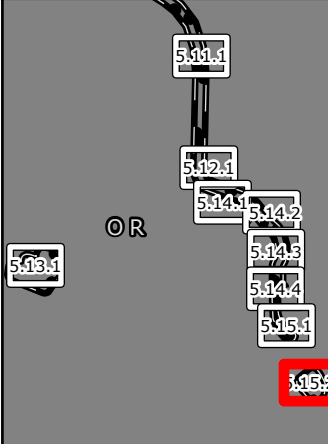
COLUMBIA COUNTY, OR

-  Site Boundary
-  Photo Point (# Photo Number)
-  Sample Plot
-  Field Delineated Stream
-  Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



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WGS 1984 UTM Zone 10N

0 50 100 200 US Feet

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# Mist Resiliency Project

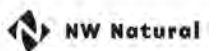
## Figure 5.13 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Detailed Map Grid
- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

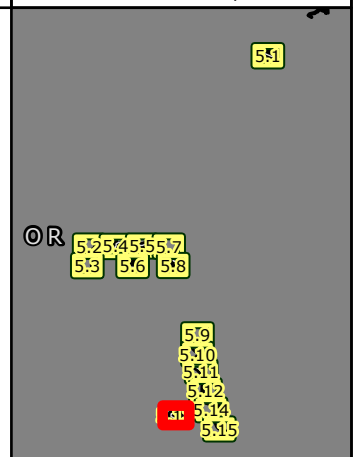
Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq 1$  meter of the ground location.



Data Sources

Reference Map

NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial



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WGS 1984 UTM Zone 10N

0 50 100 200 300 400 500 US Feet

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# Mist Resiliency Project

## Figure 5.13.1 Wetland Delineation Detail Map

COLUMBIA COUNTY, OR

- Site Boundary
- Photo Point (# Photo Number)
- Sample Plot
- Culvert
- Field Delineated Wetland

All delineated wetlands and waters are considered to extend outside of the study area unless otherwise noted

Wetland boundaries, sample plots, and photo points were collected using a sub-meter grade GPS device collecting real-time, sub-meter GNSS data. Mapped features are  $\leq$  1 meter of the ground location.

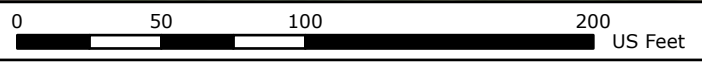


Data Sources	Reference Map
NWN-Project Infrastructure; Tiger-Roads; ESRI-Aerial	



1:800

WGS 1984 UTM Zone 10N



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## **Appendix A. USACE Datasheets**



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# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 27-Sep-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-01  
 Investigator(s): Ed Strohmaier, Sara Frank Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 45.998863 Long.: -123.259909 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Wetland plot at the NW end of wetland	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of: _____ Multiply by: _____
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>20</u> x 2 = <u>40</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>80</u> x 3 = <u>240</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
Herb Stratum (Plot size: 5ft _____)				Col umn Total s: <u>100</u> (A) <u>280</u> (B)
1. Juncus patens	20	<input checked="" type="checkbox"/> 20.0%	FACW	Prevalence Index = B/A = <u>2.800</u>
2. Agrostis stolonifera	75	<input checked="" type="checkbox"/> 75.0%	FAC	
3. Holcus lanatus	5	<input type="checkbox"/> 5.0%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-01

[illegible]

## Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <b>Field Observations:</b>  <div style="display: flex; justify-content: space-between; margin-bottom: 10px;"> <div>           Surface Water Present?    <b>Yes</b> <input type="radio"/>    <b>No</b> <input checked="" type="radio"/> </div> <div>Depth (inches): <input style="width: 100px;" type="text"/></div> </div> <div style="display: flex; justify-content: space-between; margin-bottom: 10px;"> <div>           Water Table Present?    <b>Yes</b> <input type="radio"/>    <b>No</b> <input checked="" type="radio"/> </div> <div>Depth (inches): <input style="width: 100px;" type="text"/></div> </div> <div style="display: flex; justify-content: space-between;"> <div>           Saturation Present?            (includes capillary fringe)    <b>Yes</b> <input type="radio"/>    <b>No</b> <input checked="" type="radio"/> </div> <div>Depth (inches): <input style="width: 100px;" type="text"/></div> </div> </div> <div style="width: 50%;"> <b>Wetland Hydrology Present?</b>    <b>Yes</b> <input checked="" type="radio"/>    <b>No</b> <input type="radio"/> </div> </div>			
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 27-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-02  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 45.998881 Long.: -123.259933 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☒ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Gravel road just east of WET-01. Area has been disturbed by creation of laydown yard and gravel restricts the ability to dig a pit past a few inches.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. <u>Rubus armeniacus</u>	20	<input type="checkbox"/> 16.7%	FAC
2. <u>Agrostis stolonifera</u>	80	<input checked="" type="checkbox"/> 66.7%	FAC
3. <u>Holcus lanatus</u>	10	<input type="checkbox"/> 8.3%	FAC
4. <u>Festuca arundinacea</u>	10	<input type="checkbox"/> 8.3%	FAC
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	0	<input type="checkbox"/> 0.0%	
9. _____	0	<input type="checkbox"/> 0.0%	
10. _____	0	<input type="checkbox"/> 0.0%	
11. _____	0	<input type="checkbox"/> 0.0%	
120 = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
% Bare Ground in Herb Stratum: <u>0</u>			

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 120 x 3 = 360  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 120 (A) 360 (B)  
 Prevalence Index = B/A = 3.000

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☐ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR	3/3	100				Silt Loam	No redox

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: Gravel  
Depth (inches): 6

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
Disturbed laydown yard area along gravel roadside

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No Hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 29-Sep-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-12  
 Investigator(s): Ed Strohmaier, Sara Frank Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.0030724 Long.: -123.262242 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: representative upland plot	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
		<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum (Plot size: 15ft _____)</b>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>110</u> x 3 = <u>330</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>110</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>3.000</u>
1. <u>Frangula purshiana</u>	10	<input checked="" type="checkbox"/> 100.0%	FAC	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
		<b>= Total Cover</b>		
<b>Herb Stratum (Plot size: 5ft _____)</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Festuca arundinacea</u>	100	<input checked="" type="checkbox"/> 95.2%	FAC	
2. _____		<input type="checkbox"/> 0.0%		
3. _____	5	<input type="checkbox"/> 4.8%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
		<b>= Total Cover</b>		
<b>Woody Vine Stratum (Plot size: _____)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
		<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-12**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	2/2	100						Silt Loam	
6-20	10YR	4/2	100						Silty Clay Loam	
20-22	10YR	4/2	95	10YR	3/6	5	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 29-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-13  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.003172 Long.: -123.262061 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.000</u>
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. <u>Phalaris arundinacea</u>	100	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-13**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR	2/2	99	7.5YR	5/6	1	C	M	Silt Loam	
10-20	10YR	2/2	95	7.5YR	5/6	5	C	M	Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
No pore linings

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No Hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 29-Sep-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-14  
 Investigator(s): Ed Strohmaier, Sara Frank Section, Township, Range: S 14 T 7N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.003222 Long.: -123.262170 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland verification	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
		<b>= Total Cover</b>		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>310</u> (B) Prevalence Index = B/A = <u>3.100</u>
<b>Sapling/Shrub Stratum (Plot size: 15ft _____)</b>				
1. <u>Prunus emarginata</u>	10	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____		<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
		<b>= Total Cover</b>		
<b>Herb Stratum (Plot size: 5ft _____)</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Festuca arundinacea</u>	90	<input checked="" type="checkbox"/> 94.7%	FAC	
2. _____		<input type="checkbox"/> 0.0%		
3. _____		<input type="checkbox"/> 0.0%		
4. _____		<input type="checkbox"/> 0.0%		
5. _____		<input type="checkbox"/> 0.0%		
6. _____		<input type="checkbox"/> 0.0%		
7. _____		<input type="checkbox"/> 0.0%		
8. _____	5	<input type="checkbox"/> 5.3%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
		<b>= Total Cover</b>		
<b>Woody Vine Stratum (Plot size: _____)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
		<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>10</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-14**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	3/2	100						Silt Loam	
6-18	10YR	3/2	100						Silty Clay Loam	
18-20	10YR	4/2	95	10YR	3/6	5	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
No soil indicators present

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 29-Sep-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-16  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): flat Slope:        % /        °  
 Subregion (LRR): LRR A Lat.: 46.003249 Long.: -123.262314 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>      </u> )				
1. <u>      </u>	0	<input type="checkbox"/> 0.0%		
2. <u>      </u>	0	<input type="checkbox"/> 0.0%		
3. <u>      </u>	0	<input type="checkbox"/> 0.0%		
4. <u>      </u>	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				
1. <u>Rubus armeniacus</u>	70	<input checked="" type="checkbox"/> 100%	FAC	
2. <u>      </u>	0	<input type="checkbox"/> 0.0%		
3. <u>      </u>	0	<input type="checkbox"/> 0.0%		
4. <u>      </u>	0	<input type="checkbox"/> 0.0%		
5. <u>      </u>	0	<input type="checkbox"/> 0.0%		
70 = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>      </u> )				
1. <u>      </u>		<input type="checkbox"/> 0.0%		
2. <u>      </u>	0	<input type="checkbox"/> 0.0%		
3. <u>      </u>	0	<input type="checkbox"/> 0.0%		
4. <u>      </u>	0	<input type="checkbox"/> 0.0%		
5. <u>      </u>	0	<input type="checkbox"/> 0.0%		
6. <u>      </u>	0	<input type="checkbox"/> 0.0%		
7. <u>      </u>	0	<input type="checkbox"/> 0.0%		
8. <u>      </u>	0	<input type="checkbox"/> 0.0%		
9. <u>      </u>	0	<input type="checkbox"/> 0.0%		
10. <u>      </u>	0	<input type="checkbox"/> 0.0%		
11. <u>      </u>	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: <u>      </u> )				
1. <u>      </u>	0	<input type="checkbox"/> 0.0%		
2. <u>      </u>	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>% Bare Ground in Herb Stratum:</b> <u>30</u>				
<b>Dominance Test worksheet:</b>				
Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u>				(A)
Total Number of Dominant Species Across All Strata: <u>2</u>				(B)
Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u>				(A/B)
<b>Prevalence Index worksheet:</b>				
Total % Cover of: <u>70</u> Multiply by:				
OBL species	<u>0</u>	x 1 =	<u>0</u>	
FACW species	<u>0</u>	x 2 =	<u>0</u>	
FAC species	<u>70</u>	x 3 =	<u>210</u>	
FACU species	<u>0</u>	x 4 =	<u>0</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>70</u>	(A)	<u>210</u>	(B)
Prevalence Index = B/A = <u>3.000</u>				
<b>Hydrophytic Vegetation Indicators:</b>				
<input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%				
<input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>				
<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>				
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>				
Remarks: Bare ground from mowing activity				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-16**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-9	10YR	3/2	100						Silt Loam	
9-16	10YR	4/2	100						Sandy Clay Loam	
16-20	10YR	4/3	80	10YR	5/2	20	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 29-Sep-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-21  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave Slope: 8.0 % / 4.6 °  
 Subregion (LRR): LRR A Lat.: 46.003352 Long.: -123.262294 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				Prevalence Index worksheet:
1. <u>Salix sitchensis</u>	40	<input checked="" type="checkbox"/> 88.9%	FACW	Total % Cover of: _____ Multiply by: _____
2. <u>Salix lasiandra</u>	5	<input type="checkbox"/> 11.1%	FACW	OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>135</u> x 2 = <u>270</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>0</u> x 3 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u> x 4 = <u>0</u>
	45	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
Herb Stratum (Plot size: <u>5ft</u> )				Col umn Total s: <u>135</u> (A) <u>270</u> (B)
1. <u>Phalaris arundinacea</u>	90	<input checked="" type="checkbox"/> 100.0%	FACW	Prevalence Index = B/A = <u>2.000</u>
2. _____		<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	90	= Total Cover		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%		<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>
% Bare Ground in Herb Stratum: <u>10</u>				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-21**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-3	10YR	4/2	60	10YR	4/6	20	C	M	Clay	cobble is common
				10YR	3/6	20	C	M		
3-6	10YR	2/2	95	10YR	3/4	5	C	M	Silty Clay Loam	
6-9			50	5YR	3/4	50	C	M	Silty Clay	3/10Y from gley 1 page
9-18	10YR	4/1	70	10YR	3/6	30	C	M	Silty Clay	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Muck Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1) (except in MLRA 1)  
☐ Loamy Gleyed Matrix (F2)  
☒ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 2 cm Muck (A10)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

## Remarks:

Two redox colors in the first horizon

## Hydrology

**Wetland Hydrology Indicators:**

## Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1)  
☐ Sediment Deposits (B2)  
☐ Drift deposits (B3)  
☐ Algal Mat or Crust (B4)  
☐ Iron Deposits (B5)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)  
☐ Salt Crust (B11)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres on Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Tilled Soils (C6)  
☐ Stunted or Stressed Plants (D1) (LRR A)  
☐ Other (Explain in Remarks)

## Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)  
☐ Drainage Patterns (B10)  
☐ Dry Season Water Table (C2)  
☐ Saturation Visible on Aerial Imagery (C9)  
☒ Geomorphic Position (D2)  
☐ Shallow Aquitard (D3)  
☒ FAC-neutral Test (D5)  
☐ Raised Ant Mounds (D6) (LRR A)  
☐ Frost Heave Hummocks (D7)

**Field Observations:**Surface Water Present? Yes ☐ No ☒Depth (inches): Water Table Present? Yes ☐ No ☒Depth (inches): Saturation Present? (includes capillary fringe) Yes ☐ No ☒Depth (inches): Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

## Remarks:

Very moist. Plot is in the low point of wetland swale and is about 8' past the ends of 3 36" culverts



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 29-Sep-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-22  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): flat Slope: 2.0 % / 1.1 °  
 Subregion (LRR): LRR A Lat.: 46.0033311 Long.: -123.262317 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Near toe of fill on slope of mainline road	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
			<b>= Total Cover</b>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>20</u> (A) <u>40</u> (B) Prevalence Index = B/A = <u>2.000</u>
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
3. _____		<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
			<b>= Total Cover</b>	
<b>Herb Stratum (Plot size: 5ft _____)</b>				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. <u>Phalaris arundinacea</u>	20	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____		<input type="checkbox"/> 0.0%		
3. _____		<input type="checkbox"/> 0.0%		
4. _____		<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
			<b>= Total Cover</b>	
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
			<b>= Total Cover</b>	
<b>% Bare Ground in Herb Stratum:</b> <u>80</u>				
Remarks: A lot of bare ground due to weed management				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-22**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-12	10YR	4/4	80	2.5Y	5/4	10	C	M	Silty Clay Loam	
				10YR	4/6	10	C	M		
12-16	10YR	4/4	80	10YR	4/6	20	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining, M=Matrix

## Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                            |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                        |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                        |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input checked="" type="checkbox"/> Redox Dark Surface (F6)          |
| <input type="checkbox"/> Sandy Muck Mineral (S1)           | <input type="checkbox"/> Depleted Dark Surface (F7)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox depressions (F8)                      |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |   |
|---|
| <input type="checkbox"/> 2 cm Muck (A10)            |
| <input type="checkbox"/> Red Parent Material (TF2)  |
| <input type="checkbox"/> Other (Explain in Remarks) |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if present):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

## Remarks:

cobbles and mixed matrix in upper layer.

## Hydrology

## Wetland Hydrology Indicators:

## Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Salt Crust (B11)   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                              |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)               |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                            |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)               |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)                  |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Other (Explain in Remarks)                               |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

## Secondary Indicators (minimum of two required)

- |   |
|---|
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10)                                      |
| <input type="checkbox"/> Dry Season Water Table (C2)                                  |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)                    |
| <input type="checkbox"/> Geomorphic Position (D2)                                     |
| <input type="checkbox"/> Shallow Aquitard (D3)  |
| <input checked="" type="checkbox"/> FAC-neutral Test (D5)                             |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)                               |
| <input type="checkbox"/> Frost Heave Hummocks (D7)                                    |

## Field Observations:

Surface Water Present? Yes ☐ No ☒Depth (inches): Water Table Present? Yes ☐ No ☒Depth (inches): Saturation Present?  
(includes capillary fringe) Yes ☐ No ☒Depth (inches): Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

## Remarks:

Soil is dry, plot is about 3 feet above the wetland plot of the pair.



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 29-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-23  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.003352 Long.: -123.262053 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Dug pit to check indicators in location where vegetation was likely to meet	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>210</u> (B) Prevalence Index = B/A = <u>2.100</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	90	<input checked="" type="checkbox"/> 90.0%	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rubus armeniacus</u>	10	<input type="checkbox"/> 10.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-23**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-9	10YR	3/2	99	5YR	4/3	1	C	M	Silt Loam	
9-15	10YR	2/2	100						Silt Loam	
15-24	10YR	3/3	95	10YR	5/6	5	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 29-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-24  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave Slope: 6.0 % / 3.4 °  
 Subregion (LRR): LRR A Lat.: 46.003538 Long.: -123.262216 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland pit on east side of WET-03	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Thuja plicata</u>	<u>50</u>	<input checked="" type="checkbox"/> 50.0%	FAC	
2. <u>Acer macrophyllum</u>	<u>50</u>	<input checked="" type="checkbox"/> 50.0%	FACU	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
		<u>100</u> = Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>125</u> x 3 = <u>375</u> FACU species <u>130</u> x 4 = <u>520</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>255</u> (A) <u>895</u> (B) Prevalence Index = B/A = <u>3.510</u>
1. <u>Acer circinatum</u>	<u>20</u>	<input checked="" type="checkbox"/> 22.2%	FAC	
2. <u>Cornus nuttallii</u>	<u>70</u>	<input checked="" type="checkbox"/> 77.8%	FACU	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
		<u>90</u> = Total Cover		
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rubus armeniacus</u>	<u>30</u>	<input checked="" type="checkbox"/> 46.2%	FAC	
2. <u>Urtica dioica</u>	<u>10</u>	<input type="checkbox"/> 15.4%	FAC	
3. <u>Carex deweyana</u>	<u>15</u>	<input checked="" type="checkbox"/> 23.1%	FAC	
4. <u>Pteridium aquilinum</u>	<u>5</u>	<input type="checkbox"/> 7.7%	FACU	
5. <u>Polystichum munitum</u>	<u>5</u>	<input type="checkbox"/> 7.7%	FACU	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
		<u>65</u> = Total Cover		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
		<u>0</u> = Total Cover		
% Bare Ground in Herb Stratum: <u>35</u>				

Remarks:

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-24**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	2/2	100						
6-18	10YR	3/2	100						

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: Root restriction  
Depth (inches): 18

Hydric Soil Present?    Yes ☐    No ☒

Remarks:  
No redox

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

Wetland Hydrology Present?    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No Hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 29-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-25  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): convex Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.003533 Long.: -123.262271 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Thuja plicata</u>	<u>50</u>	<input checked="" type="checkbox"/> 90.9%	<u>FAC</u>	
2. <u>Acer macrophyllum</u>	<u>5</u>	<input type="checkbox"/> 9.1%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>55</u>	<b>= Total Cover</b>		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				
1. <u>Cornus nuttallii</u>	<u>80</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>55</u> x 3 = <u>165</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>215</u> (A) <u>645</u> (B) Prevalence Index = B/A = <u>3.000</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>80</u>	<b>= Total Cover</b>		
Herb Stratum (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	<u>65</u>	<input checked="" type="checkbox"/> 81.3%	<u>FACW</u>	
2. <u>Carex obnupta</u>	<u>10</u>	<input type="checkbox"/> 12.5%	<u>OBL</u>	
3. <u>Urtica dioica</u>	<u>5</u>	<input type="checkbox"/> 6.3%	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>80</u>	<b>= Total Cover</b>		
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>0</u>	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>20</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-25

[illegible]

## Hydrology

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> </div> <div> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> </div> <div> Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> </div> <div> Depth (inches): <input type="text"/> </div> <div> Depth (inches): <input type="text"/> </div> <div> Depth (inches): <input type="text"/> </div> </div> <div> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> </div> </div>		
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:		
Remarks:		



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 29-Sep-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: SP-26  
 Investigator(s): ES Section, Township, Range: S 15 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.00425972 Long.: -123.2622698 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Alnus rubra</u>	<u>30</u>	<input checked="" type="checkbox"/> 60.0%	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Salix lasiandra</u>	<u>20</u>	<input checked="" type="checkbox"/> 40.0%	<u>FACW</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>50</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>120</u> x 2 = <u>240</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>150</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>2.200</u>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	<u>100</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>100</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-26**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-3	10YR	3/2	90	10YR	4/6	10	RM	PL	Silt Loam	
3-6	10YR	3/2	80	10YR	4/6	20	RM	PL	Clay Loam	
6-18	10YR	3/2	95	10YR	4/6	5	C	M	Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Soil is moist but not saturated



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 29-Sep-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: SP-27  
 Investigator(s): ES Section, Township, Range: S 15 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): convex Slope: 4.0 % / 2.3 °  
 Subregion (LRR): LRR A Lat.: 46.00426469 Long.: -123.2622868 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland plot paired with SP-26. Plot is roughly 3' higher than the wetland and is located on the fill slope of road	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Rubus ursinus</u>	20	<input checked="" type="checkbox"/> 100.0%	FACU	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>85</u> x 2 = <u>170</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> <b>Column Totals:</b> <u>120</u> (A) <u>295</u> (B) Prevalence Index = B/A = <u>2.458</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	20	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	85	<input checked="" type="checkbox"/> 85.0%	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Equisetum arvense</u>	15	<input type="checkbox"/> 15.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>0</u>				
<b>Remarks:</b>				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-27

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-3	10YR	2/2	100				Sandy Loam	Crushed rock	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: Rock  
Depth (inches): 3

Hydric Soil Present?    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: SP-28  
 Investigator(s): ES Section, Township, Range: S 15 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): flat Slope: 25.0 % / 14.0 °  
 Subregion (LRR): LRR A Lat.: 46.0041537 Long.: -123.2621228 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland plot	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Frangula purshiana</u>	<u>50</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>50</u>	<b>= Total Cover</b>		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				
1. <u>Rubus armeniacus</u>	<u>40</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>190</u> (A) <u>470</u> (B) Prevalence Index = B/A = <u>2.474</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>40</u>	<b>= Total Cover</b>		
Herb Stratum (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	<u>100</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>100</u>	<b>= Total Cover</b>		
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-28**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-10	10YR	3/2	100					Silt Loam	
10-14	10YR	3/3	100					Silt Loam	
14-18	10YR	4/3	100					Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
Slightly moist, not saturated

## Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: Sp-29  
 Investigator(s): ES Section, Township, Range: S 15 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.0041415 Long.: -123.2620887 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Wetland plot on the east side of vegetated mound	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> <b>Column Totals:</b> <u>100</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.000</u>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	100	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **Sp-29**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR	3/2	93	10YR	3/6	7	C	M	Silt Loam	
6-10	10Y	2.5/1	95	5Y	4/6	5	C	M	Silty Clay	
10-20	10YR	3/2	95	10YR	3/4	5	C	M	Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:  
Soil moist throughout

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-30  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 1.0 % / 0.6 °  
 Subregion (LRR): LRR A Lat.: 46.003673 Long.: -123.262131 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Wetland confirmation between blackberry thickets	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. <u>Physocarpus capitatus</u>	50	<input checked="" type="checkbox"/> 71.4%	FACW	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>165</u> x 2 = <u>330</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>185</u> (A) <u>395</u> (B) Prevalence Index = B/A = <u>2.135</u>
2. <u>Cornus alba var. occidentalis</u>	20	<input checked="" type="checkbox"/> 28.6%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	70	= Total Cover		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Phalaris arundinacea</u>	95	<input checked="" type="checkbox"/> 82.6%	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rubus armeniacus</u>	15	<input type="checkbox"/> 13.0%	FAC	
3. <u>Pteridium aquilinum</u>	5	<input type="checkbox"/> 4.3%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	115	= Total Cover		
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks: No tree cover				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-30

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-4	10YR	3/2	100						Silty Clay Loam	
4-24	10YR	4/2	85	10YR	4/6	15	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	
Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: SP-31  
 Investigator(s): ES Section, Township, Range: S 15 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 22.0 % / 12.4 °  
 Subregion (LRR): LRR A Lat.: 46.00421972 Long.: -123.2622309 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland plot	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>95</u> x 2 = <u>190</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>205</u> (B) Prevalence Index = B/A = <u>2.050</u>
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> _____)				
1. <u>Phalaris arundinacea</u>	95	<input checked="" type="checkbox"/> 95.0%	FACW	
2. <u>Urtica dioica</u>	5	<input type="checkbox"/> 5.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
100 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-31**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR	2/2	90	10YR	3/3	10	C	M	Silty Clay Loam	
16-24	10YR	4/2	80	10YR	4/4	20	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining. M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                            |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                        |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                        |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                     |
| <input type="checkbox"/> Sandy Muck Mineral (S1)           | <input type="checkbox"/> Depleted Dark Surface (F7)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox depressions (F8)                      |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐
- 2 cm Muck (A10)
- 
- ☐
- Red Parent Material (TF2)
- 
- ☐
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☐ No ☒

Remarks:

## Hydrology

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Salt Crust (B11)   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                              |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)               |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                            |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)               |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)                  |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Other (Explain in Remarks)                               |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (minimum of two required)

- ☐
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- 
- ☐
- Drainage Patterns (B10)
- 
- ☐
- Dry Season Water Table (C2)
- 
- ☐
- Saturation Visible on Aerial Imagery (C9)
- 
- ☐
- Geomorphic Position (D2)
- 
- ☐
- Shallow Aquitard (D3)
- 
- ☒
- FAC-neutral Test (D5)
- 
- ☐
- Raised Ant Mounds (D6) (LRR A)
- 
- ☐
- Frost Heave Hummocks (D7)

**Field Observations:**Surface Water Present? Yes ☐ No ☒Depth (inches): Water Table Present? Yes ☐ No ☒Depth (inches): Saturation Present? (includes capillary fringe) Yes ☐ No ☒Depth (inches): Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: SP-32  
 Investigator(s): ES Section, Township, Range: S 15 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.00421972 Long.: -123.2622309 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Alnus rubra</u>	<u>20</u>	<input checked="" type="checkbox"/> 50.0%	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Salix lasiandra</u>	<u>20</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACW</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>40</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>120</u> x 2 = <u>240</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> <b>Column Totals:</b> <u>140</u> (A) <u>300</u> (B) Prevalence Index = B/A = <u>2.143</u>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	<u>100</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>100</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-32**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR	3/2	80	10YR	3/6	20	RM	PL	Silty Clay Loam	
7-16	10YR	3/2	80	10YR	4/4	20	C	M	Silty Clay Loam	
16-20	10YR	3/2	90	10YR	4/6	10	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-33  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.003919 Long.: -123.262052 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Wetland plot of pair	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Alnus rubra</u>	<u>45</u>	<input checked="" type="checkbox"/> 52.9%	<u>FAC</u>	
2. <u>Salix scouleriana</u>	<u>40</u>	<input checked="" type="checkbox"/> 47.1%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>85</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>125</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>2.720</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	<u>35</u>	<input checked="" type="checkbox"/> 87.5%	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rubus armeniacus</u>	<u>5</u>	<input type="checkbox"/> 12.5%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>40</u>	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum: <u>60</u>				
Remarks: No shrubs				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-33

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-6	10YR	3/2	100						Silty Clay Loam	
6-18	10YR	4/2	90	10YR	4/6	10	C	PL	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):		Hydric Soil Present?
Type: <u>Root</u>		Yes <input checked="" type="radio"/> No <input type="radio"/>
Depth (inches): <u>8</u>		

Remarks:  
Unable to dig past 18" due to root restriction

## Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> FAC-neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Frost Heave Hummocks (D7)	

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-34  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.003882 Long.: -123.262074 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland of paired plot	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 3 (B)  Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
1. Alnus rubra	60	<input checked="" type="checkbox"/> 85.7%	FAC	
2. Salix scouleriana	10	<input type="checkbox"/> 14.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
		70 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 145 x 3 = 435 FACU species 20 x 4 = 80 UPL species 0 x 5 = 0 Column Totals: 165 (A) 515 (B) Prevalence Index = B/A = 3.121
1. Acer circinatum	50	<input checked="" type="checkbox"/> 76.9%	FAC	
2. Cornus nuttallii	5	<input type="checkbox"/> 7.7%	FACU	
3. Sambucus racemosa	10	<input type="checkbox"/> 15.4%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
		65 = Total Cover		
Herb Stratum (Plot size: 5 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Polystichum munitum	5	<input type="checkbox"/> 16.7%	FACU	
2. Tolmiea menziesii	20	<input checked="" type="checkbox"/> 66.7%	FAC	
3. Heracleum maximum	5	<input type="checkbox"/> 16.7%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
		30 = Total Cover		
Woody Vine Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
		0 = Total Cover		
% Bare Ground in Herb Stratum: 65				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-34

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-6	10YR	3/2	100						Silty Clay Loam	
6-24	10YR	3/3	95	10YR	3/6	5	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    No ☒    Yes ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No Hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-35  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): flat Slope: 15.0 % / 8.5 °  
 Subregion (LRR): LRR A Lat.: 46.00375 Long.: -123.262303 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Steep drop into swale off of logging road.	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Cornus nuttallii</u>	15	<input checked="" type="checkbox"/> 37.5%	FACU	
2. <u>Acer circinatum</u>	5	<input type="checkbox"/> 12.5%	FAC	
3. <u>Frangula purshiana</u>	20	<input checked="" type="checkbox"/> 50.0%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	40	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Rubus armeniacus</u>	10	<input type="checkbox"/> 9.5%	FAC	
2. <u>Phalaris arundinacea</u>	95	<input checked="" type="checkbox"/> 90.5%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	105	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>0</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>95</u>	x 2 =	<u>190</u>
FAC species	<u>35</u>	x 3 =	<u>105</u>
FACU species	<u>15</u>	x 4 =	<u>60</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b>	<u>145</u>	<b>(A)</b>	<u>355</u> <b>(B)</b>

 Prevalence Index = B/A = 2.448

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:  
No tree cover

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-35**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR	2/2	98	7.5YR	4/6	2	C	M	Silty Clay Loam	
4-24	10YR	4/2	90	10YR	4/6	10	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: SP-36  
 Investigator(s): ES Section, Township, Range: S 15 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): none Slope: 4.0 % / 2.3 °  
 Subregion (LRR): LRR A Lat.: 46.00376987 Long.: -123.2622968 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>0</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
1. <u>Frangula purshiana</u>	<u>0</u>	<input type="checkbox"/> 0.0%	<u>FAC</u>	
2. <u>Acer circinatum</u>	<u>0</u>	<input type="checkbox"/> 0.0%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>0</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = <u>0.000</u>
1. <u>Rubus armeniacus</u>	<u>0</u>	<input type="checkbox"/> 0.0%	<u>FAC</u>	
2. <u>Oemleria cerasiformis</u>	<u>0</u>	<input type="checkbox"/> 0.0%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>0</u> = Total Cover				
Woody Vine Stratum (Plot size: _____ )				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum: <u>100</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-36**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR	3/2	98	10YR	4/6	1	C	M	Silt Loam	clay nodules
				10YR	5/3	1	C	M		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: root  
Depth (inches): 12

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
two matrix colors in the horizon

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: SP-37  
 Investigator(s): ES Section, Township, Range: S 15 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): undulating Slope: 6.0 % / 3.4 °  
 Subregion (LRR): LRR A Lat.: 46.00559288 Long.: -123.26199845 Datum: WGS 1984  
 Soil Map Unit Name: 37 - Natal silt clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: North end of wetland 3	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)
1. <u>Alnus rubra</u>	<u>40</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>80</u> x 1 = <u>80</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>110</u> x 3 = <u>330</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>215</u> (A) <u>510</u> (B) Prevalence Index = B/A = <u>2.372</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. <u>Rosa pisocarpa</u>	<u>60</u>	<input checked="" type="checkbox"/> 80.0%	<u>FAC</u>	
2. <u>Rubus ursinus</u>	<u>15</u>	<input checked="" type="checkbox"/> 20.0%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Carex obnupta</u>	<u>80</u>	<input checked="" type="checkbox"/> 80.0%	<u>OBL</u>	
2. <u>Equisetum arvense</u>	<u>10</u>	<input type="checkbox"/> 10.0%	<u>FAC</u>	
3. <u>Pteridium aquilinum</u>	<u>10</u>	<input type="checkbox"/> 10.0%	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>% Bare Ground in Herb Stratum: <u>0</u></b>				

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-37

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-9	10YR	3/1	93	10YR	4/6	7	C	M	Silt Loam	
9-15	2.5Y	4/1	98	10YR	4/6	2	C	M	Silty Clay	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: roots  
Depth (inches): 15

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Field Observations:		Wetland Hydrology Present?	
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>		

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 30-Sep-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-38  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): hummocky Slope: 30.0 % / 16.7 °  
 Subregion (LRR): LRR A Lat.: 46.005626 Long.: -123.262027 Datum: WGS 1984  
 Soil Map Unit Name: 37 - Natal silty clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland plot of pair along logging road	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>40</u>	<input checked="" type="checkbox"/> 58.8%	<u>FACU</u>	
2. <u>Alnus rubra</u>	<u>20</u>	<input checked="" type="checkbox"/> 29.4%	<u>FAC</u>	
3. <u>Thuja plicata</u>	<u>8</u>	<input type="checkbox"/> 11.8%	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>68</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>33</u> x 3 = <u>99</u> FACU species <u>130</u> x 4 = <u>520</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>163</u> (A) <u>619</u> (B) Prevalence Index = B/A = <u>3.798</u>
1. <u>Acer circinatum</u>	<u>5</u>	<input checked="" type="checkbox"/> 33.3%	<u>FAC</u>	
2. <u>Rosa gymnocarpa</u>	<u>10</u>	<input checked="" type="checkbox"/> 66.7%	<u>FACU</u>	
3. _____		<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>15</u>	<b>= Total Cover</b>		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Pteridium aquilinum</u>	<u>15</u>	<input type="checkbox"/> 18.8%	<u>FACU</u>	
2. <u>Rubus ursinus</u>	<u>15</u>	<input type="checkbox"/> 18.8%	<u>FACU</u>	
3. <u>Polystichum munitum</u>	<u>50</u>	<input checked="" type="checkbox"/> 62.5%	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>80</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				

Hydrophytic Vegetation Indicators:  
☐ 1 - Rapid Test for Hydrologic Vegetation  
☐ 2 - Dominance Test is > 50%  
☐ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-38

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR	2/1	100					Silt Loam	Organic material
1-10	10YR	3/2	100					Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: root  
Depth (inches): 10

Hydric Soil Present?    Yes ☐    No ☒

Remarks:  
Unable to dig past 10 inches. Organic material present in first soil horizon

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

Wetland Hydrology Present?    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No Hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 04-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-39  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 46.002131 Long.: -123.262746 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: West side of logging road. Wetland weaves through dense douglas firs, blackberry, etc.	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Malus fusca</u>	<u>60</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>60</u> = Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Frangula purshiana</u>	<u>20</u>	<input checked="" type="checkbox"/> 66.7%	<u>FAC</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>130</u> (A) <u>360</u> (B) Prevalence Index = B/A = <u>2.769</u>
2. <u>Symphoricarpos albus</u>	<u>10</u>	<input checked="" type="checkbox"/> 33.3%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>30</u> = Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Rubus ursinus</u>	<u>20</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Polystichum munitum</u>	<u>5</u>	<input type="checkbox"/> 12.5%	<u>FACU</u>	
3. <u>Rubus armeniacus</u>	<u>10</u>	<input checked="" type="checkbox"/> 25.0%	<u>FAC</u>	
4. <u>Equisetum telmateia</u>	<u>5</u>	<input type="checkbox"/> 12.5%	<u>FACW</u>	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>40</u> = Total Cover		
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>0</u> = Total Cover		
% Bare Ground in Herb Stratum: <u>60</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-39**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-9	10YR	3/2	100					Silty Clay Loam	
9-24	10YR	3/3	100					Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
No redox

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 04-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-40  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 46.002139 Long.: -123.262724 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>60</u> (A) <u>80</u> (B) Prevalence Index = B/A = <u>1.333</u>
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. <u>Impatiens capensis</u>	20	<input checked="" type="checkbox"/> 33.3%	FACW	
2. <u>Oenanthe sarmentosa</u>	40	<input checked="" type="checkbox"/> 66.7%	OBL	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
% Bare Ground in Herb Stratum: <u>40</u>				

Remarks:

No trees or shrubs in plot

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-40**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	7.5YR	3/2	99	7.5YR	4/6	1	C	M	Silty Clay Loam	
1-20	Gley 1	3/N	60	5YR	4/6	25	C	M	Sandy Clay	
				5YR	2.5/1	15	C	M	Sandy Clay	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)			<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)				

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:  
Three colors in the second horizon

## Hydrology

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 04-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-41  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 8.0 % / 4.6 °  
 Subregion (LRR): LRR A Lat.: 46.002239 Long.: -123.262702 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland of paired plot	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>75</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>75</u> = Total Cover	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>130</u> x 4 = <u>520</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>150</u> (A) <u>575</u> (B) Prevalence Index = B/A = <u>3.833</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b> 1. <u>Symphoricarpos albus</u> <u>10</u> <input checked="" type="checkbox"/> 50.0% <u>FACU</u> 2. <u>Frangula purshiana</u> <u>10</u> <input checked="" type="checkbox"/> 50.0% <u>FAC</u> 3. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ 4. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ 5. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ <u>20</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b> 1. <u>Pteridium aquilinum</u> <u>15</u> <input checked="" type="checkbox"/> 27.3% <u>FACU</u> 2. <u>Equisetum telmateia</u> <u>5</u> <input type="checkbox"/> 9.1% <u>FACW</u> 3. <u>Urtica dioica</u> <u>5</u> <input type="checkbox"/> 9.1% <u>FAC</u> 4. <u>Rubus ursinus</u> <u>25</u> <input checked="" type="checkbox"/> 45.5% <u>FACU</u> 5. <u>Polystichum munitum</u> <u>5</u> <input type="checkbox"/> 9.1% <u>FACU</u> 6. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ 7. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ 8. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ 9. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ 10. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ 11. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ <u>55</u> = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ 2. _____ <u>0</u> <input type="checkbox"/> 0.0% _____ <u>0</u> = Total Cover  % Bare Ground in Herb Stratum: <u>45</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-41**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-1	10YR	2/2	100				Silt Loam		
1-20	10YR	3/3	100				Silt Loam		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
No redox

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 04-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-42  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.002226 Long.: -123.262711 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Wetland of paired plots	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Phalaris arundinacea</u>	90	<input checked="" type="checkbox"/> 85.7%	FACW
2. <u>Oenanthe sarmentosa</u>	5	<input type="checkbox"/> 4.8%	OBL
3. <u>Impatiens capensis</u>	10	<input type="checkbox"/> 9.5%	FACW
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	0	<input type="checkbox"/> 0.0%	
9. _____	0	<input type="checkbox"/> 0.0%	
10. _____	0	<input type="checkbox"/> 0.0%	
11. _____	0	<input type="checkbox"/> 0.0%	
105 = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
% Bare Ground in Herb Stratum: <u>0</u>			

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 5 x 1 = 5  
 FACW species 100 x 2 = 200  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 105 (A) 205 (B)  
 Prevalence Index = B/A = 1.952

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:  
No trees or shrubs within plot

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-42**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-6	10YR	2/2	100						Silty Clay Loam	no redox
6-20	10YR	4/2	85	10YR	4/6	5	C	M	Silty Clay	
				5YR	2.5/1	10	C	M	Silty Clay	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:  
 Three colors in the second horizon

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 04-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-43  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: \_\_\_\_\_ % / \_\_\_\_\_ °  
 Subregion (LRR): LRR A Lat.: 46.001913 Long.: -123.262568 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )				
1. <u>Pseudotsuga menziesii</u>	<u>20</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)
2. <u>Frangula purshiana</u>	<u>20</u>	<input checked="" type="checkbox"/> 50.0%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>40</u>	<b>= Total Cover</b>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				
1. <u>Rubus armeniacus</u>	<u>50</u>	<input checked="" type="checkbox"/> 90.9%	<u>FAC</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>155</u> (A) <u>440</u> (B) Prevalence Index = B/A = <u>2.839</u>
2. <u>Rubus laciniatus</u>	<u>5</u>	<input type="checkbox"/> 9.1%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>55</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				
1. <u>Phalaris arundinacea</u>	<u>50</u>	<input checked="" type="checkbox"/> 83.3%	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Equisetum arvense</u>	<u>10</u>	<input type="checkbox"/> 16.7%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>60</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>0</u>	<b>= Total Cover</b>	
<b>% Bare Ground in Herb Stratum:</b> <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-43**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-8	10YR	3/2	100						Silt Loam	
8-16	10YR	3/3	100						Silt Loam	
16-20	10YR	3/2	90	10YR	5/6	10	C	M	Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 04-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-44  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: \_\_\_\_\_ % / \_\_\_\_\_ °  
 Subregion (LRR): LRR A Lat.: 46.001923 Long.: -123.262571 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Rubus armeniacus</u>	10	<input checked="" type="checkbox"/> 100.0%	FAC
2. <u>Rubus ursinus</u>	0	<input type="checkbox"/> 0.0%	FACU
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
10 = Total Cover			
Herb Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Phalaris arundinacea</u>	70	<input checked="" type="checkbox"/> 100.0%	FACW
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	0	<input type="checkbox"/> 0.0%	
9. _____	0	<input type="checkbox"/> 0.0%	
10. _____	0	<input type="checkbox"/> 0.0%	
11. _____	0	<input type="checkbox"/> 0.0%	
70 = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
% Bare Ground in Herb Stratum: <u>0</u>			

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by:

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>70</u>	x 2 =	<u>140</u>
FAC species	<u>10</u>	x 3 =	<u>30</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>80</u>	(A)	<u>170</u> (B)

Prevalence Index = B/A = 2.125

**Hydrophytic Vegetation Indicators:**

☐ 1 - Rapid Test for Hydrologic Vegetation

☒ 2 - Dominance Test is > 50%

☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-44**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	3/2	100						Silt Loam	
6-8	10YR	3/2	98	10YR	5/6	2	C	M	Silt Loam	
8-20	10YR	4/2	75	10YR	5/6	25	C	M	Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:  
Soil moist throughout,

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 04-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-45  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: \_\_\_\_\_ % / \_\_\_\_\_ °  
 Subregion (LRR): LRR A Lat.: 46.002909 Long.: -123.262753 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Plot is about 4-6' lower than surrounding upland. Shallow channel feature flows thru the wetland. Standing water in the channel outside the study area to the south. Wetland continues outside of the study area.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Fraxinus latifolia</u>	<u>30</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>30</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>130</u> x 2 = <u>260</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>130</u> (A) <u>260</u> (B) Prevalence Index = B/A = <u>2.000</u>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>5ft</u> )				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	<u>100</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum: <u>0</u>				

Remarks:

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-45**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-6	10YR	3/2	100						Muck	
6-13	10Y	2.5/1	80	10YR	5/6	20	C	M	Silt Loam	
13-20	10Y	2.5/1	95	10YR	5/6	5	C	M	Silty Clay	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text" value="0"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="12"/>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="3"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

**Project/Site:** North Mist Expansion **City/County:** Columbia **Sampling Date:** 04-Oct-22  
**Applicant/Owner:** NW Natural **State:** Oregon **Sampling Point:** SP-46  
**Investigator(s):** Ed Strohmaier **Section, Township, Range:** S 14 T 6N R 5W  
**Landform (hillslope, terrace, etc.):** **Local relief (concave, convex, none):** concave **Slope:** % / °  
**Subregion (LRR):** LRR A **Lat.:** 46.002925 **Long.:** -123.262752 **Datum:** WGS 1984  
**Soil Map Unit Name:** 58-Trehanne silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks:</b> Plot is about 4' higher than the adjacent wetland	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: 30ft )				Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
1. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: 3 (B)
2. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: 15ft )				<b>Prevalence Index worksheet:</b>
1. Symphoricarpos albus	15	<input checked="" type="checkbox"/> 60.0%	FACU	Total % Cover of: Multiply by:
2. Rubus armeniacus	10	<input checked="" type="checkbox"/> 40.0%	FAC	OBL species 0 x 1 = 0
3. _____	0	<input type="checkbox"/> 0.0%		FACW species 0 x 2 = 0
4. _____	0	<input type="checkbox"/> 0.0%		FAC species 110 x 3 = 330
5. _____	0	<input type="checkbox"/> 0.0%		FACU species 15 x 4 = 60
	25	= Total Cover		UPL species 0 x 5 = 0
<b>Herb Stratum</b> (Plot size: 5ft )				Column Total s: 125 (A) 390 (B)
1. Schedonorus arundinaceus	100	<input checked="" type="checkbox"/> 100.0%	FAC	Prevalence Index = B/A = 3.120
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: )				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: 0				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Remarks:</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-46

[illegible]

## Hydrology

Wetland Hydrology Indicators:		
<div> <div>Primary Indicators (minimum of one required; check all that apply)</div> <div> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </div> </div> <div> <div>Secondary Indicators (minimum of two required)</div> <div> <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>		
<div>Field Observations:</div> <div> <div> <div>Surface Water Present?</div> <div>Yes <input type="radio"/> No <input checked="" type="radio"/></div> <div>Depth (inches): <input type="text" value="0"/></div> </div> <div> <div>Water Table Present?</div> <div>Yes <input type="radio"/> No <input checked="" type="radio"/></div> <div>Depth (inches): <input type="text" value="0"/></div> </div> <div> <div> <div>Saturation Present?</div> <div>(includes capillary fringe)</div> </div> <div>Yes <input type="radio"/> No <input checked="" type="radio"/></div> <div>Depth (inches): <input type="text" value="0"/></div> </div> </div> <div> <div>Wetland Hydrology Present?</div> <div>Yes <input type="radio"/> No <input checked="" type="radio"/></div> </div>		
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:		
Remarks:		



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 04-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-47  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.003134 Long.: -123.262611 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland of paired plot	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
1. <u>Alnus rubra</u>	<u>70</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	= Total Cover <u>70</u>
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				
1. <u>Corylus cornuta</u>	<u>50</u>	<input checked="" type="checkbox"/> 71.4%	<u>FACU</u>	
2. <u>Sambucus racemosa</u>	<u>10</u>	<input type="checkbox"/> 14.3%	<u>FACU</u>	
3. <u>Oemleria cerasiformis</u>	<u>10</u>	<input type="checkbox"/> 14.3%	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>90</u> x 4 = <u>360</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>190</u> (A) <u>660</u> (B) Prevalence Index = B/A = <u>3.474</u>
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
Herb Stratum (Plot size: <u>5 feet</u> )				
1. <u>Urtica dioica</u>	<u>15</u>	<input checked="" type="checkbox"/> 30.0%	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rubus ursinus</u>	<u>10</u>	<input checked="" type="checkbox"/> 20.0%	<u>FACU</u>	
3. <u>Polystichum munitum</u>	<u>10</u>	<input checked="" type="checkbox"/> 20.0%	<u>FACU</u>	
4. <u>Tolmiea menziesii</u>	<u>15</u>	<input checked="" type="checkbox"/> 30.0%	<u>FAC</u>	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
= Total Cover <u>50</u>				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	% Bare Ground in Herb Stratum: <u>50</u>
= Total Cover <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-47

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-16	10YR	3/3	100				Silty Clay Loam		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):		Hydric Soil Present?
Type: <u>Root restriction</u>		Yes <input type="radio"/> No <input checked="" type="radio"/>
Depth (inches): <u>16</u>		

Remarks:  
No redox

## Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 04-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-48  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 3.0 % / 1.7 °  
 Subregion (LRR): LRR A Lat.: 46.003141 Long.: -123.262639 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Alnus rubra</u>	<u>5</u>	<input type="checkbox"/> 5.6%	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Salix lasiandra</u>	<u>85</u>	<input checked="" type="checkbox"/> 94.4%	<u>FACW</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>90</u> = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Physocarpus capitatus</u>	<u>40</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>125</u> x 2 = <u>250</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>190</u> (A) <u>405</u> (B) Prevalence Index = B/A = <u>2.132</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>40</u> = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Oenanthse sarmentosa</u>	<u>20</u>	<input checked="" type="checkbox"/> 33.3%	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Urtica dioica</u>	<u>10</u>	<input type="checkbox"/> 16.7%	<u>FAC</u>	
3. <u>Tolmiea menziesii</u>	<u>30</u>	<input checked="" type="checkbox"/> 50.0%	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>60</u> = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<u>0</u> = Total Cover				
<b>% Bare Ground in Herb Stratum:</b> <u>45</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-48**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR	3/2	95	10YR	4/6	5	C	PL	Silty Clay Loam	
7-24	10YR	4/1	90	10YR	4/6	10	C	PL	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 04-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-49  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.004281 Long.: -123.262716 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )				
1. <u>Pseudotsuga menziesii</u>	<u>10</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>10</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>115</u> (A) <u>350</u> (B) Prevalence Index = B/A = <u>3.043</u>
1. <u>Fraxinus latifolia</u>	<u>5</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Ranunculus repens</u>	<u>20</u>	<input checked="" type="checkbox"/> 20.0%	<u>FAC</u>	
2. <u>Alopecurus pratensis</u>	<u>80</u>	<input checked="" type="checkbox"/> 80.0%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>0</u>				

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-49**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-20	10YR	2/2	100				Silt Loam		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	
Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 04-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-50  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.004272 Long.: -123.262703 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Fraxinus latifolia</u>	<u>0</u>	<input type="checkbox"/> 0.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>0</u> = Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>42</u> x 2 = <u>84</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>112</u> (A) <u>304</u> (B) Prevalence Index = B/A = <u>2.714</u>
1. <u>Malus fusca</u>	<u>0</u>	<input type="checkbox"/> 0.0%	<u>FACW</u>	
2. <u>Symphoricarpos albus</u>	<u>10</u>	<input checked="" type="checkbox"/> 83.3%	<u>FACU</u>	
3. <u>Fraxinus latifolia</u>	<u>2</u>	<input type="checkbox"/> 16.7%	<u>FACW</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>12</u> = Total Cover		
Herb Stratum (Plot size: <u>5ft</u> )				
1. <u>Phalaris arundinacea</u>	<u>40</u>	<input checked="" type="checkbox"/> 40.0%	<u>FACW</u>	
2. <u>Alopecurus pratensis</u>	<u>40</u>	<input checked="" type="checkbox"/> 40.0%	<u>FAC</u>	
3. <u>Ranunculus repens</u>	<u>10</u>	<input type="checkbox"/> 10.0%	<u>FAC</u>	
4. <u>Equisetum arvense</u>	<u>10</u>	<input type="checkbox"/> 10.0%	<u>FAC</u>	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>100</u> = Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>0</u> = Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-50

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR	2/2	80	10YR	3/6	20	C	PL	Silt Loam	
5-18	10YR	2/2	95	10YR	3/4	5	C	M	Silt Loam	
18-20	10YR	2/2	90	10YR	3/4	10	C	M		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 04-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-51  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): undulating Slope: 2.0 % / 1.1 °  
 Subregion (LRR): LRR A Lat.: 46.003745 Long.: -123.262796 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Wetland confirmation plot on edge of reed canary grass	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Phalaris arundinacea</u>	100	<input checked="" type="checkbox"/> 100.0%	FACW
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	0	<input type="checkbox"/> 0.0%	
9. _____	0	<input type="checkbox"/> 0.0%	
10. _____	0	<input type="checkbox"/> 0.0%	
11. _____	0	<input type="checkbox"/> 0.0%	
100 = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
% Bare Ground in Herb Stratum: <u>0</u>			

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 100 x 2 = 200  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 100 (A) 200 (B)  
 Prevalence Index = B/A = 2.000

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:  
No trees or shrubs in plot

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-51**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-4	10YR	3/3	100						Silty Clay Loam	no redox
4-10	10YR	2/2	95	7.5YR	4/6	5	C	PL	Silty Clay Loam	
10-16	10YR	2/2	100						Silty Clay Loam	no redox

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:		Wetland Hydrology Present?	
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>

**Describe Recorded Data** (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 05-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-52  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 3.0 % / 1.7 °  
 Subregion (LRR): LRR A Lat.: 46.004464 Long.: -123.262514 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Pseudotsuga menziesii</u>	8	<input checked="" type="checkbox"/> 100.0%	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	8	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Prunus emarginata</u>	10	<input checked="" type="checkbox"/> 100.0%	FACU	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>18</u> x 4 = <u>72</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>118</u> (A) <u>272</u> (B) Prevalence Index = B/A = <u>2.305</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	10	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	100	<input checked="" type="checkbox"/> 100.0%	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-52**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	3/3	100						Silt Loam	
6-12	10YR	2/2	98	5YR	4/6	2	C	M	Silty Clay Loam	
12-18	10YR	2/1	100						Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
 not quite enough redox to meet f6

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
 No Hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 05-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-53  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.004469 Long.: -123.262488 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				
1. <u>Rosa pisocarpa</u>	10	<input checked="" type="checkbox"/> 58.8%	FAC	
2. <u>Symphoricarpos albus</u>	5	<input checked="" type="checkbox"/> 29.4%	FACU	
3. <u>Rubus ursinus</u>	2	<input type="checkbox"/> 11.8%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
17 = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				
1. <u>Phalaris arundinacea</u>	75	<input checked="" type="checkbox"/> 75.0%	FACW	
2. <u>Alopecurus pratensis</u>	25	<input checked="" type="checkbox"/> 25.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
100 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)  
 Total Number of Dominant Species Across All Strata: 4 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>75</u>	x 2 = <u>150</u>
FAC species <u>35</u>	x 3 = <u>105</u>
FACU species <u>7</u>	x 4 = <u>28</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>117</u> (A)	<u>283</u> (B)
Prevalence Index = B/A = <u>2.419</u>	

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-53**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR	2/2	80	10YR	4/6	20	C	PL	Silt Loam	
8-16	10YR	2/2	95	10YR	4/6	5	C	M	Silty Clay Loam	
16-20	10YR	2/2	95	10YR	4/6	5	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 05-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-54  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.005558 Long.: -123.262503 Datum: WGS 1984  
 Soil Map Unit Name: 37 - Natal silty clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Toe of slope on west side of road	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. <u>Juncus effusus</u>	40	<input checked="" type="checkbox"/> 40.0%	FACW
2. <u>Agrostis stolonifera</u>	5	<input type="checkbox"/> 5.0%	FAC
3. <u>Rubus ursinus</u>	5	<input type="checkbox"/> 5.0%	FACU
4. <u>Phalaris arundinacea</u>	50	<input checked="" type="checkbox"/> 50.0%	FACW
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	0	<input type="checkbox"/> 0.0%	
9. _____	0	<input type="checkbox"/> 0.0%	
10. _____	0	<input type="checkbox"/> 0.0%	
11. _____	0	<input type="checkbox"/> 0.0%	
100 = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
% Bare Ground in Herb Stratum: <u>0</u>			

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 90 x 2 = 180

FAC species 5 x 3 = 15

FACU species 5 x 4 = 20

UPL species 0 x 5 = 0

Column Totals: 100 (A) 215 (B)

Prevalence Index = B/A = 2.150

**Hydrophytic Vegetation Indicators:**

☒ 1 - Rapid Test for Hydrologic Vegetation

☒ 2 - Dominance Test is > 50%

☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:  
No trees, No shrubs

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-54**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features				Texture	Remarks
	Color (moist)			Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	3/3						Silty Clay Loam	dense, fine roots
3-8	10YR	5/3	80	5YR	5/8	20	C	M/PL	Silty Clay Loam
8-22	10YR	4/3	75	5YR	5/8	15	C	M	
				2.5Y	6/3	10			

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:  
three colors in third soil horizon, chroma is high for hydric soil indicators, but there are redoximorphic features present

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:		Wetland Hydrology Present?	
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>		

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 05-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-55  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): flat Slope: 15.0 % / 8.5 °  
 Subregion (LRR): LRR A Lat.: 46.005579 Long.: -123.262469 Datum: WGS 1984  
 Soil Map Unit Name: 37 - Natal silty clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Plot on slope from road to wetland	

## VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Pseudotsuga menziesii</u>	25	<input checked="" type="checkbox"/> 38.5%	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. <u>Frangula purshiana</u>	40	<input checked="" type="checkbox"/> 61.5%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	65	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Malus fusca</u>	10	<input checked="" type="checkbox"/> 40.0%	FACW	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>170</u> (A) <u>545</u> (B) Prevalence Index = B/A = <u>3.206</u>
2. <u>Prunus emarginata</u>	5	<input checked="" type="checkbox"/> 20.0%	FACU	
3. <u>Symphoricarpos albus</u>	10	<input checked="" type="checkbox"/> 40.0%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Berberis nervosa</u>	5	<input type="checkbox"/> 6.3%	UPL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Agrostis stolonifera</u>	50	<input checked="" type="checkbox"/> 62.5%	FAC	
3. <u>Rubus ursinus</u>	10	<input type="checkbox"/> 12.5%	FACU	
4. <u>Phalaris arundinacea</u>	15	<input type="checkbox"/> 18.8%	FACW	
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>15</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-55**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR	3/3	99	10YR	5/8	1	C	M	Silty Clay Loam	
4-20	10YR	4/3	96	7.5YR	5/6	4	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 05-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-56  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.00552 Long.: -123.262522 Datum: WGS 1984  
 Soil Map Unit Name: 37-Natal silty clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>30</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	= Total Cover <u>30</u>
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				
1. <u>Malus fusca</u>	<u>5</u>	<input checked="" type="checkbox"/> 25.0%	<u>FACW</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>150</u> (A) <u>395</u> (B) Prevalence Index = B/A = <u>2.633</u>
2. <u>Fraxinus latifolia</u>	<u>10</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACW</u>	
3. <u>Rubus ursinus</u>	<u>5</u>	<input checked="" type="checkbox"/> 25.0%	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	= Total Cover <u>20</u>
Herb Stratum (Plot size: <u>5ft</u> )				
1. <u>Phalaris arundinacea</u>	<u>75</u>	<input checked="" type="checkbox"/> 75.0%	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Alopecurus pratensis</u>	<u>20</u>	<input checked="" type="checkbox"/> 20.0%	<u>FAC</u>	
3. <u>Agrostis gigantea</u>	<u>5</u>	<input type="checkbox"/> 5.0%	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
				= Total Cover <u>100</u>
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-56

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR	2/2	100							
6-10	10YR	2/2	95	10YR	4/6	5	C	PL	Silty Clay Loam	
10-16	10YR	2/2	85	10YR	4/6	15	C	M	Silty Clay Loam	
16-20	10YR	4/2	80	10YR	4/6	20	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 05-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-57  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.004887 Long.: -123.262357 Datum: WGS 1984  
 Soil Map Unit Name: 37-Natal silty clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )				
1. <u>Pseudotsuga menziesii</u>	<u>40</u>	<input checked="" type="checkbox"/> 72.7%	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)
2. <u>Acer macrophyllum</u>	<u>15</u>	<input checked="" type="checkbox"/> 27.3%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>55</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				
1. <u>Symphoricarpos albus</u>	<u>25</u>	<input checked="" type="checkbox"/> 71.4%	<u>FACU</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>390</u> (B) Prevalence Index = B/A = <u>3.545</u>
2. <u>Rosa pisocarpa</u>	<u>10</u>	<input checked="" type="checkbox"/> 28.6%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>35</u>	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				
1. <u>Phalaris arundinacea</u>	<u>20</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>20</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>0</u>	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>80</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-57**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR	2/2	98	10YR	3/6	2	C	M	Silty Clay Loam	
2-12	10YR	2/2	100						Silty Clay Loam	
12-18	10YR	2/2	90	7.5YR	5/6	10	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 05-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-58  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.004904 Long.: -123.262364 Datum: WGS 1984  
 Soil Map Unit Name: 37-Natal silty clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )					
1. _____		0	<input type="checkbox"/> 0.0%		
2. _____		0	<input type="checkbox"/> 0.0%		
3. _____		0	<input type="checkbox"/> 0.0%		
4. _____		0	<input type="checkbox"/> 0.0%		
		0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )					
1. <u>Spiraea douglasii</u>		25	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____		0	<input type="checkbox"/> 0.0%		
3. _____		0	<input type="checkbox"/> 0.0%		
4. _____		0	<input type="checkbox"/> 0.0%		
5. _____		0	<input type="checkbox"/> 0.0%		
		25	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )					
1. <u>Phalaris arundinacea</u>		100	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____		0	<input type="checkbox"/> 0.0%		
3. _____		0	<input type="checkbox"/> 0.0%		
4. _____		0	<input type="checkbox"/> 0.0%		
5. _____		0	<input type="checkbox"/> 0.0%		
6. _____		0	<input type="checkbox"/> 0.0%		
7. _____		0	<input type="checkbox"/> 0.0%		
8. _____		0	<input type="checkbox"/> 0.0%		
9. _____		0	<input type="checkbox"/> 0.0%		
10. _____		0	<input type="checkbox"/> 0.0%		
11. _____		0	<input type="checkbox"/> 0.0%		
		100	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)					
1. _____		0	<input type="checkbox"/> 0.0%		
2. _____		0	<input type="checkbox"/> 0.0%		
		0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>0</u>					

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>125</u>	x 2 = <u>250</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b> <u>125</u> (A)	<u>250</u> (B)
Prevalence Index = B/A = <u>2.000</u>	

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-58**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-4	10YR	2/2	100						Silty Clay Loam	
4-12	10YR	2/2	95	10YR	3/6	5	C	M	Silty Clay Loam	
12-18	10YR	2/2	90	7.5YR	4/6	10	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 05-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-59  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): undulating Slope: 7.0 % / 4.0 °  
 Subregion (LRR): LRR A Lat.: 46.006338 Long.: -123.263445 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: small conifer forest on edge of road before field of reed canary grass	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	95	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
95 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>100</u> x 4 = <u>400</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>450</u> (B) Prevalence Index = B/A = <u>3.750</u>
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Crataegus monogyna</u>	5	<input checked="" type="checkbox"/> 100.0%	FAC	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
5 = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	5	<input checked="" type="checkbox"/> 25.0%	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rubus ursinus</u>	5	<input checked="" type="checkbox"/> 25.0%	FACU	
3. <u>Tolmiea menziesii</u>	5	<input checked="" type="checkbox"/> 25.0%	FAC	
4. <u>Equisetum telmateia</u>	5	<input checked="" type="checkbox"/> 25.0%	FACW	
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
20 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>80</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-59

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-5	10YR	2/2	100						Silty Clay Loam	
5-20	10YR	2/2	98	10YR	3/6	2	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:		Wetland Hydrology Present?	
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>

**Describe Recorded Data** (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No Hydrology present



Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 05-Oct-22

Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-60

Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 3.0 % / 1.7

Subregion (LRR): LRR A Lat.: 46.006309 Long.: -123.263478 Datum: WGS 1984

Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Hydrophytic Vegetation Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?    Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

Tree Stratum (Plot size: _____)		Species?	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. _____			0	<input type="checkbox"/> 0.0%	
2. _____			0	<input type="checkbox"/> 0.0%	
3. _____			0	<input type="checkbox"/> 0.0%	
4. _____			0	<input type="checkbox"/> 0.0%	
			0	= Total Cover	
<b>Sapling/Shrub Stratum</b> (Plot size: _____)					
1. _____			0	<input type="checkbox"/> 0.0%	
2. _____			0	<input type="checkbox"/> 0.0%	
3. _____			0	<input type="checkbox"/> 0.0%	
4. _____			0	<input type="checkbox"/> 0.0%	
5. _____			0	<input type="checkbox"/> 0.0%	
			0	= Total Cover	
<b>Herb Stratum</b> (Plot size: 5 feet _____)					
1. <i>Carex obnupta</i>	30	<input checked="" type="checkbox"/> 30.0%	OBL		
2. <i>Phalaris arundinacea</i>	70	<input checked="" type="checkbox"/> 70.0%	FACW		
3. _____	0	<input type="checkbox"/> 0.0%			
4. _____	0	<input type="checkbox"/> 0.0%			
5. _____	0	<input type="checkbox"/> 0.0%			
6. _____	0	<input type="checkbox"/> 0.0%			
7. _____	0	<input type="checkbox"/> 0.0%			
8. _____	0	<input type="checkbox"/> 0.0%			
9. _____	0	<input type="checkbox"/> 0.0%			
10. _____	0	<input type="checkbox"/> 0.0%			
11. _____	0	<input type="checkbox"/> 0.0%			
			100	= Total Cover	
<b>Woody Vine Stratum</b> (Plot size: _____)					
1. _____	0	<input type="checkbox"/> 0.0%			
2. _____	0	<input type="checkbox"/> 0.0%			
			0	= Total Cover	
% Bare Ground in Herb Stratum: 0 _____					

Dominance Test worksheet:			
Number of Dominant Species That are OBL, FACW, or FAC:	2	(A)	
Total Number of Dominant Species Across All Strata:	2	(B)	
Percent of dominant Species That Are OBL, FACW, or FAC:	100.0%	(A/B)	

Prevalence Index worksheet:			
Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Total s:	100	(A)	170 (B)
Prevalence Index = B/A = 1.700			

Hydrophytic Vegetation Indicators:	
<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation	
<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%	
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>	
<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	

Hydrophytic Vegetation Present?	
Yes	<input checked="" type="radio"/>
No	<input type="radio"/>

Western Mountains, Valleys, and Coast - Version 2.0



## Soil

Sampling Point: SP-60

[illegible]

## Hydrology

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			<b>Secondary Indicators (minimum of two required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)		
<b>Field Observations:</b>				
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b>	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>		
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:				
Remarks:				



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 05-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-61  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 2.0 % / 1.1 °  
 Subregion (LRR): LRR A Lat.: 46.004977 Long.: -123.262438 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Open field, mostly flat	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. <u>Phalaris arundinacea</u>	100	<input checked="" type="checkbox"/> 100.0%	FACW
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	0	<input type="checkbox"/> 0.0%	
9. _____	0	<input type="checkbox"/> 0.0%	
10. _____	0	<input type="checkbox"/> 0.0%	
11. _____	0	<input type="checkbox"/> 0.0%	
100 = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
% Bare Ground in Herb Stratum: <u>0</u>			

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 100 x 2 = 200

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 100 (A) 200 (B)

Prevalence Index = B/A = 2.000

**Hydrophytic Vegetation Indicators:**

☒ 1 - Rapid Test for Hydrologic Vegetation

☒ 2 - Dominance Test is > 50%

☐ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-61

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-5	10YR	3/3	100						Silty Clay Loam	
5-12	10YR	2/2	98	5YR	4/6	2	C	M	Silty Clay Loam	
12-18	10YR	2/2	100						Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 05-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-62  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 3.0 % / 1.7 °  
 Subregion (LRR): LRR A Lat.: 46.004994 Long.: -123.262425 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.000</u>
= Total Cover				
_____				
_____				
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover				
_____				
_____				
_____				
_____				
_____				
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Phalaris arundinacea</u>	100	<input checked="" type="checkbox"/> 100.0%	FACW	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover				
100				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover				
0				
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-62

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	3/2	95	7.5YR	5/8	5	C	PL	Silty Clay Loam	
6-22	10YR	5/2	92	7.5YR	5/8	8	C	PL	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 05-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-63  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Roadside ditch Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.00579 Long.: -123.262278 Datum: WGS 1984  
 Soil Map Unit Name: 37-Natal silty clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Wetland is contained in the south end of the excavated roadside ditch.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>90</u> x 1 = <u>90</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>115</u> (B) Prevalence Index = B/A = <u>1.150</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Herb Stratum (Plot size: <u>5ft</u> )				
1. <u>Carex obnupta</u>	90	<input checked="" type="checkbox"/> 90.0%	OBL	
2. <u>Juncus effusus</u>	5	<input type="checkbox"/> 5.0%	FACW	
3. <u>Cirsium arvense</u>	5	<input type="checkbox"/> 5.0%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
100 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>0</u>				
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-63

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR	2/3	90	10YR	3/6	10	C	M		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):		Hydric Soil Present?
Type: <u>Rock</u>		Yes <input checked="" type="radio"/> No <input type="radio"/>
Depth (inches): <u>5</u>		

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> FAC-neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Frost Heave Hummocks (D7)	

Field Observations:	
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 05-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-64  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Roadside ditch Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.005778 Long.: -123.262291 Datum: WGS 1984  
 Soil Map Unit Name: 37-Natal silty clay loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Plot is on the shoulder of the road and is about 1.5ft higher than the wetland in the ditch.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>55</u> x 3 = <u>165</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>55</u> (A) <u>165</u> (B) Prevalence Index = B/A = <u>3.000</u>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover				
Herb Stratum (Plot size: <u>5ft</u> )				
1. Lotus corniculatus	5	<input type="checkbox"/> 9.1%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Trifolium repens	5	<input type="checkbox"/> 9.1%	FAC	
3. Agrostis stolonifera	40	<input checked="" type="checkbox"/> 72.7%	FAC	
4. Schedonorus arundinaceus	5	<input type="checkbox"/> 9.1%	FAC	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover				
% Bare Ground in Herb Stratum: <u>45</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-64**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-4	10YR	3/2	100				Silt Loam	Soil mixed with crushed rock from adjacent road.	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 06-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-65  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.007713 Long.: -123.265612 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Plot is on the right bank, of the downstream floodplain which is about 8 feet above the active channel. Plot is also about 10 feet north of the top of the stream bank, and 8 feet from the toe of the road prism.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				Prevalence Index worksheet:
1. <u>Rubus armeniacus</u>	30	<input checked="" type="checkbox"/> 100.0%	FAC	Total % Cover of: _____ Multiply by: _____
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>95</u> x 2 = <u>190</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>35</u> x 3 = <u>105</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u> x 4 = <u>0</u>
	30	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
Herb Stratum (Plot size: <u>5ft</u> )				Col umn Total s: <u>130</u> (A) <u>295</u> (B)
1. <u>Phalaris arundinacea</u>	95	<input checked="" type="checkbox"/> 95.0%	FACW	Prevalence Index = B/A = <u>2.269</u>
2. <u>Urtica dioica</u>	5	<input type="checkbox"/> 5.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				

Hydrophytic Vegetation Indicators:  
☐ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☐ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-65**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-20	10YR	4/4	100				Silt		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	
Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:  
Soil is slightly moist.

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 06-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-66  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.007538 Long.: -123.265363 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Plot is in an existing utility corridor.	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )				
1. <u>Pseudotsuga menziesii</u>	<u>5</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>5</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>265</u> (B) Prevalence Index = B/A = <u>2.208</u>
1. <u>Rubus armeniacus</u>	<u>15</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>15</u>	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	<u>100</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>100</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-66**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	3/4	100						Silt	
6-12	10YR	3/4	80	10YR	2/2	20	C	M	Silt Loam	
12-18	10YR	3/3	90	10YR	3/6	10	C	M	Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 06-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-67  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Channel (active) Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.007576 Long.: -123.265737 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Plot is on vegetated gravel bar of WET-7B	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Herb Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Urtica dioica</u>	40	<input checked="" type="checkbox"/> 61.5%	FAC
2. <u>Phalaris arundinacea</u>	10	<input type="checkbox"/> 15.4%	FACW
3. <u>Oenantho sarmentosa</u>	10	<input type="checkbox"/> 15.4%	OBL
4. <u>Glyceria elata</u>	5	<input type="checkbox"/> 7.7%	FACW
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	0	<input type="checkbox"/> 0.0%	
9. _____	0	<input type="checkbox"/> 0.0%	
10. _____	0	<input type="checkbox"/> 0.0%	
11. _____	0	<input type="checkbox"/> 0.0%	
65 = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
% Bare Ground in Herb Stratum: <u>35</u>			

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL species 10 x 1 = 10  
 FACW species 15 x 2 = 30  
 FAC species 40 x 3 = 120  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Col umn Total s: 65 (A) 160 (B)  
 Prevalence Index = B/A = 2.462

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☒ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-67

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	3/3	100				Coarse Sand	Mixed with cobbles and pebbles.

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):		Hydric Soil Present?
Type: <u>Compacted river substrate</u>		Yes <input checked="" type="radio"/> No <input type="radio"/>
Depth (inches): <u>3</u>		

Remarks:  
Vegetated gravel bar below the OHWL of the stream.

## Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input checked="" type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry Season Water Table (C2)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input checked="" type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-neutral Test (D5)
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
	<input type="checkbox"/> Frost Heave Hummocks (D7)

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 06-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-68  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Channel (active) Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.007625 Long.: -123.265635 Datum: WGS 1984  
 Soil Map Unit Name: 58-Trehanne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Plot is on vegetated gravel bar of WET-7a.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>35</u> x 1 = <u>35</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>65</u> (A) <u>95</u> (B) Prevalence Index = B/A = <u>1.462</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Herb Stratum (Plot size: <u>5ft</u> )				
1. <u>Scirpus microcarpus</u>	25	<input checked="" type="checkbox"/> 38.5%	OBL	
2. <u>Phalaris arundinacea</u>	25	<input checked="" type="checkbox"/> 38.5%	FACW	
3. <u>Glyceria elata</u>	5	<input type="checkbox"/> 7.7%	FACW	
4. <u>Ranunculus sceleratus</u>	5	<input type="checkbox"/> 7.7%	OBL	
5. <u>Persicaria hydropiperoides</u>	5	<input type="checkbox"/> 7.7%	OBL	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
65 = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>35</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-68**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>			Loc <sup>2</sup>
0-3	10YR	3/3	100					Coarse Sand	Mixed with cobbles and gravel

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):		Hydric Soil Present?
Type: <u>River rock</u>		Yes <input checked="" type="radio"/> No <input type="radio"/>
Depth (inches): <u>3</u>		

Remarks:  
Plot is located on a vegetated gravel bar below the OHWL of the stream.

## Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry Season Water Table (C2)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input checked="" type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
	<input type="checkbox"/> Frost Heave Hummocks (D7)

Field Observations:	
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 06-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-69  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.007838 Long.: -123.264916 Datum: WGS 1984  
 Soil Map Unit Name: 24 - Hapludalfs-Udifulvents complex NWI classification: PFOA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Mapped NWI polygon - Pit dug for confirmation of mapped data. Alongside ST-01.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)
1. <u>Thuja plicata</u>	<u>25</u>	<input checked="" type="checkbox"/> 31.3%	<u>FAC</u>	
2. <u>Alnus rubra</u>	<u>50</u>	<input checked="" type="checkbox"/> 62.5%	<u>FAC</u>	
3. <u>Pseudotsuga menziesii</u>	<u>5</u>	<input type="checkbox"/> 6.3%	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>80</u> = Total Cover	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>135</u> x 3 = <u>405</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>175</u> (A) <u>565</u> (B) Prevalence Index = B/A = <u>3.229</u>
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				
1. <u>Sambucus racemosa</u>	<u>5</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACU</u>	
2. <u>Cornus nuttallii</u>	<u>5</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>10</u> = Total Cover	
Herb Stratum (Plot size: <u>5 feet</u> )				
1. <u>Polystichum munitum</u>	<u>10</u>	<input type="checkbox"/> 11.8%	<u>FACU</u>	
2. <u>Rubus ursinus</u>	<u>15</u>	<input checked="" type="checkbox"/> 17.6%	<u>FACU</u>	
3. <u>Oplopanax horridus</u>	<u>10</u>	<input type="checkbox"/> 11.8%	<u>FAC</u>	
4. <u>Oxalis trillifolia</u>	<u>20</u>	<input checked="" type="checkbox"/> 23.5%	<u>FAC</u>	
5. <u>Tolmiea menziesii</u>	<u>20</u>	<input checked="" type="checkbox"/> 23.5%	<u>FAC</u>	
6. <u>Urtica dioica</u>	<u>10</u>	<input type="checkbox"/> 11.8%	<u>FAC</u>	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>85</u> = Total Cover	
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>0</u> = Total Cover	
% Bare Ground in Herb Stratum: <u>15</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-69**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-24	10YR	4/4	100					Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
No redox

## Hydrology

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
		<b>Wetland Hydrology Present?</b>	Yes <input type="radio"/> No <input checked="" type="radio"/>

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No Hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 06-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-70  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 3.0 % / 1.7 °  
 Subregion (LRR): LRR A Lat.: 46.007941 Long.: -123.265521 Datum: WGS 1984  
 Soil Map Unit Name: 24 - Hapludalfs-Udfluvents complex NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Low spot north of logging road, west of stream 01	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Malus fusca</u>	<u>30</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>115</u> (A) <u>230</u> (B) Prevalence Index = B/A = <u>2.000</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. <u>Malus fusca</u>	<u>5</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Carex obnupta</u>	<u>25</u>	<input checked="" type="checkbox"/> 31.3%	<u>OBL</u>	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. <u>Solanum dulcamara</u>	<u>25</u>	<input checked="" type="checkbox"/> 31.3%	<u>FAC</u>	
3. <u>Ranunculus repens</u>	<u>15</u>	<input type="checkbox"/> 18.8%	<u>FAC</u>	
4. <u>Oenanthe sarmentosa</u>	<u>15</u>	<input type="checkbox"/> 18.8%	<u>OBL</u>	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Remarks:</b>
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ <u>0</u> <input type="checkbox"/> 0.0% 2. _____ <u>0</u> <input type="checkbox"/> 0.0% <u>0</u> = Total Cover % Bare Ground in Herb Stratum: <u>20</u>
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>Woody Vine Stratum (Plot size: _____)</b>				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-70**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	3/3	100						Silt Loam	organic material
3-24	10YR	4/2	85	5YR	4/6	15	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 06-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-71  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 2.0 % / 1.1 °  
 Subregion (LRR): LRR A Lat.: 46.007914 Long.: -123.265518 Datum: WGS 1984  
 Soil Map Unit Name: 24 - Hapludalfs-Udifulvents complex NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
1. <u>Alnus rubra</u>	<u>75</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>115</u> x 3 = <u>345</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>155</u> (A) <u>505</u> (B) Prevalence Index = B/A = <u>3.258</u>
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Crataegus monogyna</u>	<u>5</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Polystichum munitum</u>	<u>25</u>	<input checked="" type="checkbox"/> 33.3%	<u>FACU</u>	
2. <u>Rubus ursinus</u>	<u>15</u>	<input checked="" type="checkbox"/> 20.0%	<u>FACU</u>	
3. <u>Rubus armeniacus</u>	<u>35</u>	<input checked="" type="checkbox"/> 46.7%	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
% Bare Ground in Herb Stratum: <u>25</u> = Total Cover				

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-71

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR	3/6	100					

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining, M=Matrix

## Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                            |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                        |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                        |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                     |
| <input type="checkbox"/> Sandy Muck Mineral (S1)           | <input type="checkbox"/> Depleted Dark Surface (F7)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox depressions (F8)                      |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 2 cm Muck (A10)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if present):

Type: Rock restrictionDepth (inches): 6Hydric Soil Present? Yes ☐ No ☒

Remarks:

Gravel compaction from logging road egde

## Hydrology

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Salt Crust (B11)   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                              |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)               |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                            |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)               |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)                  |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Other (Explain in Remarks)                               |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)  
☐ Drainage Patterns (B10)  
☐ Dry Season Water Table (C2)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Geomorphic Position (D2)  
☐ Shallow Aquitard (D3)  
☐ FAC-neutral Test (D5)  
☐ Raised Ant Mounds (D6) (LRR A)  
☐ Frost Heave Hummocks (D7)

## Field Observations:

Surface Water Present? Yes ☐ No ☒Depth (inches): Water Table Present? Yes ☐ No ☒Depth (inches): Saturation Present?  
(includes capillary fringe) Yes ☐ No ☒Depth (inches): Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 06-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-72  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 11 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): undulating Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.015112 Long.: -123.267874 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaponia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Logged area	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>50</u>	<input checked="" type="checkbox"/> 62.5%	<u>FACU</u>	
2. <u>Alnus rubra</u>	<u>30</u>	<input checked="" type="checkbox"/> 37.5%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>80</u> = Total Cover		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. <u>Acer circinatum</u>	<u>5</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>95</u> x 4 = <u>380</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>170</u> (A) <u>525</u> (B) Prevalence Index = B/A = <u>3.088</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>5</u> = Total Cover		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Carex obnupta</u>	<u>40</u>	<input checked="" type="checkbox"/> 47.1%	<u>OBL</u>	
2. <u>Rubus ursinus</u>	<u>10</u>	<input type="checkbox"/> 11.8%	<u>FACU</u>	
3. <u>Polystichum munitum</u>	<u>35</u>	<input checked="" type="checkbox"/> 41.2%	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>85</u> = Total Cover		
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>0</u> = Total Cover		
% Bare Ground in Herb Stratum: <u>20</u>				

Hydrophytic Vegetation Indicators:  
☐ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☐ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-72**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-1	10YR	2/2	100						Silt Loam	
1-3	10YR	3/3	100						Silt Loam	
3-18	10YR	4/2	99	5YR	4/6	1	C	M	Silty Clay Loam	
18-22	10YR	4/2	97	5YR	4/6	3	C	M	Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 06-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-73  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 11 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): flat Slope: 6.0 % / 3.4 °  
 Subregion (LRR): LRR A Lat.: 46.014822 Long.: -123.267962 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaptonia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: ON terrace of larger logged hillside	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: _____)				Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>1</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				<b>Prevalence Index worksheet:</b>
1. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of: _____ Multiply by: _____
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>15</u> x 1 = <u>15</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>75</u> x 2 = <u>150</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>0</u> x 3 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>10</u> x 4 = <u>40</u>
	0	<b>= Total Cover</b>		UPL species <u>0</u> x 5 = <u>0</u>
<b>Herb Stratum</b> (Plot size: _____)				Column Totals: <u>100</u> (A) <u>205</u> (B)
1. Juncus effusus	75	<input checked="" type="checkbox"/> 75.0%	FACW	Prevalence Index = B/A = <u>2.050</u>
2. Carex obnupta	15	<input type="checkbox"/> 15.0%	OBL	
3. Rubus ursinus	10	<input type="checkbox"/> 10.0%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks: no bare ground				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-73**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-11	10YR	4/2	78	10YR	5/8	20	C	M	Silty Clay Loam	organic material
				10YR	2/1	2	C	M	Silty Clay Loam	
11-20	10YR	2/1	98	5YR	4/6	2	C	M	Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:  
 Three colors in the first horizon. Likely disturbed due to logging

## Hydrology

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 06-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-74  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 11 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): undulating Slope: 6.0 % / 3.4 °  
 Subregion (LRR): LRR A Lat.: 46.014816 Long.: -123.268017 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaptonia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: On bench of logging hillside	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
		<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. <u>Symphoricarpos albus</u>	5	<input checked="" type="checkbox"/> 100.0%	FACU	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>100</u> x 4 = <u>400</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>430</u> (B) Prevalence Index = B/A = <u>3.909</u>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
		<b>= Total Cover</b>		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Agrostis stolonifera</u>	10	<input type="checkbox"/> 9.5%	FAC	
2. <u>Rubus ursinus</u>	90	<input checked="" type="checkbox"/> 85.7%	FACU	
3. <u>Pteridium aquilinum</u>	5	<input type="checkbox"/> 4.8%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
		<b>= Total Cover</b>		
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
		<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>0</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-74**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-5	10YR	4/3	95	5YR	4/6	5	C	M	Silty Clay Loam	
5-16	10YR	5/3	90	10YR	5/8	10	C	M	Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 06-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-75  
 Investigator(s): Ed Strohmaier Section, Township, Range: S 11 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Channel (active) Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.014861 Long.: -123.267858 Datum: WGS 1984  
 Soil Map Unit Name: 7D-Braun-Scaponia silt loads, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Plot is in a depression just inside the edge of the forest.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
3. _____	0	<input type="checkbox"/> 0.0%	
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Carex obnupta</u>	50	<input checked="" type="checkbox"/> 76.9%	OBL
2. <u>Lysimachia nummularia</u>	0	<input type="checkbox"/> 0.0%	FACW
3. <u>Prunella vulgaris</u>	15	<input checked="" type="checkbox"/> 23.1%	FACU
4. _____	0	<input type="checkbox"/> 0.0%	
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	0	<input type="checkbox"/> 0.0%	
9. _____	0	<input type="checkbox"/> 0.0%	
10. _____	0	<input type="checkbox"/> 0.0%	
11. _____	0	<input type="checkbox"/> 0.0%	
65 = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	
2. _____	0	<input type="checkbox"/> 0.0%	
0 = Total Cover			
% Bare Ground in Herb Stratum: <u>35</u>			

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: 50 Multiply by: 3

OBL species 50 x 1 = 50

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 15 x 4 = 60

UPL species 0 x 5 = 0

Column Total s: 65 (A) 110 (B)

Prevalence Index = B/A = 1.692

**Hydrophytic Vegetation Indicators:**

☐ 1 - Rapid Test for Hydrologic Vegetation

☐ 2 - Dominance Test is > 50%

☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-75

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR	4/2	85	10YR	4/6	15	C		Clay
4-8	10YR	4/2	98	10YR	4/6	2	C	M	Clay

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: Heavy clay  
Depth (inches): 8

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 06-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-76  
 Investigator(s): ES Section, Township, Range: S 11 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.014846 Long.: -123.26785 Datum: WGS 1984  
 Soil Map Unit Name: 7D-Braun-Scaponia silt loads, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Plot is on a mound inside the edge of the forest.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>80</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	= Total Cover <u>80</u>
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				
1. <u>Rubus ursinus</u>	<u>40</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>160</u> x 4 = <u>640</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>160</u> (A) <u>640</u> (B) Prevalence Index = B/A = <u>4.000</u>
2. <u>Mahonia nervosa</u>	<u>40</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	= Total Cover <u>80</u>
Herb Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
= Total Cover <u>0</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
= Total Cover <u>0</u>				
% Bare Ground in Herb Stratum: <u>100</u>				

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-76**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR	2/2	100					Silty Clay Loam	
2-8	10YR	3/2	95	10YR	5/4	5	D	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 06-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-77  
 Investigator(s): ES Section, Township, Range: S 11 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope: 83.9 % / 40.0 °  
 Subregion (LRR): LRR A Lat.: 46.014085 Long.: -123.268053 Datum: WGS 1984  
 Soil Map Unit Name: 7D-Braun-Scaponia silt loads, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Plot is on the south slope of the WET-10.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>10</u>	<input checked="" type="checkbox"/> 33.3%	<u>FACU</u>	
2. <u>Alnus rubra</u>	<u>20</u>	<input checked="" type="checkbox"/> 66.7%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>30</u> = Total Cover		
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u>)</b>				
1. <u>Rubus ursinus</u>	<u>60</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>120</u> x 4 = <u>480</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>140</u> (A) <u>540</u> (B) Prevalence Index = B/A = <u>3.857</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>60</u> = Total Cover		
<b>Herb Stratum (Plot size: _____)</b>				
1. <u>Polystichum munitum</u>	<u>50</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>50</u> = Total Cover		
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>0</u> = Total Cover		
% Bare Ground in Herb Stratum: <u>50</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-77

[illegible]

## Hydrology

Wetland Hydrology Indicators:		
<div> <div>Primary Indicators (minimum of one required; check all that apply)</div> <div> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </div> <div> <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks) </div> <div> <div>Secondary Indicators (minimum of two required)</div> <div> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7) </div> </div> </div>		
<div> <div>Field Observations:</div> <div> <div> <div>Surface Water Present?</div> <div>Yes <input type="radio"/> No <input checked="" type="radio"/></div> <div>Depth (inches): <input type="text" value="0"/></div> </div> <div> <div>Water Table Present?</div> <div>Yes <input type="radio"/> No <input checked="" type="radio"/></div> <div>Depth (inches): <input type="text" value="0"/></div> </div> <div> <div> <div>Saturation Present?</div> <div>(includes capillary fringe)</div> </div> <div>Yes <input type="radio"/> No <input checked="" type="radio"/></div> <div>Depth (inches): <input type="text" value="0"/></div> </div> </div> <div> <div>Wetland Hydrology Present?</div> <div>Yes <input type="radio"/> No <input checked="" type="radio"/></div> </div> </div>		
<div>Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:</div>		
<div>Remarks:</div>		



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 06-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-78  
 Investigator(s): ES Section, Township, Range: S 11 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Channel (active) Local relief (concave, convex, none): convex Slope:      % /      °  
 Subregion (LRR): LRR A Lat.: 46.014107 Long.: -123.268059 Datum: WGS 1984  
 Soil Map Unit Name: 7D-Braun-Scaponia silt loads, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Plot is on the south edge of the WET-10.	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				
1. <u>Ranunculus sceleratus</u>	65	<input checked="" type="checkbox"/> 65.0%	OBL	
2. <u>Trifolium arvense</u>	10	<input type="checkbox"/> 10.0%	UPL	
3. <u>Oenanthe sarmentosa</u>	15	<input type="checkbox"/> 15.0%	OBL	
4. <u>Glyceria elata</u>	5	<input type="checkbox"/> 5.0%	FACW	
5. <u>Symplocarpus foetidus</u>	5	<input type="checkbox"/> 5.0%	NI	
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	100	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>0</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:		Multiply by:	
OBL species	<u>80</u>	x 1 =	<u>80</u>
FACW species	<u>5</u>	x 2 =	<u>10</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>10</u>	x 5 =	<u>50</u>
<b>Column Totals:</b>	<u>95</u> (A)		<u>140</u> (B)

 Prevalence Index = B/A = 1.474

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrologic Vegetation  
☒ 2 - Dominance Test is > 50%  
☒ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-78**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	3/2	95	10YR	3/6	5	C	M	Silt Loam	
3-14	10Y	3/1	90	10YR	3/6	10	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                            |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                        |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                        |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input checked="" type="checkbox"/> Redox Dark Surface (F6)          |
| <input type="checkbox"/> Sandy Muck Mineral (S1)           | <input type="checkbox"/> Depleted Dark Surface (F7)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox depressions (F8)                      |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

Remarks:

## Hydrology

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Salt Crust (B11)   |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Aquatic Invertebrates (B13)                              |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)               |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                            |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)               |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)                  |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Other (Explain in Remarks)                               |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

**Field Observations:**Surface Water Present? Yes ☐ No ☒Depth (inches): Water Table Present? Yes ☒ No ☐Depth (inches): Saturation Present? (includes capillary fringe) Yes ☒ No ☐Depth (inches): Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 10-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-79  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): undulating Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.00986 Long.: -123.267759 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaptonia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Lower terrace on logged hillside	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Salix scouleriana</u>	<u>25</u>	<input checked="" type="checkbox"/> 55.6%	<u>FAC</u>	
2. <u>Fraxinus latifolia</u>	<u>20</u>	<input checked="" type="checkbox"/> 44.4%	<u>FACW</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>45</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. <u>Acer circinatum</u>	<u>5</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>130</u> (A) <u>260</u> (B) Prevalence Index = B/A = <u>2.000</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>5</u>	<b>= Total Cover</b>		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Carex obnupta</u>	<u>60</u>	<input checked="" type="checkbox"/> 75.0%	<u>OBL</u>	
2. <u>Rubus armeniacus</u>	<u>10</u>	<input type="checkbox"/> 12.5%	<u>FAC</u>	
3. <u>Rubus ursinus</u>	<u>10</u>	<input type="checkbox"/> 12.5%	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>80</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>0</u>	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>20</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-79**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR	2/1	100						Silt Loam	organic material
4-6	10YR	2/2	98	7.5YR	3/6	2	C	M	Silty Clay Loam	
6-13	10YR	4/2	95	10YR	5/8	5	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):		Hydric Soil Present?
Type: <u>Root restriction</u>		Yes <input checked="" type="radio"/> No <input type="radio"/>
Depth (inches): <u>13</u>		

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 10-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-80  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): undulating Slope: 4.0 % / 2.3 °  
 Subregion (LRR): LRR A Lat.: 46.009884 Long.: -123.267746 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaptonia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: _____)					Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
1. _____		0	<input type="checkbox"/> 0.0%		
2. _____		0	<input type="checkbox"/> 0.0%		
3. _____		0	<input type="checkbox"/> 0.0%		
4. _____		0	<input type="checkbox"/> 0.0%		
0 = Total Cover					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>88</u> x 4 = <u>352</u> UPL species <u>50</u> x 5 = <u>250</u> Column Totals: <u>143</u> (A) <u>612</u> (B) Prevalence Index = B/A = <u>4.280</u>
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )					
1. <u>Corylus cornuta</u>		8	<input type="checkbox"/> 18.6%	FACU	
2. <u>Pseudotsuga menziesii</u>		5	<input type="checkbox"/> 11.6%	FACU	
3. <u>Cytisus scoparius</u>		30	<input checked="" type="checkbox"/> 69.8%	UPL	
4. _____		0	<input type="checkbox"/> 0.0%		
5. _____		0	<input type="checkbox"/> 0.0%		
43 = Total Cover					
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )					
1. <u>Polystichum munitum</u>		50	<input checked="" type="checkbox"/> 50.0%	FACU	
2. <u>Berberis nervosa</u>		20	<input checked="" type="checkbox"/> 20.0%	UPL	
3. <u>Phalaris arundinacea</u>		5	<input type="checkbox"/> 5.0%	FACW	
4. <u>Rubus ursinus</u>		25	<input checked="" type="checkbox"/> 25.0%	FACU	
5. _____		0	<input type="checkbox"/> 0.0%		
6. _____		0	<input type="checkbox"/> 0.0%		
7. _____		0	<input type="checkbox"/> 0.0%		
8. _____		0	<input type="checkbox"/> 0.0%		
9. _____		0	<input type="checkbox"/> 0.0%		
10. _____		0	<input type="checkbox"/> 0.0%		
11. _____		0	<input type="checkbox"/> 0.0%		
100 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____)					
1. _____		0	<input type="checkbox"/> 0.0%		
2. _____		0	<input type="checkbox"/> 0.0%		
0 = Total Cover					
% Bare Ground in Herb Stratum: <u>0</u>					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Remarks:					Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-80

[illegible]

## Hydrology

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> </div> <div> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> </div> <div> Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> </div> </div> <div> <div> Depth (inches): <input type="text"/> </div> <div> Depth (inches): <input type="text"/> </div> <div> Depth (inches): <input type="text"/> </div> </div> <div> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> </div> </div>		
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:		
Remarks:		
No hydrology present		



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 10-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-81  
 Investigator(s): ES Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): concave Slope:      % /      °  
 Subregion (LRR): LRR A Lat.: 46.009615 Long.: -123.268006 Datum: WGS 1984  
 Soil Map Unit Name: 7D-Braun-Scaponia silt loads, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Plot is in an existing gas line corridor.	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>    </u>	0	<input type="checkbox"/> 0.0%		
2. <u>    </u>	0	<input type="checkbox"/> 0.0%		
3. <u>    </u>	0	<input type="checkbox"/> 0.0%		
4. <u>    </u>	0	<input type="checkbox"/> 0.0%		
		= Total Cover		Prevalence Index worksheet: Total % Cover of: <u>30</u> Multiply by: OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>100</u> (A) <u>175</u> (B) Prevalence Index = B/A = <u>1.750</u>
				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>



## Soil

Sampling Point: **SP-81**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR	3/2	70	10YR	3/6	15	C	PL	Silty Clay Loam	Also 10YR 4/6 concentrations in matrix
6-16	10YR	2/2	80	10YR	4/6	20	C	M	Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: Clay  
 Depth (inches): 15

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 10-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-82  
 Investigator(s): ES Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): convex Slope:      % /      °  
 Subregion (LRR): LRR A Lat.: 46.009631 Long.: -123.268037 Datum: WGS 1984  
 Soil Map Unit Name: 7D-Braun-Scaponia silt loads, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Plot is on the edge of an existing gas line corridor and recently logged area.	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				
1. <u>Rubus ursinus</u>	30	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	30	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				
1. <u>Polystichum munitum</u>	30	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	30	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<b>% Bare Ground in Herb Stratum:</b> <u>70</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>60</u>	x 4 =	<u>240</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b>	<u>60</u> (A)		<u>240</u> (B)
Prevalence Index = B/A = <u>4.000</u>			

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrologic Vegetation  
☐ 2 - Dominance Test is > 50%  
☐ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☐ No ☒

Remarks:  
 Bare ground from logging activity.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-82

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-5	10YR	3/4	100						Silty Clay	
5-7	10YR	3/3	95	10YR	5/4	5	C	M	Silty Clay Loam	
7-15	10YR	3/4	90	10YR	3/6	10	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: Clay  
Depth (inches): 15

Hydric Soil Present?    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Plot is about 1 foot higher than the wetland. Dry soil.



# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 10-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-83  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): undulating Slope: 4.0 % / 2.3 °  
 Subregion (LRR): LRR A Lat.: 46.009352 Long.: -123.267954 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaptonia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Alnus rubra</u>	<u>10</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>10</u> = Total Cover	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>80</u> x 2 = <u>160</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>155</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>2.581</u>
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				
1. <u>Salix scouleriana</u>	<u>45</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>45</u> = Total Cover	
Herb Stratum (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	<u>80</u>	<input checked="" type="checkbox"/> 80.0%	<u>FACW</u>	
2. <u>Rumex crispus</u>	<u>5</u>	<input type="checkbox"/> 5.0%	<u>FAC</u>	
3. <u>Rubus ursinus</u>	<u>15</u>	<input type="checkbox"/> 15.0%	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>100</u> = Total Cover	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
			<u>0</u> = Total Cover	
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-83**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-2	10YR	3/3	100						Silt Loam	
2-16	10YR	3/2	90	10YR	5/8	5	C	M	Silty Clay Loam	
				10YR	5/6	5	C	M		
16-18	10YR	2/1	100						Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 10-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-84  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): undulating Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.009338 Long.: -123.267966 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaptonia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Alnus rubra</u>	<u>10</u>	<input checked="" type="checkbox"/> 28.6%	<u>FAC</u>	
2. <u>Pseudotsuga menziesii</u>	<u>25</u>	<input checked="" type="checkbox"/> 71.4%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>35</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>135</u> (A) <u>440</u> (B) Prevalence Index = B/A = <u>3.259</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 feet</u> )				
1. <u>Rumex crispus</u>	<u>5</u>	<input type="checkbox"/> 5.0%	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rubus ursinus</u>	<u>10</u>	<input type="checkbox"/> 10.0%	<u>FACU</u>	
3. <u>Agrostis stolonifera</u>	<u>85</u>	<input checked="" type="checkbox"/> 85.0%	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-84**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-16	10YR	3/3	97	10YR	5/8	3	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	
Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No Hydrology present

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>North Mist Expansion</u>	City/County: <u>Columbia</u>	Sampling Date: <u>10/10/22</u>
Applicant/Owner: <u>NW Natural</u>	State: <u>OR</u>	Sampling Point: <u>SP-85</u>
Investigator(s): <u>ES</u>	Section, Township, Range: <u>14, 06N, 05W</u>	
Landform (hillside, terrace, etc.): <u>Footslope</u>	Local relief (concave, convex, none): <u>concave</u>	Slope (%): <u>    </u>
Subregion (LRR): <u>LRR A, MLRA 1</u>	Lat: <u>46.008376</u>	Long: <u>-123.267856</u>
Soil Map Unit Name: <u>7D-Braun-Scaponia silt loads, 5 to 30 percent slopes</u>		Datum: <u>WGS 84</u>
Are climatic / hydrologic conditions on the site typical for this time of year?    Yes <u>    </u> No <u>    </u> (If no, explain in Remarks.)		
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed?    Are "Normal Circumstances" present?    Yes <u>    </u> No <u>    </u>		
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic?    (If needed, explain any answers in Remarks.)		

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?    Yes <u>  X  </u> No <u>    </u> Hydric Soil Present?                    Yes <u>  X  </u> No <u>    </u> Wetland Hydrology Present?          Yes <u>  X  </u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>  X  </u> No <u>    </u>
Remarks:	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>    </u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>      1      </u> (A)  Total Number of Dominant Species Across All Strata: <u>      1      </u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>  100.0%  </u> (A/B)																
1. <u>    </u>																					
2. <u>    </u>																					
3. <u>    </u>																					
4. <u>    </u>																					
				=Total Cover																	
Sapling/Shrub Stratum	(Plot size: <u>    </u> )				<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species    <u>      0      </u></td> <td>x 1 = <u>      0      </u></td> </tr> <tr> <td>FACW species   <u>      0      </u></td> <td>x 2 = <u>      0      </u></td> </tr> <tr> <td>FAC species     <u>     100     </u></td> <td>x 3 = <u>     300     </u></td> </tr> <tr> <td>FACU species    <u>      0      </u></td> <td>x 4 = <u>      0      </u></td> </tr> <tr> <td>UPL species     <u>      0      </u></td> <td>x 5 = <u>      0      </u></td> </tr> <tr> <td>Column Totals: <u>     100     </u> (A)</td> <td><u>     300     </u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>     3.00     </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>      0      </u>	x 1 = <u>      0      </u>	FACW species <u>      0      </u>	x 2 = <u>      0      </u>	FAC species <u>     100     </u>	x 3 = <u>     300     </u>	FACU species <u>      0      </u>	x 4 = <u>      0      </u>	UPL species <u>      0      </u>	x 5 = <u>      0      </u>	Column Totals: <u>     100     </u> (A)	<u>     300     </u> (B)	Prevalence Index = B/A = <u>     3.00     </u>	
Total % Cover of:	Multiply by:																				
OBL species <u>      0      </u>	x 1 = <u>      0      </u>																				
FACW species <u>      0      </u>	x 2 = <u>      0      </u>																				
FAC species <u>     100     </u>	x 3 = <u>     300     </u>																				
FACU species <u>      0      </u>	x 4 = <u>      0      </u>																				
UPL species <u>      0      </u>	x 5 = <u>      0      </u>																				
Column Totals: <u>     100     </u> (A)	<u>     300     </u> (B)																				
Prevalence Index = B/A = <u>     3.00     </u>																					
1. <u>    </u>																					
2. <u>    </u>																					
3. <u>    </u>																					
4. <u>    </u>																					
5. <u>    </u>																					
				=Total Cover																	
Herb Stratum	(Plot size: <u>  5'  </u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>  X  </u> 2 - Dominance Test is >50% <u>  X  </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Agrostis gigantea</u>		70	Yes	FAC																	
2. <u>Ranunculus repens</u>		15	No	FAC																	
3. <u>Lotus corniculatus</u>		15	No	FAC																	
4. <u>    </u>																					
5. <u>    </u>																					
6. <u>    </u>																					
7. <u>    </u>																					
8. <u>    </u>																					
9. <u>    </u>																					
10. <u>    </u>																					
11. <u>    </u>																					
				100 =Total Cover																	
Woody Vine Stratum	(Plot size: <u>    </u> )																				
1. <u>    </u>																					
2. <u>    </u>																					
				=Total Cover																	
% Bare Ground in Herb Stratum <u>    </u>																					
Remarks:																					



## SOIL

Sampling Point: SP-85

<b>Profile Description:</b> (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 2/2	90	10YR 4/6	10	C	PL	Loamy/Clayey	Prominent redox concentrations
4-9	2.5Y 5/4	50						10YR 2/2 50% mixed matrix
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.							<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>							<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)				<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR A, E</b> )	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)				<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR D</b> )	
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)				<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>except MLRA 1</b> )				<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D, G</b> )			<input type="checkbox"/> Loamy Gleyed Matrix (F2)				<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input checked="" type="checkbox"/> X Redox Dark Surface (F6)				<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G</b> )			<input type="checkbox"/> ? Redox Depressions (F8)					
<b>Restrictive Layer (if observed):</b>								
Type: _____ Clay								
Depth (inches): _____ 9								
							<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:								

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except</b>	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b>	
<input type="checkbox"/> High Water Table (A2)	<b>MLRA 1, 2, 4A, and 4B)</b>	<b>4A, and 4B)</b>	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A)</b>	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b> <div> <div> Surface Water Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/> </div> <div> Water Table Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/> </div> <div> Saturation Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/> </div> <div> Depth (inches): <input type="text"/> </div> <div> Depth (inches): <input type="text"/> </div> <div> Depth (inches): <input type="text"/> </div> </div> <div> <b>Wetland Hydrology Present?</b>    Yes <input checked="" type="checkbox"/>    No <input type="checkbox"/> </div>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>North Mist Expansion</u>	City/County: <u>Columbia</u>	Sampling Date: <u>10-10-22</u>
Applicant/Owner: <u>NW Natural</u>	State: <u>OR</u>	Sampling Point: <u>SP-86</u>
Investigator(s): <u>ES</u> Section, Township, Range: <u>14, 06N, 05W</u>		
Landform (hillside, terrace, etc.): <u>Footslope</u>	Local relief (concave, convex, none): <u>convex</u>	Slope (%): <u>    </u>
Subregion (LRR): <u>LRR A, MLRA 1</u>	Lat: <u>46.008391</u>	Long: <u>-123.267833</u> Datum: <u>WGS 84</u>
Soil Map Unit Name: <u>7D-Braun-Scaponia silt loads, 5 to 30 percent slopes</u>		NWI classification: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>x</u> No <u>    </u> (If no, explain in Remarks.)		
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>    </u> No <u>    </u>		
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)		

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**VEGETATION – Use scientific names of plants.**

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Tree Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: <u>30'</u>)</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1. <u>Pseudotsuga menziesii</u></td><td></td><td style="text-align: center;">40</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>2. <u>                                    </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>3. <u>                                    </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>4. <u>                                    </u></td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">40</td> <td colspan="2" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Sapling/Shrub Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: <u>30'</u>)</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1. <u>Corylus cornuta</u></td><td></td><td style="text-align: center;">30</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>2. <u>Rubus ursinus</u></td><td></td><td style="text-align: center;">30</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>3. <u>Symphoricarpos albus</u></td><td></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td>4. <u>                                    </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>5. <u>                                    </u></td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">65</td> <td colspan="2" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; 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## SOIL

Sampling Point: SP-86

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/2	90					Loamy/Clayey	10Y/R 4/2 10% mixed matrix
4-7	10YR 3/2	95	10YR 3/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
7-16	10YR 3/3	90	10YR 4/6	5	C	M	Loamy/Clayey	Distinct redox concentrations
								2.5 Y/R 5/4 5%

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G) ?	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
Remarks:	

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?    Yes _____ No _____    Depth (inches): _____ Water Table Present?    Yes _____ No _____    Depth (inches): _____ Saturation Present?    Yes _____ No _____    Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 10-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-87  
 Investigator(s): Sara Frank Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): flat Slope: 2.0 % / 1.1 °  
 Subregion (LRR): LRR A Lat.: 46.008139 Long.: -123.267075 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Grassy toeslope lowland near parking pullout	

## VEGETATION - Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b>	(Plot size: <u>30 feet</u> )				
1.		0	<input type="checkbox"/> 0.0%		
2.		0	<input type="checkbox"/> 0.0%		
3.		0	<input type="checkbox"/> 0.0%		
4.		0	<input type="checkbox"/> 0.0%		
		0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b>	(Plot size: <u>15 feet</u> )				
1.		0	<input type="checkbox"/> 0.0%		
2.		0	<input type="checkbox"/> 0.0%		
3.		0	<input type="checkbox"/> 0.0%		
4.		0	<input type="checkbox"/> 0.0%		
5.		0	<input type="checkbox"/> 0.0%		
		0	<b>= Total Cover</b>		
<b>Herb Stratum</b>	(Plot size: <u>5 feet</u> )				
1. <i>Phalaris arundinacea</i>		100	<input checked="" type="checkbox"/> 90.9%	FACW	
2. <i>Rubus ursinus</i>		10	<input type="checkbox"/> 9.1%	FACU	
3.		0	<input type="checkbox"/> 0.0%		
4.		0	<input type="checkbox"/> 0.0%		
5.		0	<input type="checkbox"/> 0.0%		
6.		0	<input type="checkbox"/> 0.0%		
7.		0	<input type="checkbox"/> 0.0%		
8.		0	<input type="checkbox"/> 0.0%		
9.		0	<input type="checkbox"/> 0.0%		
10.		0	<input type="checkbox"/> 0.0%		
11.		0	<input type="checkbox"/> 0.0%		
		110	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b>	(Plot size: <u>          </u> )				
1.		0	<input type="checkbox"/> 0.0%		
2.		0	<input type="checkbox"/> 0.0%		
		0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b>		<u>0</u>			
					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
					<b>Prevalence Index worksheet:</b> Total % Cover of: <u>          </u> Multiply by: <u>          </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>240</u> (B) Prevalence Index = B/A = <u>2.182</u>
					<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
					<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:					

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-87**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	3/1	90	10YR	5/8	10	C	M	Silty Clay Loam	
3-16	10YR	3/2	85	2.5Y	6/2	8	C	PL	Silty Clay Loam	
	10YR	5/8	5	5YR	2.5/1	2	C	M		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:  
Four colors in second soil horizon, likely disturbed due to logging

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 10-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-88  
 Investigator(s): Sara Frank Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): flat Slope: 3.0 % / 1.7 °  
 Subregion (LRR): LRR A Lat.: 46.008132 Long.: -123.267049 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: grassy lowland near parking pullout off logging road	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>44.4%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	10	<input checked="" type="checkbox"/> 40.0%	FACU	
2. <u>Frangula purshiana</u>	10	<input checked="" type="checkbox"/> 40.0%	FAC	
3. <u>Alnus rubra</u>	5	<input checked="" type="checkbox"/> 20.0%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%		
	25	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>60</u> x 4 = <u>240</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>125</u> (A) <u>430</u> (B) Prevalence Index = B/A = <u>3.440</u>
1. <u>Symphoricarpos albus</u>	5	<input checked="" type="checkbox"/> 50.0%	FACU	
2. <u>Cytisus scoparius</u>	5	<input checked="" type="checkbox"/> 50.0%	UPL	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	10	= Total Cover		
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Pteridium aquilinum</u>	5	<input type="checkbox"/> 5.6%	FACU	
2. <u>Rubus ursinus</u>	25	<input checked="" type="checkbox"/> 27.8%	FACU	
3. <u>Rubus armeniacus</u>	10	<input type="checkbox"/> 11.1%	FAC	
4. <u>Polystichum munitum</u>	15	<input checked="" type="checkbox"/> 16.7%	FACU	
5. <u>Agrostis stolonifera</u>	20	<input checked="" type="checkbox"/> 22.2%	FAC	
6. <u>Phalaris arundinacea</u>	15	<input checked="" type="checkbox"/> 16.7%	FACW	
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	90	= Total Cover		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>10</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-88**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR	3/2	99	10YR	5/8	1	C	M	Silty Clay Loam	Some gravel mixed in

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology present

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 10-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-89  
 Investigator(s): Sara Frank Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): convex Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.008096 Long.: -123.266946 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Confirmation that the wetland does not continue east	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	10	<input checked="" type="checkbox"/> 40.0%	FACU	
2. <u>Frangula purshiana</u>	5	<input checked="" type="checkbox"/> 20.0%	FAC	
3. <u>Alnus rubra</u>	10	<input checked="" type="checkbox"/> 40.0%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%		
	25	= Total Cover		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. <u>Frangula purshiana</u>	5	<input checked="" type="checkbox"/> 50.0%	FAC	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>140</u> (A) <u>420</u> (B) Prevalence Index = B/A = <u>3.000</u>
2. <u>Acer circinatum</u>	5	<input checked="" type="checkbox"/> 50.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	10	= Total Cover		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Ranunculus repens</u>	5	<input type="checkbox"/> 4.8%	FAC	
2. <u>Rubus armeniacus</u>	5	<input type="checkbox"/> 4.8%	FAC	
3. <u>Rubus ursinus</u>	10	<input type="checkbox"/> 9.5%	FACU	
4. <u>Lotus corniculatus</u>	5	<input type="checkbox"/> 4.8%	FAC	
5. <u>Agrostis stolonifera</u>	60	<input checked="" type="checkbox"/> 57.1%	FAC	
6. <u>Phalaris arundinacea</u>	20	<input type="checkbox"/> 19.0%	FACW	
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	105	= Total Cover		
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-89**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-3	10YR	3/2	100						Silty Clay Loam	
3-16	10YR	3/3	97	7.5YR	5/8	2	C	M	Silty Clay Loam	
				2.5Y	6/2	1	C	M		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
three colors in second soil horizon

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:		Wetland Hydrology Present?	
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>		

Depth (inches):

Depth (inches):

Depth (inches):

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: North Mist Expansion		City/County: Columbia		Sampling Date: 10-Oct-22	
Applicant/Owner: NW Natural		State: Oregon		Sampling Point: SP-94	
Investigator(s): ES		Section, Township, Range: S 34 T 7N R 5W			
Landform (hillslope, terrace, etc.): Channel (active)		Local relief (concave, convex, none): concave		Slope: % / t###	
Subregion (LRR): LRR A		Lat.: 46.051108		Long.: -123.287536	
		Datum: WGS 1984			
Soil Map Unit Name: 36D - Murnen silt loam, 3 to 30 percent slopes				NW1 classification: N/A	

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	
<b>Remarks:</b> Plot is in the channel of a shallow ravine.			

Tree Stratum (Plot size: 30ft )	Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
		0 = Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft )	Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
		0 = Total Cover	

Herb Stratum (Plot size: 5ft )	Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status
1. Juncus effusus	30	<input checked="" type="checkbox"/> 35.3%	FACW
2. Veronica americana	30	<input checked="" type="checkbox"/> 35.3%	OBL
3. Lotus corniculatus	5	<input type="checkbox"/> 5.9%	FAC
4. Lysichiton americanum	5	<input type="checkbox"/> 5.9%	OBL
5. Equisetum arvense	15	<input type="checkbox"/> 17.6%	FAC
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
11. _____	0	<input type="checkbox"/> 0.0%	_____
		85 = Total Cover	

Woody Vine Stratum (Plot size: _____ )	Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
		0 = Total Cover	

% Bare Ground in Herb Stratum: 15

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>35</u>	x 1 = <u>35</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Total s: <u>85</u>	(A) <u>155</u> (B)
Prevalence Index = B/A = <u>1.824</u>	

**Hydrophytic Vegetation Indicators:**

☒ 1 - Rapid Test for Hydrologic Vegetation

☒ 2 - Dominance Test is > 50%

☒ 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>

☐ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants <sup>1</sup>

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks:

\* Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-94**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	2/2	100						Muck	
3-16	2.5Y	4/2	75	10YR	5/8	25	C	M	Sandy Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	
Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="4"/>
Saturation Present? (includes capillary fringe)    Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>

Wetland Hydrology Present?    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia Sampling Date: 10-Oct-22  
 Applicant/Owner: NW Natural State: Oregon Sampling Point: SP-95  
 Investigator(s): ES Section, Township, Range: S 34 T 7N R 5W  
 Landform (hillslope, terrace, etc.): Channel (active) Local relief (concave, convex, none): convex Slope:      % / ±### °  
 Subregion (LRR): LRR A Lat.: 46.051117 Long.: -123.287542 Datum: WGS 1984  
 Soil Map Unit Name: 36D - Murnen silt loam, 3 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Plot is on the slope of the ravine.	

## VEGETATION - Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30ft</u> )					
1. _____		0	<input type="checkbox"/> 0.0%		
2. _____		0	<input type="checkbox"/> 0.0%		
3. _____		0	<input type="checkbox"/> 0.0%		
4. _____		0	<input type="checkbox"/> 0.0%		
		0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )					
1. <u>Rubus leucodermis</u>		15	<input checked="" type="checkbox"/> 37.5%	FACU	
2. <u>Rubus parviflorus</u>		15	<input checked="" type="checkbox"/> 37.5%	FACU	
3. <u>Rubus spectabilis</u>		10	<input checked="" type="checkbox"/> 25.0%	FAC	
4. _____		0	<input type="checkbox"/> 0.0%		
5. _____		0	<input type="checkbox"/> 0.0%		
		40	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )					
1. <u>Holcus lanatus</u>		10	<input checked="" type="checkbox"/> 20.0%	FAC	
2. <u>Polystichum munitum</u>		15	<input checked="" type="checkbox"/> 30.0%	FACU	
3. <u>Hypochaeris radicata</u>		10	<input checked="" type="checkbox"/> 20.0%	FACU	
4. <u>Digitalis purpurea</u>		15	<input checked="" type="checkbox"/> 30.0%	FACU	
5. _____		0	<input type="checkbox"/> 0.0%		
6. _____		0	<input type="checkbox"/> 0.0%		
7. _____		0	<input type="checkbox"/> 0.0%		
8. _____		0	<input type="checkbox"/> 0.0%		
9. _____		0	<input type="checkbox"/> 0.0%		
10. _____		0	<input type="checkbox"/> 0.0%		
11. _____		0	<input type="checkbox"/> 0.0%		
		50	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: <u>    </u> )					
1. _____		0	<input type="checkbox"/> 0.0%		
2. _____		0	<input type="checkbox"/> 0.0%		
		0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>50</u>					
<b>Dominance Test worksheet:</b>					
Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u>					(A)
Total Number of Dominant Species Across All Strata: <u>7</u>					(B)
Percent of dominant Species That Are OBL, FACW, or FAC: <u>28.6%</u>					(A/B)
<b>Prevalence Index worksheet:</b>					
Total % Cover of: <u>    </u> Multiply by: <u>    </u>					
OBL species <u>0</u> x 1 = <u>0</u>					
FACW species <u>0</u> x 2 = <u>0</u>					
FAC species <u>20</u> x 3 = <u>60</u>					
FACU species <u>70</u> x 4 = <u>280</u>					
UPL species <u>0</u> x 5 = <u>0</u>					
Column Totals: <u>90</u> (A) <u>340</u> (B)					
Prevalence Index = B/A = <u>3.778</u>					
<b>Hydrophytic Vegetation Indicators:</b>					
<input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation					
<input type="checkbox"/> 2 - Dominance Test is > 50%					
<input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>					
<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)					
<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>					
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)					
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>					
Remarks:					

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-95**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-4	10YR	4/4	100				Silt Loam		
4-16	10YR	4/6	100				Silty Clay Loam		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text" value="0"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Plot is about 3 ft higher than the wetland.

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 11-Oct-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: SP-96  
 Investigator(s): ES Section, Township, Range: S 34 T 7N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 4.0 % / 2.3 °  
 Subregion (LRR): LRR A Lat.: 46.05102014 Long.: -123.2876866 Datum: WGS 1984  
 Soil Map Unit Name: 36D - Murnen silt loam, 3 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>90</u> (A) <u>175</u> (B) Prevalence Index = B/A = <u>1.944</u>
= Total Cover				
_____				
_____				
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover				
_____				
_____				
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Scirpus microcarpus</u>	40	<input checked="" type="checkbox"/> 44.4%	OBL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Phalaris arundinacea</u>	15	<input checked="" type="checkbox"/> 16.7%	FACW	
3. <u>Cirsium arvense</u>	10	<input type="checkbox"/> 11.1%	FAC	
4. <u>Agrostis stolonifera</u>	10	<input type="checkbox"/> 11.1%	FAC	
5. <u>Lysichiton americanum</u>	0	<input type="checkbox"/> 0.0%	OBL	
6. <u>Athyrium distentifolium</u>	15	<input checked="" type="checkbox"/> 16.7%	FAC	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
90 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
_____				
_____				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>10</u>				

Remarks:

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-96**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	3/3	100						Sandy Loam	
6-12	10YR	4/2	80	10YR	3/6	20	C	M	Silt Loam	
12-16										gley 1, 4/5gy

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: rock  
Depth (inches): 9

Hydric Soil Present?    Yes ☒    No ☐

Remarks:  
very moist but not saturated soil

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology present

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion Project City/County: Columbia County Sampling Date: 11-Oct-22  
 Applicant/Owner: Northwest Natural State: Oregon Sampling Point: Sp-97  
 Investigator(s): ES Section, Township, Range: S 34 T 7N R 5W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): flat Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 46.05102014 Long.: -123.2876866 Datum: WGS 1984  
 Soil Map Unit Name: 36D - Murnen silt loam, 3 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland plot, 3 feet higher than wetland plot below	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				Prevalence Index worksheet:
1. <u>Pseudotsuga menziesii</u>	5	<input checked="" type="checkbox"/> 100.0%	FACU	Total % Cover of: _____ Multiply by: _____
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>30</u> x 2 = <u>60</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>25</u> x 3 = <u>75</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>25</u> x 4 = <u>100</u>
	5	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
Herb Stratum (Plot size: <u>5 feet</u> )				Col umn Total s: <u>80</u> (A) <u>235</u> (B)
1. <u>Holcus lanatus</u>	20	<input checked="" type="checkbox"/> 26.7%	FAC	Prevalence Index = B/A = <u>2.938</u>
2. <u>Digitalis purpurea</u>	5	<input type="checkbox"/> 6.7%	FACU	
3. <u>Epilobium ciliatum</u>	15	<input checked="" type="checkbox"/> 20.0%	FACW	
4. <u>Jacobaea vulgaris</u>	15	<input checked="" type="checkbox"/> 20.0%	FACU	
5. <u>Agrostis exarata</u>	15	<input checked="" type="checkbox"/> 20.0%	FACW	
6. <u>Equisetum arvense</u>	5	<input type="checkbox"/> 6.7%	FAC	
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	75	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>25</u>				
Remarks:				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **Sp-97**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features				Texture	Remarks
	Color (moist)			Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR	4/4	100					Silty Clay Loam	
8-18	10YR	4/6	95	10YR	6/8	5	C	M	Silty Clay Loam

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 11-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-102  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 34 T 7N R 5W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 15.0 % / 8.5 °  
 Subregion (LRR): LRR A Lat.: 46.050714 Long.: -123.287338 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaponia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Alnus rubra</u>	<u>35</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>35</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>85</u> (A) <u>225</u> (B) Prevalence Index = B/A = <u>2.647</u>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Lysichiton americanum</u>	<u>20</u>	<input checked="" type="checkbox"/> 40.0%	<u>OBL</u>	
2. <u>Asarum caudatum</u>	<u>10</u>	<input checked="" type="checkbox"/> 20.0%	<u>FACU</u>	
3. <u>Glechoma hederacea</u>	<u>10</u>	<input checked="" type="checkbox"/> 20.0%	<u>FACU</u>	
4. <u>Phalaris arundinacea</u>	<u>10</u>	<input checked="" type="checkbox"/> 20.0%	<u>FACW</u>	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>50</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>50</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-102**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Texture	Remarks	
	Color (moist)			Color (moist)	%	Type <sup>1</sup>			Loc <sup>2</sup>
0-2	10YR	3/3	100				Silt Loam		
2-10	10YR	3/4	100				Silt Loam		
10-20	Gley 1	4/10Y	100				Silty Clay Loam		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:		Wetland Hydrology Present?	
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="4"/>

**Describe Recorded Data** (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Enter Project/Site City/County: Columbia County Sampling Date: 11-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-103  
 Investigator(s): Sara Frank, Ed Strohmaier Section, Township, Range: S 34 T 7N R 5W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 15.0 % / 8.5 °  
 Subregion (LRR): LRR A Lat.: 46.050731 Long.: -123.287345 Datum: WGS 1984  
 Soil Map Unit Name: 7D - Braun-Scaptonia silt loams, 5 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Alnus rubra</u>	<u>30</u>	<input checked="" type="checkbox"/> 50.0%	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)
2. <u>Pseudotsuga menziesii</u>	<u>30</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>60</u>	<b>= Total Cover</b>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Vaccinium parvifolium</u>	<u>5</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>115</u> x 4 = <u>460</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>145</u> (A) <u>550</u> (B) Prevalence Index = B/A = <u>3.793</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>5</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Polystichum munitum</u>	<u>80</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>80</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
		<u>0</u>	<b>= Total Cover</b>	
% Bare Ground in Herb Stratum: <u>20</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-103**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-8	10YR	2/2	100						Silty Clay Loam	organic material
8-12	10YR	3/2	100						Silty Clay Loam	
12-16	2.5Y	6/2	94	2.5Y	6/8	6	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)				
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)				

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	<input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No Hydrology present

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 12-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-104  
 Investigator(s): Sara Frank Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): undulating Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 46.007277 Long.: -123.263972 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
			<b>= Total Cover</b>	
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>3.143</u>
1. <u>Pseudotsuga menziesii</u>	25	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
			<b>= Total Cover</b>	
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Agrostis stolonifera</u>	60	<input checked="" type="checkbox"/> 75.0%	FAC	
2. <u>Rubus armeniacus</u>	10	<input type="checkbox"/> 12.5%	FAC	
3. <u>Juncus effusus</u>	5	<input type="checkbox"/> 6.3%	FACW	
4. <u>Equisetum telmateia</u>	5	<input type="checkbox"/> 6.3%	FACW	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
			<b>= Total Cover</b>	
<b>Woody Vine Stratum (Plot size: _____)</b>				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
			<b>= Total Cover</b>	
% Bare Ground in Herb Stratum: <u>20</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: **SP-104**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR	3/3	98	10YR	5/8	2	C	M	Silty Clay Loam	
4-20	10YR	4/2	98	10YR	6/8	2	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No Hydrology present

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 12-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-105  
 Investigator(s): Sara Frank Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): undulating Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.007299 Long.: -123.264 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>85</u> x 2 = <u>170</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Col umn Total s: <u>100</u> (A) <u>215</u> (B) Prevalence Index = B/A = <u>2.150</u>
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus effusus</u>	80	<input checked="" type="checkbox"/> 80.0%	FACW	
2. <u>Phalaris arundinacea</u>	5	<input type="checkbox"/> 5.0%	FACW	
3. <u>Rubus armeniacus</u>	5	<input type="checkbox"/> 5.0%	FAC	
4. <u>Cirsium arvense</u>	10	<input type="checkbox"/> 10.0%	FAC	
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-105

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-4	10YR	2/2	100						Silt Loam	
4-16	10YR	2/2	95	7.5YR	5/8	5	RM	PL	Silt Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes ☒    No ☐

Remarks:

## Hydrology

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 12-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-106  
 Investigator(s): Sara Frank Section, Township, Range: S 14 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 2.0 % / 1.1 °  
 Subregion (LRR): LRR A Lat.: 46.000754 Long.: -123.261668 Datum: WGS 1984  
 Soil Map Unit Name: 58 - Treharne silt loam NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Reed canary grass on gravel bar between highway and logging road.	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Phalaris arundinacea</u>	60	<input checked="" type="checkbox"/> 60.0%	FACW	
2. <u>Rubus armeniacus</u>	40	<input checked="" type="checkbox"/> 40.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
100 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>% Bare Ground in Herb Stratum:</b> <u>0</u>				
				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>240</u> (B) Prevalence Index = B/A = <u>2.400</u>
				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-106

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-10	10YR	3/2	100				Silt Loam		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):		Hydric Soil Present?
Type: <u>rock</u>		Yes <input type="radio"/> No <input checked="" type="radio"/>
Depth (inches): <u>10</u>		

Remarks:  
Gravel restriction at 10 inches from nearby roads

## Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> FAC-neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Frost Heave Hummocks (D7)	

Field Observations:	
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:  
No Hydrology present

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 12-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-107  
 Investigator(s): Sara Frank Section, Township, Range: S 12 T 6N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.105151 Long.: -123.243014 Datum: WGS 1984  
 Soil Map Unit Name: 5D - Anunde silt loam, 3 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Problematic shallow soils in gravel laydown yard.	

## VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )				
1. <u>Alnus rubra</u>	<u>10</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>10</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>70</u> (A) <u>150</u> (B) Prevalence Index = B/A = <u>2.143</u>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus effusus</u>	<u>60</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>60</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<b>= Total Cover</b>		
% Bare Ground in Herb Stratum: <u>40</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-107

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR	3/2	100				Silty Clay Loam	Gravel

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: Rock  
Depth (inches): 5

**Hydric Soil Present?**    Yes ☐    No ☒

Remarks:  
Problematic soil in gravel laydown yard. Compaction and rock make it impossible to dig past a few inches

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: North Mist Expansion City/County: Columbia County Sampling Date: 12-Oct-22  
 Applicant/Owner: Northwest Natural State: OR Sampling Point: SP-108  
 Investigator(s): Sara Frank Section, Township, Range: S 12 T 7N R 5W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °  
 Subregion (LRR): LRR A Lat.: 46.105168 Long.: -123.243044 Datum: WGS 1984  
 Soil Map Unit Name: 5D - Anunde silt loam, 3 to 30 percent slopes NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland plot in gravel laydown yard	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
1. <u>Alnus rubra</u>	<u>10</u>	<input checked="" type="checkbox"/> 100.0%	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>10</u> x 5 = <u>50</u> Column Total s: <u>40</u> (A) <u>150</u> (B) Prevalence Index = B/A = <u>3.750</u>
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )				
1. <u>Cytisus scoparius</u>	<u>10</u>	<input checked="" type="checkbox"/> 100.0%	<u>UPL</u>	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )				
1. <u>Agrostis stolonifera</u>	<u>10</u>	<input checked="" type="checkbox"/> 50.0%	<u>FAC</u>	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. <u>Leontodon saxatilis</u>	<u>10</u>	<input checked="" type="checkbox"/> 50.0%	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>Woody Vine Stratum</b> (Plot size: _____)
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<b>% Bare Ground in Herb Stratum:</b> <u>60</u>
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>Remarks:</b>				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



## Soil

Sampling Point: SP-108

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR	3/2	100				Silty Clay Loam	gravel

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
Type: Rock  
Depth (inches): 5

Hydric Soil Present?    Yes ☐    No ☒

Remarks:

## Hydrology

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

Wetland Hydrology Present?    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																	
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/26/2023</u>																	
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>		Sampling Point: <u>SP-109A</u>																	
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S15 T6N R5W</u>																			
Landform (hillside, terrace, etc.): <u>Depression</u>		Local relief (concave, convex, none): <u>Concave</u>		Slope (%): <u>0</u>																	
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.004322 N</u>		Long: <u>123.281279 W</u>																	
		Datum: <u>WGS 84</u>																			
Soil Map Unit Name: <u>Natal Silty Clay Loam</u>		NW1 classification: <u>N/A</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>			<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>																		
Remarks: Ground cover sparse in lower elevation portions of this wetland.																					
<b>VEGETATION – Use scientific names of plants.</b>																					
<b>Tree Stratum</b> (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1. <u>Fraxinus latifolia</u>		80	Yes	FACW																	
2. <u>Salix scouleriana</u>		15	No	FAC																	
3. <u>    </u>																					
4. <u>    </u>																					
		95 =Total Cover																			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )					<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>190</u></td> <td>x 2 = <u>380</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>215</u> (A)</td> <td><u>455</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.12</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>190</u>	x 2 = <u>380</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>215</u> (A)	<u>455</u> (B)	Prevalence Index = B/A = <u>2.12</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>190</u>	x 2 = <u>380</u>																				
FAC species <u>25</u>	x 3 = <u>75</u>																				
FACU species <u>0</u>	x 4 = <u>0</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>215</u> (A)	<u>455</u> (B)																				
Prevalence Index = B/A = <u>2.12</u>																					
1. <u>Rosa nutkana</u>		10	Yes	FAC																	
2. <u>    </u>																					
3. <u>    </u>																					
4. <u>    </u>																					
5. <u>    </u>																					
		10 =Total Cover																			
<b>Herb Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Indicators:</b>  <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Spiraea douglasii</u>		75	Yes	FACW																	
2. <u>Phalaris arundinacea</u>		35	Yes	FACW																	
3. <u>    </u>																					
4. <u>    </u>																					
5. <u>    </u>																					
6. <u>    </u>																					
7. <u>    </u>																					
8. <u>    </u>																					
9. <u>    </u>																					
10. <u>    </u>																					
11. <u>    </u>																					
		110 =Total Cover																			
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>																
1. <u>    </u>																					
2. <u>    </u>																					
% Bare Ground in Herb Stratum <u>5</u>																					
Remarks:																					



# SOIL

Sampling Point: SP-100A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/1	100					Loamy/Clayey	All textures clay loam, abundance of organic material in this horizon.
4-6	10YR 3/1	80	5YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
6-12	10YR 5/1	60	5YR 4/6	40	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:

# HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:





## SOIL

Sampling Point: SP-100B

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> )	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2 4A, and 4B</b> )	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> )	<input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> )	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	
(includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R		OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>																
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>																
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Sampling Date: <u>09/26/2023</u>																
Section, Township, Range: <u>S15 T6N R5W</u>		Sampling Point: <u>SP-109C</u>																
Landform (hillside, terrace, etc.): <u>Depression</u>	Local relief (concave, convex, none): <u>Concave</u>	Slope (%): <u>0</u>																
Subregion (LRR): <u>LRR A</u>	Lat: <u>46.003999 N</u>	Long: <u>123.281272 W</u>																
Datum: <u>WGS 84</u>																		
Soil Map Unit Name: <u>58 Treharne Silt Loam</u>	NW1 classification: <u>N/A</u>																	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																		
Are Vegetation <u>X</u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>    </u> No <u>X</u>																		
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																		
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																		
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>		<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>																
Remarks: Upland representative plot. No Juncus spp. or Carex spp. observed here, higher in elevation by around 1.5 ft in comparison to SP-100B.																		
<b>VEGETATION – Use scientific names of plants.</b>																		
<b>Tree Stratum</b> (Plot size: <u>15</u> )		<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1. <u>    </u> 2. <u>    </u> 3. <u>    </u> 4. <u>    </u>																		
=Total Cover																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																		
1. <u>    </u> 2. <u>    </u> 3. <u>    </u> 4. <u>    </u> 5. <u>    </u>																		
=Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td><u>345</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.46</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>140</u> (A)	<u>345</u> (B)	Prevalence Index = B/A = <u>2.46</u>	
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>80</u>	x 2 = <u>160</u>																	
FAC species <u>55</u>	x 3 = <u>165</u>																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>140</u> (A)	<u>345</u> (B)																	
Prevalence Index = B/A = <u>2.46</u>																		
<b>Herb Stratum</b> (Plot size: <u>5</u> )																		
1. <u>Trifolium repens</u> <u>55</u> Yes FAC 2. <u>Phalaris arundinacea</u> <u>80</u> Yes FACW 3. <u>Jacobaea vulgaris</u> <u>5</u> No FACU 4. <u>    </u> 5. <u>    </u> 6. <u>    </u> 7. <u>    </u> 8. <u>    </u> 9. <u>    </u> 10. <u>    </u> 11. <u>    </u>																		
=Total Cover <u>140</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )																		
1. <u>    </u> 2. <u>    </u>																		
=Total Cover																		
% Bare Ground in Herb Stratum <u>3</u>		<b>Hydrophytic Vegetation Indicators:</b>  <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>    </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>																		
Remarks:																		



## SOIL

Sampling Point: SP-100C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 3/2	100					Loamy/Clayey	Silty Clay Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

## HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)				<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																	
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/26/2023</u>																	
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>		Sampling Point: <u>SP-110A</u>																	
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S15 T6N R5W</u>																			
Landform (hillside, terrace, etc.): <u>Depression</u>		Local relief (concave, convex, none): <u>Concave</u>		Slope (%): <u>3</u>																	
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.004217 N</u>		Long: <u>123.280641 W</u>																	
Datum: <u>WGS 84</u>																					
Soil Map Unit Name: <u>37 Natal Silty Clay Loam</u>		NW classification: <u>N/A</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>			<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>																		
Remarks: Ground cover sparse in lower elevation portions of this wetland.																					
<b>VEGETATION – Use scientific names of plants.</b>																					
<b>Tree Stratum</b> (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1. <u>Fraxinus latifolia</u>		<u>60</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
3. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
4. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
		<u>60</u> =Total Cover																			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )					<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>100</u></td> <td>x 2 = <u>200</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>265</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.12</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>100</u>	x 2 = <u>200</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>265</u> (B)	Prevalence Index = B/A = <u>2.12</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>5</u>	x 1 = <u>5</u>																				
FACW species <u>100</u>	x 2 = <u>200</u>																				
FAC species <u>20</u>	x 3 = <u>60</u>																				
FACU species <u>0</u>	x 4 = <u>0</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>125</u> (A)	<u>265</u> (B)																				
Prevalence Index = B/A = <u>2.12</u>																					
1. <u>Rosa nutkana</u>		<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
3. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
4. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
5. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
		<u>20</u> =Total Cover																			
<b>Herb Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Indicators:</b>  <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Carex obnupta</u>		<u>5</u>	<u>No</u>	<u>OBL</u>																	
2. <u>Spiraea douglasii</u>		<u>40</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
4. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
5. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
6. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
7. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
8. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
9. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
10. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
11. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
		<u>45</u> =Total Cover																			
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>																
1. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
2. <u>                                    </u>		<u>          </u>	<u>          </u>	<u>          </u>																	
		<u>          </u> =Total Cover																			
% Bare Ground in Herb Stratum <u>0</u>																					
Remarks:																					



# SOIL

Sampling Point: SP-101A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/1	100					Loamy/Clayey	All textures clay loam.
4-6	10YR 3/1	80	5YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
6-12	10YR 5/1	60	5YR 4/6	40	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks: \_\_\_\_\_

# HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks: \_\_\_\_\_

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																	
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/26/2023</u>																	
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>		Sampling Point: <u>SP-110B</u>																	
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S15 T6N R5W</u>																			
Landform (hillside, terrace, etc.): <u>Slope</u>		Local relief (concave, convex, none): <u>Convex</u>		Slope (%): <u>2</u>																	
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.004260 N</u>		Long: <u>123.280497 W</u>																	
		Datum: <u>WGS 84</u>																			
Soil Map Unit Name: <u>Natal Silty Clay Loam</u>		NWI classification: <u>N/A</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>			<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>																		
Remarks: Side slope from farm field down to wetland depression.																					
<b>VEGETATION – Use scientific names of plants.</b>																					
<b>Tree Stratum</b> (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>55.6%</u> (A/B)																
1. <u>Fraxinus latifolia</u>		50	Yes	FACW																	
2. <u>Malus fusca</u>		46	Yes	FACW																	
3. <u>    </u>																					
4. <u>    </u>																					
		96	=Total Cover																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																					
1. <u>Rosa nutkana</u>		15	Yes	FAC																	
2. <u>Symphoricarpos albus</u>		60	Yes	FACU																	
3. <u>    </u>																					
4. <u>    </u>																					
5. <u>    </u>																					
		75	=Total Cover																		
<b>Herb Stratum</b> (Plot size: <u>5</u> )					<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>96</u></td> <td>x 2 = <u>192</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>66</u></td> <td>x 4 = <u>264</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>197</u> (A)</td> <td><u>551</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.80</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>96</u>	x 2 = <u>192</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>66</u>	x 4 = <u>264</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>197</u> (A)	<u>551</u> (B)	Prevalence Index = B/A = <u>2.80</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>10</u>	x 1 = <u>10</u>																				
FACW species <u>96</u>	x 2 = <u>192</u>																				
FAC species <u>20</u>	x 3 = <u>60</u>																				
FACU species <u>66</u>	x 4 = <u>264</u>																				
UPL species <u>5</u>	x 5 = <u>25</u>																				
Column Totals: <u>197</u> (A)	<u>551</u> (B)																				
Prevalence Index = B/A = <u>2.80</u>																					
1. <u>Poa pratensis</u>		5	Yes	FAC																	
2. <u>Athyrium filix-femina</u>		5	Yes	UPL																	
3. <u>Carex obnupta</u>		10	Yes	OBL																	
4. <u>    </u>																					
5. <u>    </u>																					
6. <u>    </u>																					
7. <u>    </u>																					
8. <u>    </u>																					
9. <u>    </u>																					
10. <u>    </u>																					
11. <u>    </u>																					
		20	=Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )																					
1. <u>Rubus ursinus</u>		3	Yes	FACU																	
2. <u>Rubus laciniatus</u>		3	Yes	FACU																	
		6	=Total Cover																		
% Bare Ground in Herb Stratum <u>5</u>																					
Remarks:																					



## SOIL

Sampling Point: SP-101B

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> )	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2 4A, and 4B</b> )	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> )	<input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> )	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches):	<input type="text"/>
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches):	<input type="text"/>
(includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			





# SOIL

Sampling Point: SP-102A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 3/1	90	5YR 4/6	10	C	M	Loamy/Clayey	All horizons silty clay loam
2-12	10YR 3/1	20	10YR 4/1	40	D	M	Loamy/Clayey	
			10YR 4/6	20	C	M		Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:

# HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																	
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/26/2023</u>																	
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>		Sampling Point: <u>SP-111B</u>																	
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S15 T6N R5W</u>																			
Landform (hillside, terrace, etc.): <u>Slope</u>		Local relief (concave, convex, none): <u>Convex</u>		Slope (%): <u>0</u>																	
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.004228 N</u>		Long: <u>123.279636 W</u>																	
Datum: <u>WGS 84</u>																					
Soil Map Unit Name: <u>Natal Silty Clay Loam</u>		NW classification: <u>N/A</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																					
Are Vegetation <u>X</u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>    </u> No <u>X</u>																					
Are Vegetation <u>    </u> , Soil <u>X</u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>			<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>																		
Remarks: Area is significantly disturbed due to active agriculture. It is recommended that a wetland scientist returns in the spring to confirm delineation borders. Located on side slope of shallow depression, around 2 feet higher in elevation than SP-102A.																					
<b>VEGETATION – Use scientific names of plants.</b>																					
<b>Tree Stratum</b> (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
2. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
3. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
4. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
		=Total Cover																			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )					<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>85</u></td> <td>x 2 = <u>170</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>170</u> (A)</td> <td><u>430</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.53</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>85</u>	x 2 = <u>170</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>170</u> (A)	<u>430</u> (B)	Prevalence Index = B/A = <u>2.53</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>85</u>	x 2 = <u>170</u>																				
FAC species <u>80</u>	x 3 = <u>240</u>																				
FACU species <u>5</u>	x 4 = <u>20</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>170</u> (A)	<u>430</u> (B)																				
Prevalence Index = B/A = <u>2.53</u>																					
1. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
2. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
3. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
4. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
5. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
		=Total Cover																			
<b>Herb Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Indicators:</b>  <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>    </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Trifolium repens</u>		<u>50</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Phalaris arundinacea</u>		<u>85</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Agrostis stolonifera</u>		<u>30</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Jacobaea vulgaris</u>		<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
6. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
7. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
8. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
9. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
10. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
11. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
		<u>170</u>	=Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>																
1. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
2. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
		=Total Cover																			
% Bare Ground in Herb Stratum <u>    </u>																					
Remarks:																					



## SOIL

Sampling Point: SP-102B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 3/2	100					Loamy/Clayey	Both horizons silty clay loam
2-8	10YR 3/1	85	7.5YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.					<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR A, E</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR D</b> )		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>except MLRA 1</b> )			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D, G</b> )			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G</b> )			<input type="checkbox"/> Redox Depressions (F8)					
<b>Restrictive Layer (if observed):</b>						<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Type: <u>Hard ground</u>								
Depth (inches): <u>8</u>								
Remarks:								

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> )	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2 4A, and 4B</b> )	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> )	<input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> )	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>		
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/26/2023</u>
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>	Sampling Point: <u>SP-112A</u>	
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S15 T6N R5W</u>		
Landform (hillside, terrace, etc.): <u>Depression</u>		Local relief (concave, convex, none): <u>Concave</u>		Slope (%): <u>0</u>
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.005036 N</u>	Long: <u>123.279500 W</u>	Datum: <u>WGS 84</u>
Soil Map Unit Name: <u>Natal Silty Clay Loam</u>		NWI classification: <u>PSSC</u>		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)				
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>				
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)				
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>				
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>			<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>	
Remarks: Ground cover sparse in lower elevation portions of this wetland.				
<b>VEGETATION – Use scientific names of plants.</b>				
<b>Tree Stratum</b> (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fraxinus latifolia</u>		65	Yes	FACW
2. <u>Physocarpus capitatus</u>		6	No	FACW
3. <u>                                    </u>				
4. <u>                                    </u>				
		71	=Total Cover	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				
1. <u>                                    </u>				
2. <u>                                    </u>				
3. <u>                                    </u>				
4. <u>                                    </u>				
5. <u>                                    </u>				
			=Total Cover	
<b>Herb Stratum</b> (Plot size: <u>5</u> )				
1. <u>Carex obnupta</u>		40	Yes	OBL
2. <u>Phalaris arundinacea</u>		10	No	FACW
3. <u>Spiraea douglasii</u>		25	Yes	FACW
4. <u>                                    </u>				
5. <u>                                    </u>				
6. <u>                                    </u>				
7. <u>                                    </u>				
8. <u>                                    </u>				
9. <u>                                    </u>				
10. <u>                                    </u>				
11. <u>                                    </u>				
		75	=Total Cover	
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )				
1. <u>                                    </u>				
2. <u>                                    </u>				
			=Total Cover	
% Bare Ground in Herb Stratum <u>15</u>				
Remarks:				

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>40</u>	x 1 = <u>40</u>
FACW species <u>106</u>	x 2 = <u>212</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>146</u> (A)	<u>252</u> (B)
Prevalence Index = B/A = <u>1.73</u>	

**Hydrophytic Vegetation Indicators:**

     1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0<sup>1</sup>

     4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

     5 - Wetland Non-Vascular Plants<sup>1</sup>

     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No



# SOIL

Sampling Point: SP-103A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR 3/1	100					Loamy/Clayey	All horizons clay loam.
1-6	10YR 3/1	80	5YR 4/6	20	C	M		Prominent redox concentrations
6-12	10YR 5/1	70	5YR 4/6	30	C	M		Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks: \_\_\_\_\_

# HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks: \_\_\_\_\_

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																																									
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/26/2023</u>																																									
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>		Sampling Point: <u>SP-112B</u>																																									
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S15 T6N R5W</u>																																											
Landform (hillside, terrace, etc.): <u>Terrace</u>		Local relief (concave, convex, none): <u>Flat</u>		Slope (%): <u>0</u>																																									
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.004932 N</u>		Long: <u>123.279419 W</u>																																									
Datum: <u>WGS 84</u>																																													
Soil Map Unit Name: <u>Natal Silty Clay Loam</u>		NWI classification: <u>PSSC</u>																																											
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																																													
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>																																													
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																																													
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																																													
Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>			<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>																																										
Remarks: Flat terrace above wetland.																																													
<b>VEGETATION – Use scientific names of plants.</b>																																													
<b>Tree Stratum</b> (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																																								
1. <u>Physocarpus capitatus</u>		<u>5</u>	<u>Yes</u>	<u>FACW</u>																																									
2. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
3. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
4. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
		<u>5</u> =Total Cover																																											
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )					<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Total % Cover of:</td> <td style="width: 10%;"></td> <td style="width: 10%;">Multiply by:</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>OBL species</td> <td><u>0</u></td> <td>x 1 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td><u>5</u></td> <td>x 2 =</td> <td><u>10</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td><u>35</u></td> <td>x 3 =</td> <td><u>105</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td><u>70</u></td> <td>x 4 =</td> <td><u>280</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td><u>110</u> (A)</td> <td></td> <td><u>395</u> (B)</td> <td></td> </tr> <tr> <td colspan="5">Prevalence Index = B/A = <u>3.59</u></td> </tr> </table>	Total % Cover of:		Multiply by:			OBL species	<u>0</u>	x 1 =	<u>0</u>		FACW species	<u>5</u>	x 2 =	<u>10</u>		FAC species	<u>35</u>	x 3 =	<u>105</u>		FACU species	<u>70</u>	x 4 =	<u>280</u>		UPL species	<u>0</u>	x 5 =	<u>0</u>		Column Totals:	<u>110</u> (A)		<u>395</u> (B)		Prevalence Index = B/A = <u>3.59</u>				
Total % Cover of:		Multiply by:																																											
OBL species	<u>0</u>	x 1 =	<u>0</u>																																										
FACW species	<u>5</u>	x 2 =	<u>10</u>																																										
FAC species	<u>35</u>	x 3 =	<u>105</u>																																										
FACU species	<u>70</u>	x 4 =	<u>280</u>																																										
UPL species	<u>0</u>	x 5 =	<u>0</u>																																										
Column Totals:	<u>110</u> (A)		<u>395</u> (B)																																										
Prevalence Index = B/A = <u>3.59</u>																																													
1. <u>Rosa nutkana</u>		<u>35</u>	<u>Yes</u>	<u>FAC</u>																																									
2. <u>Symphoricarpos albus</u>		<u>25</u>	<u>Yes</u>	<u>FACU</u>																																									
3. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
4. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
5. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
		<u>60</u> =Total Cover																																											
<b>Herb Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Indicators:</b> <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>    </u> 2 - Dominance Test is >50% <u>    </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																								
1. <u>Polystichum munitum</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>																																									
2. <u>Galium aparine</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>																																									
3. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
4. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
5. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
6. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
7. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
8. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
9. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
10. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
11. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
		<u>20</u> =Total Cover																																											
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>																																								
1. <u>Rubus laciniatus</u>		<u>25</u>	<u>Yes</u>	<u>FACU</u>																																									
2. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																																									
		<u>25</u> =Total Cover																																											
% Bare Ground in Herb Stratum <u>0</u>																																													
Remarks:																																													



# SOIL

Sampling Point: SP-112B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 3/2	30					Loamy/Clayey	
	10YR 2/1	70						

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Hard Ground</u> Depth (inches): <u>6</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

# HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>          </u> Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>          </u> Saturation Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>          </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R		OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																																
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>																																
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>																																
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Sampling Date: <u>09/26/2023</u>																																
Section, Township, Range: <u>S15 T6N R5W</u>		Sampling Point: <u>SP-113A</u>																																
Landform (hillside, terrace, etc.): <u>Depression</u>	Local relief (concave, convex, none): <u>Concave</u>	Slope (%): <u>0</u>																																
Subregion (LRR): <u>LRR A</u>	Lat: <u>46.004695 N</u>	Long: <u>123.278250 W</u>																																
Datum: <u>WGS 84</u>																																		
Soil Map Unit Name: <u>Natal Silty Clay Loam</u>		NWI classification: <u>N/A</u>																																
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																																		
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>																																		
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																																		
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																																		
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>		<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>																																
Remarks: Depression next to culvert, bed elevation below culvert invert.																																		
<b>VEGETATION – Use scientific names of plants.</b>																																		
<b>Tree Stratum</b> (Plot size: <u>15</u> ) 1. <u>Fraxinus latifolia</u> <u>30</u> <u>Yes</u> <u>FACW</u> 2. <u>Physocarpus capitatus</u> <u>5</u> <u>No</u> <u>FACW</u> 3. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 4. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> <u>35</u> =Total Cover		<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> ) 1. <u>Rosa nutkana</u> <u>5</u> <u>Yes</u> <u>FAC</u> 2. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 3. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 4. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 5. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> <u>5</u> =Total Cover																																		
<b>Herb Stratum</b> (Plot size: <u>5</u> ) 1. <u>Rumex crispus</u> <u>10</u> <u>No</u> <u>FAC</u> 2. <u>Oenanthe sarmentosa</u> <u>85</u> <u>Yes</u> <u>OBL</u> 3. <u>Spiraea douglasii</u> <u>15</u> <u>No</u> <u>FACW</u> 4. <u>Carex obnupta</u> <u>10</u> <u>No</u> <u>OBL</u> 5. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 6. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 7. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 8. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 9. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 10. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 11. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> <u>120</u> =Total Cover		<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">Total % Cover of:</th> <th colspan="2" style="text-align: left;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td><u>95</u></td> <td>x 1 =</td> <td><u>95</u></td> </tr> <tr> <td>FACW species</td> <td><u>50</u></td> <td>x 2 =</td> <td><u>100</u></td> </tr> <tr> <td>FAC species</td> <td><u>15</u></td> <td>x 3 =</td> <td><u>45</u></td> </tr> <tr> <td>FACU species</td> <td><u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>160</u> (A)</td> <td></td> <td><u>240</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =</td> <td colspan="2"><u>1.50</u></td> </tr> </tbody> </table>	Total % Cover of:		Multiply by:		OBL species	<u>95</u>	x 1 =	<u>95</u>	FACW species	<u>50</u>	x 2 =	<u>100</u>	FAC species	<u>15</u>	x 3 =	<u>45</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>160</u> (A)		<u>240</u> (B)	Prevalence Index = B/A =		<u>1.50</u>	
Total % Cover of:			Multiply by:																															
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FACW species	<u>50</u>	x 2 =	<u>100</u>																															
FAC species	<u>15</u>	x 3 =	<u>45</u>																															
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Column Totals:	<u>160</u> (A)		<u>240</u> (B)																															
Prevalence Index = B/A =		<u>1.50</u>																																
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> ) 1. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> 2. <u>                                    </u> <u>          </u> <u>          </u> <u>          </u> <u>          </u> =Total Cover % Bare Ground in Herb Stratum <u>15</u>		<b>Hydrophytic Vegetation Indicators:</b> <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
Remarks:		<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>																																



## SOIL

Sampling Point: SP-104A

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> )	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2 4A, and 4B</b> )	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> )	<input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> )	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
(includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																	
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/26/2023</u>																	
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>		Sampling Point: <u>SP-113B</u>																	
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S15 T6N R5W</u>																			
Landform (hillside, terrace, etc.): <u>Slope</u>		Local relief (concave, convex, none): <u>Convex</u>		Slope (%): <u>1</u>																	
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.004559 N</u>		Long: <u>123.278296 W</u>																	
Datum: <u>WGS 84</u>																					
Soil Map Unit Name: <u>Natal Silty Clay Loam</u>		NW1 classification: <u>N/A</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>																					
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Remarks: Located on a side slope of a shallow depression.																					
<b>VEGETATION – Use scientific names of plants.</b>																					
<b>Tree Stratum</b> (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
1. <u>Pseudotsuga menziesii</u>		15	Yes	FACU																	
2. <u>Fraxinus latifolia</u>		10	Yes	FACW																	
3. <u>    </u>																					
4. <u>    </u>																					
		25	=Total Cover																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																					
1. <u>Symphoricarpos albus</u>		60	Yes	FACU																	
2. <u>    </u>																					
3. <u>    </u>																					
4. <u>    </u>																					
5. <u>    </u>																					
		60	=Total Cover																		
<b>Herb Stratum</b> (Plot size: <u>5</u> )					<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>115</u></td> <td>x 4 = <u>460</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>495</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.81</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>115</u>	x 4 = <u>460</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>495</u> (B)	Prevalence Index = B/A = <u>3.81</u>	
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UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>130</u> (A)	<u>495</u> (B)																				
Prevalence Index = B/A = <u>3.81</u>																					
1. <u>Equisetum arvense</u>		5	Yes	FAC																	
2. <u>Polystichum munitum</u>		5	Yes	FACU																	
3. <u>    </u>																					
4. <u>    </u>																					
5. <u>    </u>																					
6. <u>    </u>																					
7. <u>    </u>																					
8. <u>    </u>																					
9. <u>    </u>																					
10. <u>    </u>																					
11. <u>    </u>																					
		10	=Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )																					
1. <u>Rubus laciniatus</u>		35	Yes	FACU																	
2. <u>    </u>																					
		35	=Total Cover																		
% Bare Ground in Herb Stratum <u>5</u>																					
Remarks:																					



## SOIL

Sampling Point: SP-104B

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:				Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Drift Deposits (B3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Geomorphic Position (D2)
		<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
Field Observations:					
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):		
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):		
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):		
(includes capillary fringe)				Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R		OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																																																																																												
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Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Sampling Date: <u>09/26/2023</u>																																																																																												
Section, Township, Range: <u>S11 T6N R5W</u>		Sampling Point: <u>SP-115</u>																																																																																												
Landform (hillside, terrace, etc.): <u>Flat</u>	Local relief (concave, convex, none): <u>Flat</u>	Slope (%): <u>0</u>																																																																																												
Subregion (LRR): <u>LRR A</u>	Lat: <u>46.024758 N</u>	Long: <u>123.271360 W</u>																																																																																												
Datum: <u>WGS 84</u>																																																																																														
Soil Map Unit Name: <u>7D Braun-Scaponia Silt Loams, 5 to 30 percent slopes</u>		NWI classification: <u>N/A</u>																																																																																												
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																																																																																														
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Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>		<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>																																																																																												
Remarks: Confirming no wetland present.																																																																																														
<b>VEGETATION – Use scientific names of plants.</b>																																																																																														
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## SOIL

Sampling Point: SP-106

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:				Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Drift Deposits (B3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Geomorphic Position (D2)
		<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
Field Observations:					
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):		
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):		
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):		
(includes capillary fringe)				Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																	
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/28/2023</u>																	
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>		Sampling Point: <u>SP-117A</u>																	
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S12 T6N R5W</u>																			
Landform (hillside, terrace, etc.): <u>Pond depression</u>		Local relief (concave, convex, none): <u>Concave</u>		Slope (%): <u>3</u>																	
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.106890</u>		Long: <u>123.239781</u>																	
Datum: <u>WGS 84</u>		Soil Map Unit Name: <u>5D: Anunde silt loam, 3 to 30 percent slopes</u>																			
		NW1 classification: <u>N/A</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>			<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>																		
Remarks: Excavated pond with storm water collection.																					
<b>VEGETATION – Use scientific names of plants.</b>																					
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1. <u>Alnus rubra</u>		<u>8</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
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1. <u>Typha latifolia</u>		<u>60</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Phalaris arundinacea</u>		<u>80</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Cirsium arvense</u>		<u>5</u>	<u>No</u>	<u>FAC</u>																	
4. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
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1. <u>Rubus ursinus</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>    </u>		<u>    </u>	<u>    </u>	<u>    </u>																	
		<u>10</u>	<u>=Total Cover</u>																		
% Bare Ground in Herb Stratum <u>5</u>																					
Remarks:																					



# SOIL

Sampling Point: SP-117A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 3/2	100					Loamy/Clayey	Loam
6-12	10YR 4/1	80	7.5YR 5/8	20	C	M	Loamy/Clayey	Silty clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:

# HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input checked="" type="checkbox"/> No _____      Depth (inches): <u>8</u> Saturation Present?      Yes <input checked="" type="checkbox"/> No _____      Depth (inches): <u>4</u> (includes capillary fringe)				<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
---	--	--	--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Pond depression 30%. Standing water one foot downslope from sample plot.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																	
Project/Site: <u>North Mist Resiliency</u>		City/County: <u>Columbia</u>		Sampling Date: <u>09/28/2023</u>																	
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>		Sampling Point: <u>SP-117B</u>																	
Investigator(s): <u>Joseph Patzych, Summer Roberts</u>		Section, Township, Range: <u>S12 T6N R5W</u>																			
Landform (hillside, terrace, etc.): <u>Pond depression</u>		Local relief (concave, convex, none): <u>Concave</u>		Slope (%): <u>15</u>																	
Subregion (LRR): <u>LRR A</u>		Lat: <u>46.106885</u>		Long: <u>123.239832</u>																	
Datum: <u>WGS 84</u>																					
Soil Map Unit Name: <u>5D: Anunde silt loam, 3 to 30 percent slopes</u>		NW1 classification: <u>N/A</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u>    </u> (If no, explain in Remarks.)																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u>    </u>																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>			<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>																		
Remarks: Upland representative plot for SP-117A.																					
<b>VEGETATION – Use scientific names of plants.</b>																					
<b>Tree Stratum</b> (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
1. <u>    </u>																					
2. <u>    </u>																					
3. <u>    </u>																					
4. <u>    </u>																					
			=Total Cover																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )					<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>505</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.88</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>35</u>	x 3 = <u>105</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>130</u> (A)	<u>505</u> (B)	Prevalence Index = B/A = <u>3.88</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>0</u>	x 2 = <u>0</u>																				
FAC species <u>35</u>	x 3 = <u>105</u>																				
FACU species <u>75</u>	x 4 = <u>300</u>																				
UPL species <u>20</u>	x 5 = <u>100</u>																				
Column Totals: <u>130</u> (A)	<u>505</u> (B)																				
Prevalence Index = B/A = <u>3.88</u>																					
1. <u>Cytisus scoparius</u>		<u>20</u>	Yes	UPL																	
2. <u>    </u>																					
3. <u>    </u>																					
4. <u>    </u>																					
5. <u>    </u>																					
		<u>20</u>	=Total Cover																		
<b>Herb Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Indicators:</b>  <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>    </u> 2 - Dominance Test is >50% <u>    </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>    </u>																					
2. <u>    </u>																					
3. <u>Cirsium arvense</u>		<u>35</u>	Yes	FAC																	
4. <u>    </u>																					
5. <u>    </u>																					
6. <u>    </u>																					
7. <u>    </u>																					
8. <u>    </u>																					
9. <u>    </u>																					
10. <u>    </u>																					
11. <u>    </u>																					
		<u>35</u>	=Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: <u>5</u> )					<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>																
1. <u>Rubus ursinus</u>		<u>75</u>	Yes	FACU																	
2. <u>    </u>																					
		<u>75</u>	=Total Cover																		
% Bare Ground in Herb Stratum <u>5</u>																					
Remarks:																					



## SOIL

Sampling Point: SP-117B

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> )	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2 4A, and 4B</b> )	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> )	<input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> )	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
(includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R		OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																			
Project/Site: <u>North Mist Expansion</u>		City/County: <u>Columbia</u>																			
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>																			
Investigator(s): <u>LFS</u>		Sampling Date: <u>12/20/2023</u>																			
Section, Township, Range: <u>S15 T6N R5W</u>		Sampling Point: <u>SP-118</u>																			
Landform (hillside, terrace, etc.): <u>terrace</u>		Slope (%): <u>0</u>																			
Local relief (concave, convex, none): <u>concave</u>																					
Subregion (LRR): <u>LRR A, MLRA 1</u> Lat: <u>46.003136</u>		Long: <u>-123.279365</u> Datum: <u>WGS 84</u>																			
Soil Map Unit Name: <u>58:Treharne Silt Loam</u>		NWI classification: <u>n/a</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>x</u> No <u>    </u> (If no, explain in Remarks.)																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>x</u> No <u>    </u>																					
Are Vegetation <u>    </u> , Soil <u>    </u> , or Hydrology <u>    </u> naturally problematic? (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>		<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>																			
Remarks:																					
<b>VEGETATION – Use scientific names of plants.</b>																					
Tree Stratum	(Plot size: <u>    </u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1.																					
2.																					
3.																					
4.																					
		=Total Cover																			
Sapling/Shrub Stratum	(Plot size: <u>    </u> )				<b>Prevalence Index worksheet:</b>  <table style="width:100%; font-size: small;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>315</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.15</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>85</u>	x 3 = <u>255</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>315</u> (B)	Prevalence Index = B/A = <u>3.15</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>0</u>	x 2 = <u>0</u>																				
FAC species <u>85</u>	x 3 = <u>255</u>																				
FACU species <u>15</u>	x 4 = <u>60</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>100</u> (A)	<u>315</u> (B)																				
Prevalence Index = B/A = <u>3.15</u>																					
1.																					
2.																					
3.																					
4.																					
5.																					
		=Total Cover																			
Herb Stratum	(Plot size: <u>5</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>    </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <i>Hypochaeris radicata</i>		10	No	FACU																	
2. <i>Schedonorus arundinaceus</i>		20	Yes	FAC																	
3. <i>Trifolium repens</i>		50	Yes	FAC																	
4. Unidentified grass assumed FAC		15	No	FAC																	
5. <i>Plantago lanceolata</i>		5	No	FACU																	
6.																					
7.																					
8.																					
9.																					
10.																					
11.																					
		100 =Total Cover																			
Woody Vine Stratum	(Plot size: <u>    </u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>																
1.																					
2.																					
		=Total Cover																			
% Bare Ground in Herb Stratum <u>    </u>																					
Remarks:																					



## SOIL

Sampling Point: SP-118

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/2	100					Loamy/Clayey	
8-14	10YR 3/4	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)		
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)		
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)			
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)			
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)			

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____		<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
Remarks:		

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>x</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>x</u> Depth (inches): _____ (includes capillary fringe)				<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks:				

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R		OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																			
Project/Site: <u>North Mist Expansion</u>		City/County: <u>Columbia</u>																			
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>																			
Investigator(s): <u>LFS</u>		Sampling Date: <u>12/20/2023</u>																			
Section, Township, Range: <u>S15 T6N R5W</u>		Sampling Point: <u>SP-119</u>																			
Landform (hillside, terrace, etc.): <u>terrace</u>		Local relief (concave, convex, none): <u>concave</u>																			
Slope (%): _____																					
Subregion (LRR): <u>LRR A, MLRA 1</u>		Lat: <u>46.004013</u>																			
Long: <u>-123.279021</u>		Datum: <u>WGS 84</u>																			
Soil Map Unit Name: <u>58:Treharne Silt Loam</u>		NWI classification: <u>n/a</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year?    Yes _____ No _____ (If no, explain in Remarks.)																					
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed?    Are "Normal Circumstances" present?    Yes _____ No _____																					
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?    (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present?    Yes _____ No <u>n/a</u> Hydric Soil Present?    Yes _____ No <u>n/a</u> Wetland Hydrology Present?    Yes _____ No <u>X</u>		<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u>																			
Remarks: This plot was only to document the presence of hydrology to determine wetland boundary. Several holes were dug to determine wetland boundary based on saturation and a corresponding water table.																					
<b>VEGETATION – Use scientific names of plants.</b>																					
Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
1. _____																					
2. _____																					
3. _____																					
4. _____																					
		=Total Cover			<b>Prevalence Index worksheet:</b>  <table style="width:100%; font-size: small;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																				
OBL species _____	x 1 = _____																				
FACW species _____	x 2 = _____																				
FAC species _____	x 3 = _____																				
FACU species _____	x 4 = _____																				
UPL species _____	x 5 = _____																				
Column Totals: _____ (A)	_____ (B)																				
Prevalence Index = B/A = _____																					
Sapling/Shrub Stratum	(Plot size: _____)																				
1. _____																					
2. _____																					
3. _____																					
4. _____																					
		=Total Cover																			
Herb Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Indicators:</b> _____ 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ 5 - Wetland Non-Vascular Plants <sup>1</sup> _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. _____																					
2. _____																					
3. _____																					
4. _____																					
5. _____																					
6. _____																					
7. _____																					
8. _____																					
9. _____																					
10. _____																					
		=Total Cover																			
Woody Vine Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>																
1. _____																					
2. _____																					
		=Total Cover																			
% Bare Ground in Herb Stratum _____																					
Remarks:																					



## SOIL

Sampling Point: SP-119

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except</b>	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b>	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> <b>MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> <b>4A, and 4B)</b>	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> )	<input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> )	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)			
<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: It had rained the day before and the ground was moist.			

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R		OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																			
Project/Site: <u>North Mist Expansion</u>		City/County: <u>Columbia</u>																			
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>																			
Investigator(s): <u>LFS</u>		Sampling Date: <u>12/20/2023</u>																			
Section, Township, Range: <u>S15 T6N R5W</u>		Sampling Point: <u>SP-120</u>																			
Landform (hillside, terrace, etc.): <u>terrace</u>	Local relief (concave, convex, none): <u>concave</u>	Slope (%): <u>0</u>																			
Subregion (LRR): <u>LRR A, MLRA 1</u>	Lat: <u>46.004116</u>	Long: <u>-123.279184</u>																			
Datum: <u>WGS 84</u>																					
Soil Map Unit Name: <u>58:Treharne Silt Loam</u>		NWI classification: <u>n/a</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year?    Yes <input type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)																					
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?    Are "Normal Circumstances" present?    Yes <input type="checkbox"/> No <input type="checkbox"/>																					
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?    (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																			
Remarks:																					
<b>VEGETATION – Use scientific names of plants.</b>																					
Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1.																					
2.																					
3.																					
4.																					
=Total Cover																					
Sapling/Shrub Stratum	(Plot size: _____)				<b>Prevalence Index worksheet:</b>  <table style="width:100%; font-size: small;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>100</u></td> <td>x 3 = <u>300</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>300</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>100</u>	x 3 = <u>300</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>300</u> (B)	Prevalence Index = B/A = <u>3.00</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>0</u>	x 2 = <u>0</u>																				
FAC species <u>100</u>	x 3 = <u>300</u>																				
FACU species <u>0</u>	x 4 = <u>0</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>100</u> (A)	<u>300</u> (B)																				
Prevalence Index = B/A = <u>3.00</u>																					
1.																					
2.																					
3.																					
4.																					
5.																					
=Total Cover																					
Herb Stratum	(Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>5</u> - Wetland Non-Vascular Plants <sup>1</sup> <u>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</u>  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1.	<u>Trifolium repens</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
2.	<u>Schedonorus arundinaceus</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>																	
3.	<u>Ranunculus repens</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
4.	<u>Unidentified grass (assumed FAC)</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>																	
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					
11.																					
100 =Total Cover																					
Woody Vine Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
1.																					
2.																					
=Total Cover																					
% Bare Ground in Herb Stratum _____																					
Remarks:																					
Pasture vegetation is short from mowing and elk grazing. Grasses did not have seed heads.																					



## SOIL

Sampling Point: SP-120

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 3/2	95	2.5YR 3/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations
3-14	10YR 3/2	85	2.5YR 3/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 4/1	5	D	M		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 9 Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 5 (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R		OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																			
Project/Site: <u>North Mist Expansion</u>		City/County: <u>Columbia</u>																			
Applicant/Owner: <u>NW Natural</u>		State: <u>OR</u>																			
Investigator(s): <u>LFS</u>		Sampling Date: <u>12/20/2023</u>																			
Section, Township, Range: <u>S15 T6N R5W</u>		Sampling Point: <u>SP-121</u>																			
Landform (hillside, terrace, etc.): <u>terrace</u>		Local relief (concave, convex, none): <u>concave</u>																			
Slope (%): <u>0</u>																					
Subregion (LRR): <u>LRR A, MLRA 1</u>		Lat: <u>46.003445</u>																			
Long: <u>-123.280494</u>		Datum: <u>WGS 84</u>																			
Soil Map Unit Name: <u>58:Treharne Silt Loam</u>		NWI classification: <u>n/a</u>																			
Are climatic / hydrologic conditions on the site typical for this time of year?    Yes <u>      </u> No <u>      </u> (If no, explain in Remarks.)																					
Are Vegetation <u>      </u> , Soil <u>      </u> , or Hydrology <u>      </u> significantly disturbed?    Are "Normal Circumstances" present?    Yes <u>      </u> No <u>      </u>																					
Are Vegetation <u>      </u> , Soil <u>      </u> , or Hydrology <u>      </u> naturally problematic?    (If needed, explain any answers in Remarks.)																					
<b>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</b>																					
Hydrophytic Vegetation Present?    Yes <u>  X  </u> No <u>      </u> Hydric Soil Present?    Yes <u>      </u> No <u>  X  </u> Wetland Hydrology Present?    Yes <u>      </u> No <u>  X  </u>		<b>Is the Sampled Area within a Wetland?</b> Yes <u>      </u> No <u>  X  </u>																			
Remarks:																					
<b>VEGETATION – Use scientific names of plants.</b>																					
Tree Stratum	(Plot size: <u>          </u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>          3          </u> (A)  Total Number of Dominant Species Across All Strata: <u>          5          </u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>          60.0%          </u> (A/B)																
1.																					
2.																					
3.																					
4.																					
=Total Cover																					
Sapling/Shrub Stratum	(Plot size: <u>          </u> )				<b>Prevalence Index worksheet:</b>  <table style="width:100%; font-size: small;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>          0          </u></td> <td>x 1 = <u>          0          </u></td> </tr> <tr> <td>FACW species <u>         15         </u></td> <td>x 2 = <u>         30         </u></td> </tr> <tr> <td>FAC species <u>          45         </u></td> <td>x 3 = <u>         135         </u></td> </tr> <tr> <td>FACU species <u>          40         </u></td> <td>x 4 = <u>         160         </u></td> </tr> <tr> <td>UPL species <u>          0          </u></td> <td>x 5 = <u>          0          </u></td> </tr> <tr> <td>Column Totals: <u>         100         </u> (A)</td> <td><u>         325         </u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>         3.25         </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>          0          </u>	x 1 = <u>          0          </u>	FACW species <u>         15         </u>	x 2 = <u>         30         </u>	FAC species <u>          45         </u>	x 3 = <u>         135         </u>	FACU species <u>          40         </u>	x 4 = <u>         160         </u>	UPL species <u>          0          </u>	x 5 = <u>          0          </u>	Column Totals: <u>         100         </u> (A)	<u>         325         </u> (B)	Prevalence Index = B/A = <u>         3.25         </u>	
Total % Cover of:	Multiply by:																				
OBL species <u>          0          </u>	x 1 = <u>          0          </u>																				
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UPL species <u>          0          </u>	x 5 = <u>          0          </u>																				
Column Totals: <u>         100         </u> (A)	<u>         325         </u> (B)																				
Prevalence Index = B/A = <u>         3.25         </u>																					
1.																					
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3.																					
4.																					
5.																					
=Total Cover																					
Herb Stratum	(Plot size: <u>          5'          </u> )				<b>Hydrophytic Vegetation Indicators:</b>  <u>      </u> 1 - Rapid Test for Hydrophytic Vegetation <u>  X  </u> 2 - Dominance Test is >50% <u>      </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>      </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1.	<u>Schedonorus arundinaceus</u>	<u>         20         </u>	<u>      Yes      </u>	<u>      FAC      </u>																	
2.	<u>Phalaris arundinacea</u>	<u>         15         </u>	<u>      Yes      </u>	<u>      FACW      </u>																	
3.	<u>Senecio jacobaea</u>	<u>          5         </u>	<u>      No      </u>	<u>      FACU      </u>																	
4.	<u>Trifolium pratense</u>	<u>         20         </u>	<u>      Yes      </u>	<u>      FACU      </u>																	
5.	<u>Ranunculus repens</u>	<u>         10         </u>	<u>      No      </u>	<u>      FAC      </u>																	
6.	<u>Taraxacum officinale</u>	<u>         15         </u>	<u>      Yes      </u>	<u>      FACU      </u>																	
7.	<u>Unidentified grass (assumed FAC)</u>	<u>         15         </u>	<u>      Yes      </u>	<u>      FAC      </u>																	
8.																					
9.																					
10.																					
11.																					
=Total Cover																					
Woody Vine Stratum	(Plot size: <u>          </u> )																				
1.																					
2.																					
=Total Cover																					
% Bare Ground in Herb Stratum <u>          </u>																					
Remarks:																					



## SOIL

Sampling Point: SP-121

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 2/2	100					Loamy/Clayey	
10-14	10YR 4/6	80	2.5YR 4/3	20	D	M	Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>except MLRA 1</b> ) <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D, G</b> ) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G</b> ) <input type="checkbox"/> Redox Depressions (F8)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR A, E</b> ) <input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR D</b> ) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> Other (Explain in Remarks)  <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
Remarks:	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b>			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> )	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2, 4A, and 4B</b> )	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> )	<input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> )	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>x</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>x</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region</b> See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>North Mist Expansion</u>	City/County: <u>Columbia</u>	Sampling Date: <u>12/20/2023</u>
Applicant/Owner: <u>NW Natural</u>	State: <u>OR</u>	Sampling Point: <u>SP-122</u>
Investigator(s): <u>LFS</u>	Section, Township, Range: <u>S15 T6N R5W</u>	
Landform (hillside, terrace, etc.): <u>terrace</u>	Local relief (concave, convex, none): <u>none</u>	Slope (%): <u>0</u>
Subregion (LRR): <u>LRR A, MLRA 1</u>	Lat: <u>46.003446</u>	Long: <u>-123.280497</u> Datum: <u>WGS 84</u>
Soil Map Unit Name: <u>58:Treharne Silt Loam</u>	NWI classification: <u>n/a</u>	
Are climatic / hydrologic conditions on the site typical for this time of year?    Yes <u>      </u> No <u>      </u> (If no, explain in Remarks.)		
Are Vegetation <u>      </u> , Soil <u>      </u> , or Hydrology <u>      </u> significantly disturbed?    Are "Normal Circumstances" present?    Yes <u>      </u> No <u>      </u>		
Are Vegetation <u>      </u> , Soil <u>      </u> , or Hydrology <u>      </u> naturally problematic?    (If needed, explain any answers in Remarks.)		

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?    Yes <u>  X  </u> No <u>      </u> Hydric Soil Present?    Yes <u>  X  </u> No <u>      </u> Wetland Hydrology Present?    Yes <u>  X  </u> No <u>      </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>  X  </u> No <u>      </u>
Remarks:	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>      </u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1.					<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>      3      </u> (A)  Total Number of Dominant Species Across All Strata: <u>      3      </u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>      100.0%      </u> (A/B)																
2.																					
3.																					
4.																					
		=Total Cover																			
Sapling/Shrub Stratum	(Plot size: <u>      </u> )				<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>      0      </u></td> <td>x 1 = <u>      0      </u></td> </tr> <tr> <td>FACW species <u>      45      </u></td> <td>x 2 = <u>      90      </u></td> </tr> <tr> <td>FAC species <u>      55      </u></td> <td>x 3 = <u>      165      </u></td> </tr> <tr> <td>FACU species <u>      0      </u></td> <td>x 4 = <u>      0      </u></td> </tr> <tr> <td>UPL species <u>      0      </u></td> <td>x 5 = <u>      0      </u></td> </tr> <tr> <td>Column Totals: <u>      100      </u> (A)</td> <td><u>      255      </u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>      2.55      </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>      0      </u>	x 1 = <u>      0      </u>	FACW species <u>      45      </u>	x 2 = <u>      90      </u>	FAC species <u>      55      </u>	x 3 = <u>      165      </u>	FACU species <u>      0      </u>	x 4 = <u>      0      </u>	UPL species <u>      0      </u>	x 5 = <u>      0      </u>	Column Totals: <u>      100      </u> (A)	<u>      255      </u> (B)	Prevalence Index = B/A = <u>      2.55      </u>	
Total % Cover of:	Multiply by:																				
OBL species <u>      0      </u>	x 1 = <u>      0      </u>																				
FACW species <u>      45      </u>	x 2 = <u>      90      </u>																				
FAC species <u>      55      </u>	x 3 = <u>      165      </u>																				
FACU species <u>      0      </u>	x 4 = <u>      0      </u>																				
UPL species <u>      0      </u>	x 5 = <u>      0      </u>																				
Column Totals: <u>      100      </u> (A)	<u>      255      </u> (B)																				
Prevalence Index = B/A = <u>      2.55      </u>																					
1.																					
2.																					
3.																					
4.																					
5.																					
		=Total Cover																			
Herb Stratum	(Plot size: <u>      5'      </u> )				<b>Hydrophytic Vegetation Indicators:</b>  <u>      </u> 1 - Rapid Test for Hydrophytic Vegetation <u>  X  </u> 2 - Dominance Test is >50% <u>  X  </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>      </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> 5 - Wetland Non-Vascular Plants <sup>1</sup> <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1.	<u>Phalaris arundinacea</u>	<u>      45      </u>	<u>      Yes      </u>	<u>      FACW      </u>																	
2.	<u>Unidentified grass (assumed FAC)</u>	<u>      25      </u>	<u>      Yes      </u>	<u>      FAC      </u>																	
3.	<u>Ranunculus repens</u>	<u>      25      </u>	<u>      Yes      </u>	<u>      FAC      </u>																	
4.	<u>Trifolium repens</u>	<u>      5      </u>	<u>      No      </u>	<u>      FAC      </u>																	
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					
11.																					
		<u>      100      </u> =Total Cover																			
Woody Vine Stratum	(Plot size: <u>      </u> )																				
1.																					
2.																					
		=Total Cover																			
% Bare Ground in Herb Stratum <u>      </u>																					
Remarks:																					



## SOIL

Sampling Point: SP-122

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/1	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
8-14	10YR 4/2	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 12 Saturation Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 8 (includes capillary fringe)				<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks:				

U.S. Army Corps of Engineers		OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)	
WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R			
Project/Site: North Mist Expansion		City/County: Columbia	
Applicant/Owner: NW Natural		State: OR	
Investigator(s): LFS		Section, Township, Range: S15 T6N R5W	
Landform (hillside, terrace, etc.): terrace		Local relief (concave, convex, none): none	
Subregion (LRR): LRR A, MLRA 1		Slope (%): 1	
Lat: 46.003636		Long: -123.281195	
Datum: WGS 84		Soil Map Unit Name: 58:Treharne Silt Loam	
NW1 classification: n/a		Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly disturbed?		Are "Normal Circumstances" present? Yes No	
Are Vegetation, Soil, or Hydrology naturally problematic?		(If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes X No		Is the Sampled Area within a Wetland? Yes No X	
Hydric Soil Present? Yes No X			
Wetland Hydrology Present? Yes No X			
Remarks: This wetland boundary was mostly based on presence/absence of mowed reed canary grass and presence/absence of saturation/water table. Slight incline to the south towards the road.			
VEGETATION – Use scientific names of plants.			
Tree Stratum (Plot size: )		Absolute % Cover Dominant Species? Indicator Status	
1.			
2.			
3.			
4.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: )			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. Ranunculus repens		5 No FAC	
2. Schedonorus arundinaceus		70 Yes FAC	
3. Unidentified grass (assumed FAC)		15 No FAC	
4. Hypochaeris radicata		5 No FACU	
5. Phalaris arundinacea		5 No FACW	
6.			
7.			
8.			
9.			
10.			
11.			
		100 =Total Cover	
Woody Vine Stratum (Plot size: )			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum			
Remarks:			



# SOIL

Sampling Point: SP-123

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 3/2	100					Loamy/Clayey	
2-14	10YR 3/2	95	10YR 3/6	4	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR A, E)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D, G)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:  
Fine roots throughout 14 inches

# HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present?    Yes _____ No <u>x</u> Depth (inches): _____ Saturation Present?    Yes _____ No <u>x</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## **Appendix B. SDAM Forms**



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# Streamflow Duration Field Assessment Form

Project # / Name     North Mist Expansion Project		Assessor Sara Frank																					
Address		Date 9/29/2029																					
Waterway Name     ST-01		Coordinates at downstream end (ddd.mm.ss)     Lat.     46.0075756     N Long.     -123.265736     W																					
Reach Boundaries		<input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")																					
Precipitation w/in 48 hours (cm)     None		Channel Width (m) 53 feet																					
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u>																						
	% of reach w/any flow (surface or hyporheic) <u>0</u>																						
	# of pools observed <u>0</u>																						
<b>Observations</b>	<b>Observed Wetland Plants (and indicator status):</b>  Reed canary grass - FACW Carex sp. - FACW/OBL		<b>Observed Macroinvertebrates:</b>  <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Taxon</th> <th style="width:15%;">Indicator Status</th> <th style="width:15%;">Ephemer-optera?</th> <th style="width:30%;"># of Individuals</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Taxon	Indicator Status	Ephemer-optera?	# of Individuals																
	Taxon	Indicator Status	Ephemer-optera?	# of Individuals																			
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																						
	2. Are 6 or more individuals of the Order Ephemeroptera present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																						
	3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																						
	4. Are FACW, OBL, or SAV plants present? (Within ½ channel width) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																						
	5. What is the slope? (In percent, measured for the valley, not the stream) <u>1</u> %																						
<b>Conclusions</b>																							
	<table style="width:100%;"> <tr> <td style="width:35%;"> <b>Single Indicators:</b>  <input type="checkbox"/> Fish  <input type="checkbox"/> Amphibians         </td> <td style="width:65%;"> <b>Finding:</b>     <input type="checkbox"/> Ephemeral                              <input type="checkbox"/> Intermittent                              <input checked="" type="checkbox"/> Perennial         </td> </tr> </table>			<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial																		
<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial																						



## Streamflow Duration Field Assessment Form

**Notes:** single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Braided perennial stream has gravel banks and vegetated gravel bars. Vegetation on banks includes carex, red alders, stinging nettle, reed canary grass, and blackberry.

**Ancillary Information:**

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

# Streamflow Duration Field Assessment Form

Project # / Name     North Mist Expansion Project		Assessor Sara Frank																	
Address		Date 10/6/2022																	
Waterway Name     ST-02		Coordinates at Lat.     46.014     N																	
Reach Boundaries		downstream end Long.     -123.268     W (ddd.mm.ss)																	
Precipitation w/in 48 hours (cm)     None	Channel Width (m) 4 feet	<input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")																	
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u>																		
	% of reach w/any flow (surface or hyporheic) <u>0</u>																		
	# of pools observed <u>0</u>																		
<b>Observations</b>	<b>Observed Wetland Plants (and indicator status):</b>  Oenanthe sarmentosa - OBL Ranunculus sceleratus - OBL	<b>Observed Macroinvertebrates:</b>  <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:35%;">Taxon</th> <th style="width:15%;">Indicator Status</th> <th style="width:20%;">Ephemer-optera?</th> <th style="width:30%;"># of Individuals</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		Taxon	Indicator Status	Ephemer-optera?	# of Individuals												
	Taxon	Indicator Status	Ephemer-optera?	# of Individuals															
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																		
	2. Are 6 or more individuals of the Order Ephemeroptera present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																		
	3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																		
	4. Are FACW, OBL, or SAV plants present? (Within ½ channel width) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																		
	5. What is the slope? (In percent, measured for the valley, not the stream) <u>8</u> %																		
<b>Conclusions</b>																			
	<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <b>Single Indicators:</b>  <input type="checkbox"/> Fish  <input type="checkbox"/> Amphibians </div> <div style="width: 65%;"> <b>Finding:</b>     <input type="checkbox"/> Ephemeral  <input type="checkbox"/> Intermittent  <input checked="" type="checkbox"/> Perennial </div> </div>																		



## Streamflow Duration Field Assessment Form

**Notes:** single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Wetland 10 becomes channelized and channel loses vegetation. Banks are steeply cut and an average height of about 5 feet. Banks include red alder, sword fern, trailing blackberry, and stinging nettle. Obligate wetland plants near origination of stream.

**Ancillary Information:**

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

# Streamflow Duration Field Assessment Form

Project # / Name      North Mist Expansion Project		Assessor Sara Frank																								
Address		Date 10/11/2022																								
Waterway Name      ST-03		Coordinates at downstream end (ddd.mm.ss)      Lat.      46.048      N Long.      -123.281      W																								
Reach Boundaries		<input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")																								
Precipitation w/in 48 hours (cm)      None	Channel Width (m)      3 feet																									
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u>																									
	% of reach w/any flow (surface or hyporheic) <u>0</u>																									
	# of pools observed <u>0</u>																									
<b>Observations</b>	<b>Observed Wetland Plants (and indicator status):</b> None	<b>Observed Macroinvertebrates:</b>																								
		<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Taxon</th> <th style="text-align: left;">Indicator Status</th> <th style="text-align: left;">Ephemeroptera?</th> <th style="text-align: left;"># of Individuals</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		Taxon	Indicator Status	Ephemeroptera?	# of Individuals																			
Taxon	Indicator Status	Ephemeroptera?	# of Individuals																							
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																									
	2. Are 6 or more individuals of the Order Ephemeroptera present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																									
	3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																									
	4. Are FACW, OBL, or SAV plants present? (Within ½ channel width) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																									
	5. What is the slope? (In percent, measured for the valley, not the stream) <u>14</u> %																									
<b>Conclusions</b>																										
	<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial																								



## Streamflow Duration Field Assessment Form

**Notes:** single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Narrow channel runs out of project area at the bottom of a steep hillside. Channel is fully vegetated with piggyback plant, trailing blackberry, douglas fir sappings, braken fern, and velvet grass

**Ancillary Information:**

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

## Appendix B: Streamflow Duration Field Assessment Form

Project # / Name <u>North Mist Resiliency</u>		Assessor <u>Joseph Parzych, Summer Roberts</u>								
Address <u>N/A</u>		Date <u>09/27/2023</u>								
Waterway Name <u>ST-05</u>		Coordinates at downstream end Lat. <u>46.053384</u> N Long. <u>123.305798</u> W								
Reach Boundaries <u>Originates in study area, flows out of study area (road, mm, ss)</u>										
Precipitation w/in 48 hours (cm) <u>1.2</u>		Channel Width (m) <u>1</u>								
<input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")										
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>N/A</u>									
	% of reach w/any flow (surface or hyporheic) <u>N/A</u>									
	# of pools observed <u>0</u>									
<b>Observations</b>	<b>Observed Wetland Plants</b> (and indicator status):  <u>None.</u>		<b>Observed Macroinvertebrates:</b> <u>None.</u>							
			<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Taxon</th> <th style="text-align: left;">Indicator Status</th> <th style="text-align: left;">Ephemeroptera?</th> <th style="text-align: left;"># of Individuals</th> </tr> <tr> <td colspan="4" style="height: 50px;"></td> </tr> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals			
Taxon	Indicator Status	Ephemeroptera?	# of Individuals							
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	2. Are 6 or more individuals of the Order Ephemeroptera present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	3. Are perennial indicator taxa present? (refer to Table 1) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	5. What is the slope? (In percent, measured for the valley, not the stream) <u>20</u> %									
<b>Conclusions</b>										
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; padding: 5px;"> <b>Single Indicators:</b>  <input type="checkbox"/> Fish  <input type="checkbox"/> Amphibians             </td> <td style="padding: 5px;"> <b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral  <input type="checkbox"/> Intermittent  <input type="checkbox"/> Perennial             </td> </tr> </table>			<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial					
<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial									

0.49  
0.062



**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

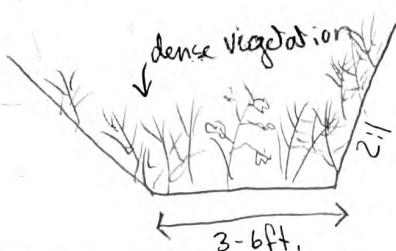
☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Ephemeral drainage filled with upland species:



*Polystichum munitum*  
*Thuja plicata*  
*Acer circinatum*  
*Mahonia repens*  
*Pseudotsuga menziesii*  
*Alnus rubra*  
*Oplopanax horridus*

**Ancillary Information:**

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	None	
		Location Observed	Number of Individuals Observed

## **Appendix C. Wetlands and Waters Photolog**



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Photo 1. Southeast end of WET-01, wetland extends northwest between gravel road and laydown yard. Surface soil cracking can be seen in the foreground.. Looking NW. Taken: 9/27/2022. Lat/Long: 45.9987068, -123.2596903.



Photo 2. Facing into survey area in ditch along gravel road.. Looking SE. Taken: 9/27/2022. Lat/Long: 45.9990031, -123.2599982.



Photo 3. Shovel in pit along WET-01 boundary. Soft rush (*Juncus effusus*) dominates within the slight depression.. Looking SE. Taken: 9/27/2022. Lat/Long: 45.99887081, -123.259912.



Photo 12. Shovel showing the location of SP-12.. Looking SE. Taken: 9/29/2022. Lat/Long: 46.00309017, -123.2622761.





Photo 13. Shovel showing the location of SP-16.. Looking S. Taken: 9/29/2022. Lat/Long: 46.00328593, -123.2623231.



Photo 14. South end of WET-03.. Looking N. Taken: 9/29/2022. Lat/Long: 46.00329642, -123.2622828.



Photo 15. Looking east into WET-03 from a gravel road.. Looking E. Taken: 9/30/2022. Lat/Long: 46.00524683, -123.2621361.



Photo 16. Looking southeast into WET-03 from a gravel road.. Looking SE. Taken: 9/30/2022. Lat/Long: 46.0048796, -123.2622001.





Photo 17. Looking northeast into WET-03 from a gravel road.. Looking NE. Taken: 9/30/2022. Lat/Long: 46.00372573, -123.2623645.



Photo 18. Shovel on WET-03 boundary. Slough sedge (*Carex obnupta*) and low elevation (right) within wetland. Sword fern (*Polystichum munitum*) and dwarf rose (*Rosa gymnocarpa*) uphill of wetland (left).. Looking E. Taken: 9/30/2022. Lat/Long: 46.0056232, -123.2620488.



Photo 19. Shovel marking elevation change between upland and WET-03 plots. Looking SW. Taken: 9/30/2022. Lat/Long: 46.00417136, -123.2620551.

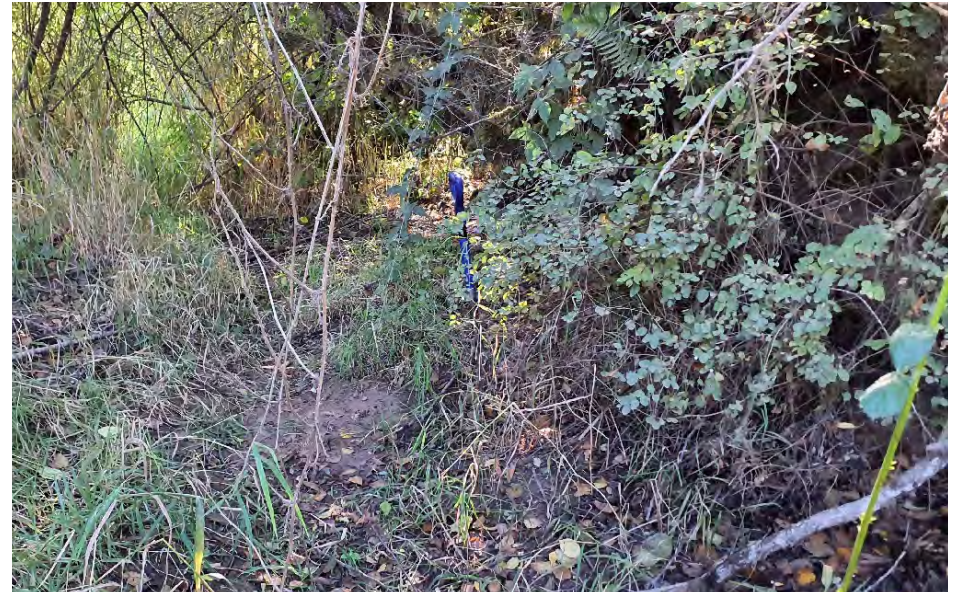


Photo 20. Shovel on WET-03 boundary, marking elevation change between snowberry (*Symphoricarpos albus*) and reed canary grass (*Phalaris arundinacea*).. Looking S. Taken: 9/30/2022. Lat/Long: 46.00395526, -123.2620621.





Photo 21. Shovel marking WET-03 boundary.. Looking N. Taken: 9/30/2022. Lat/Long: 46.0042282, -123.2622615.



Photo 22. Shovel marks change in elevation and vegetation. Slough sedge and low elevation (right) and higher elevation (left).. Looking S. Taken: 9/30/2022. Lat/Long: 46.00355977, -123.2622655.



Photo 23. Facing the south end of WET-04.. Looking SE. Taken: 10/4/2022. Lat/Long: 46.00196109, -123.2626155.



Photo 24. Typical vegetation community south of WET-04 includes cascara (*Frangula purshiana*), big leaf maple (*Acer macrophyllum*), trailing blackberry (*Rubus ursinus*), sword fern, and oso-berry (*Oemleria cerasiformis*).. Looking N. Taken: 10/4/2022. Lat/Long: 46.00153738, -123.2625149.





Photo 25. Looking east into WET-04. Looking E. Taken: 10/4/2022. Lat/Long: 46.0029031, -123.2628134.



Photo 26. Looking toward sample plots on northwest end of WET-04.. Looking NE. Taken: 10/5/2022. Lat/Long: 46.00425562, -123.2627347.



Photo 27. Conifers and other upland vegetation in background. End of reed canary grass marks WET-04 boundary.. Looking N. Taken: 10/5/2022. Lat/Long: 46.00420196, -123.2627162.



Photo 28. Shovel marking change in elevation and vegetation of WET-04.. Looking E. Taken: 10/4/2022. Lat/Long: 46.00224749, -123.2627715.





Photo 29. Shovel marking boundary where sudden elevation change of WET-04 is present.. Looking N. Taken: 10/4/2022. Lat/Long: 46.00209574, -123.2627263.



Photo 30. Culvert outflow into dense reed canary grass.. Looking E. Taken: 10/4/2022. Lat/Long: 46.00197452, -123.2626028.



Photo 31. Culvert outflow at pink flagging tape.. Looking N. Taken: 10/4/2022. Lat/Long: 46.00335513, -123.2625839.



Photo 32. Culvert end.. Looking SE. Taken: 10/5/2022. Lat/Long: 46.00378456, -123.2625327.





Photo 33. Conifers (upland) at north edge of WET-04.. Looking N. Taken: 10/5/2022. Lat/Long: 46.00445311, -123.2625078.



Photo 34. WET-05 boundary.. Looking NW. Taken: 10/5/2022. Lat/Long: 46.00629087, -123.263409.



Photo 35. General site conditions of D-04.. Looking SE. Taken: 10/5/2022. Lat/Long: 46.00658771, -123.2633822.



Photo 36. General site conditions of D-04.. Looking SE. Taken: 10/5/2022. Lat/Long: 46.0061194, -123.2626789.





Photo 37. Culvert outflow into creek.. Looking NE. Taken: 10/6/2022. Lat/Long: 46.00766304, -123.2656578.



Photo 38. View of ST-01 from road.. Looking SW. Taken: 10/6/2022. Lat/Long: 46.00774669, -123.265486.



Photo 39. Looking at vegetated gravel bar from left bank of ST-01.. Looking W. Taken: 10/6/2022. Lat/Long: 46.00755025, -123.2655918.



Photo 40. ST-01 around bend before culvert inflow.. Looking E. Taken: 10/6/2022. Lat/Long: 46.00785005, -123.2654211.





Photo 41. ST-01 flowing into study area.. Looking W. Taken: 10/6/2022. Lat/Long: 46.00773249, -123.2645809.



Photo 42. WET-08 boundary.. Looking E. Taken: 10/6/2022. Lat/Long: 46.00794175, -123.2657762.



Photo 43. WET-08 boundary.. Looking W. Taken: 10/6/2022. Lat/Long: 46.00791901, -123.2654915.



Photo 44. Looking down survey corridor.. Looking S. Taken: 10/6/2022. Lat/Long: 46.01593472, -123.2685425.





Photo 45. General site conditions of WET-10.. Looking NW. Taken: 10/6/2022. Lat/Long: 46.01414056, -123.2679911.



Photo 46. General site conditions of ST-02.. Looking SE. Taken: 10/7/2022. Lat/Long: 46.01402106, -123.2677977.



Photo 47. Shovel is at upland verification plot of WET-07a.. Looking E. Taken: 10/6/2022. Lat/Long: 46.00772743, -123.2656592.



Photo 48. Very large culverts under the mainline road conveys perennial ST-01.. Looking E. Taken: 10/6/2022. Lat/Long: 46.00771432, -123.2655757.





Photo 49. Vegetated gravel bar below the OHWL of the stream. Looking NE. Taken: 10/6/2022. Lat/Long: 46.00760388, -123.2658592.



Photo 50. Shovel is at SP-66. Looking NW. Taken: 10/6/2022. Lat/Long: 46.00747524, -123.2652799.



Photo 51. Facing large culverts under mainline road. Looking NW. Taken: 10/6/2022. Lat/Long: 46.00758645, -123.2655033.



Photo 52. Vegetated gravel bar below the ordinary high water line of ST-01.. Looking NW. Taken: 10/6/2022. Lat/Long: 46.00759704, -123.265693.





Photo 53. General site conditions of WET-07b.. Looking S. Taken: 10/6/2022. Lat/Long: 46.00761574, -123.2656526.



Photo 54. Southern boundary of WET-08.. Looking W. Taken: 10/6/2022. Lat/Long: 46.00792537, -123.265445.



Photo 55. General site conditions of WET-09.. Looking S. Taken: 10/6/2022. Lat/Long: 46.01487445, -123.2678965.



Photo 56. Looking uphill towards WET-09 and WET-10.. Looking N. Taken: 10/7/2022. Lat/Long: 46.01310947, -123.2680556.





Photo 57. General site conditions of WET-11.. Looking N. Taken: 10/10/2022. Lat/Long: 46.00938111, -123.268004.



Photo 58. General site conditions of WET-11.. Looking S. Taken: 10/10/2022. Lat/Long: 46.00962635, -123.267972.



Photo 59. Looking downhill along survey corridor.. Looking SE. Taken: 10/10/2022. Lat/Long: 46.00879983, -123.2679932.



Photo 60. General site conditions of WET-12.. Looking SE. Taken: 10/10/2022. Lat/Long: 46.00833994, -123.2678142.





Photo 61. Looking uphill along survey corridor.. Looking NW. Taken: 10/10/2022. Lat/Long: 46.0083655, -123.2677468.



Photo 62. General site conditions of WET-12.. Looking NW. Taken: 10/10/2022. Lat/Long: 46.00814732, -123.2671607.



Photo 71. Looking east along D-05.. Looking E. Taken: 10/10/2022. Lat/Long: 46.00786582, -123.2670364.



Photo 79. Scotch broom, ragwort (*Jacobaea vulgaris*), and Douglas fir saplings on edge of Douglas fir forest.. Looking SE. Taken: 10/10/2022. Lat/Long: 46.04664351, -123.2812842.





Photo 83. Scotch broom and stumps off of a logging access road.. Looking E. Taken: 10/10/2022. Lat/Long: 46.01771429, -123.2714253.



Photo 88. General site conditions of ST-03.. Looking S. Taken: 10/11/2022. Lat/Long: 46.04804537, -123.2805819.





Photo 90. General site conditions of WET-15a.. Looking N. Taken: 10/11/2022. Lat/Long: 46.05107332, -123.2875457.



Photo 91. General site conditions of WET-15a.. Looking SW. Taken: 10/11/2022. Lat/Long: 46.0510914, -123.2875455.



Photo 92. General site conditions of WET-15a.. Looking NW. Taken: 10/11/2022. Lat/Long: 46.05094923, -123.2876333.

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Photo 93. General site conditions of WET-15a.. Looking SW. Taken: 10/11/2022. Lat/Long: 46.05112544, -123.2875354.



Photo 94. Looking north up a grassy hillside.. Looking N. Taken: 10/11/2022. Lat/Long: 46.05050037, -123.2904934.



Photo 95. Dense young forest.. Looking E. Taken: 10/11/2022. Lat/Long: 46.05256813, -123.2957118.



Photo 96. Logged hillside with no wetland or water features.. Looking NW. Taken: 10/11/2022. Lat/Long: 46.05187449, -123.2986267.





Photo 97. Well pad.. Looking N. Taken: 10/11/2022. Lat/Long: 46.0517453, -123.298432.



Photo 98. Logged hillside with no wetland or water features.. Looking S. Taken: 10/11/2022. Lat/Long: 46.05153555, -123.2982326.



Photo 112. Looking northwest along narrow gravel road.. Looking NW. Taken: 10/11/2022. Lat/Long: 46.04741619, -123.3124775.





Photo 125. Steep drop into Douglas fir, vine maple, and sword fern vegetation.. Looking S. Taken: 10/11/2022. Lat/Long: 46.04648541, -123.2817556.



Photo 126. Very steep drop off on forested hillside.. Looking NE. Taken: 10/11/2022. Lat/Long: 46.04778493, -123.2811709.



Photo 128. Overgrown with sword ferns.. Looking SE. Taken: 10/11/2022. Lat/Long: 46.0477695, -123.2803955.



Photo 129. Culvert outflow is short, wide, and mostly unvegetated.. Looking NW. Taken: 10/11/2022. Lat/Long: 46.05114293, -123.2856082.





Photo 135. Culvert outflow (WET-15b) downhill of WET-15a. Wetland vegetated by sword fern, skunk cabbage (*Lysichiton americanus*), red elderberry (*Sambucus racemosa*), stinging nettle (*Urtica dioica*), and vine maple. Looking NW. Taken: 10/11/2022. Lat/Long: 46.05069524, -123.2873873.



Photo 136. Vegetated hillside with no bed or banks. sword fern, vine maple, trailing blackberry, etc.. Looking NE. Taken: 10/11/2022. Lat/Long: 46.05190877, -123.2907737.

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Photo 137. Very steep drop off into dense vine maple, sword fern, and red elderberry. No visible wetland, waters, or hydric plants.. Looking SW. Taken: 10/11/2022. Lat/Long: 46.0518783, -123.2910599.



Photo 138. Road above sword fern hillside to the left.. Looking NW. Taken: 10/11/2022. Lat/Long: 46.05215493, -123.2908735.



Photo 139. No bed or banks on hillside.. Looking NE. Taken: 10/11/2022. Lat/Long: 46.0521491, -123.291014.



Photo 140. Culvert outflow hangs off steep hillside.. Looking W. Taken: 10/11/2022. Lat/Long: 46.05205523, -123.2910865.





Photo 141. Culvert flows out into Douglas fir and sword fern forest.. Looking S. Taken: 10/11/2022. Lat/Long: 46.05212166, -123.2937127.



Photo 142. No ditch at culvert outflow.. Looking W. Taken: 10/11/2022. Lat/Long: 46.05222865, -123.2940617.



Photo 143. Wide hillside swale full of Douglas fir saplings, red alder saplings, Canada thistle, and foxglove.. Looking NW. Taken: 10/11/2022. Lat/Long: 46.04732803, -123.295645.



Photo 144. Scrape in large swale feature leading up to natural gas well pad.. Looking S. Taken: 10/11/2022. Lat/Long: 46.04935896, -123.2970543.





Photo 145. Logged hillside.. Looking N. Taken: 10/11/2022. Lat/Long: 46.04965212, -123.2969672.



Photo 146. Hillside outside a fenced natural gas facility vegetated with scotch broom, foxglove, Douglas fir saplings, and upland grasses.. Looking S. Taken: 10/11/2022. Lat/Long: 46.04810779, -123.2993671.



Photo 148. Red alder, scotch broom, Douglas fir, and trailing blackberry.. Looking SE. Taken: 10/11/2022. Lat/Long: 46.05147988, -123.3125659.





Photo 149. Dense young forest.. Looking S. Taken: 10/11/2022. Lat/Long: 46.04950764, -123.3133791.



Photo 150. Older forest with primarily sword fern undergrowth.. Looking NE. Taken: 10/11/2022. Lat/Long: 46.05129546, -123.3112144.



Photo 151. Vine maple, Douglas fir, sword fern, and snowberry.. Looking NE. Taken: 10/11/2022. Lat/Long: 46.05089105, -123.3090388.



Photo 152. Scotch broom, Douglas fir saplings, dandelion (*Taraxacum officinale*), and upland grasses.. Looking NW. Taken: 10/11/2022. Lat/Long: 46.05099308, -123.3063252.





Photo 153. Dry hillside with some scotch broom and red alder.. Looking N. Taken: 10/11/2022. Lat/Long: 46.05152747, -123.3055469.



Photo 154. Logged hillside.. Looking SE. Taken: 10/11/2022. Lat/Long: 46.05371025, -123.3030539.



Photo 155. Saplings, Canada thistle, and red alder shrubs.. Looking SW. Taken: 10/11/2022. Lat/Long: 46.05353949, -123.3044985.



Photo 156. Laydown yard.. Looking NE. Taken: 10/11/2022. Lat/Long: 46.1048256, -123.2443664.





Photo 157. Trailing blackberry, scotch broom, and red alder.. Looking N. Taken: 10/11/2022. Lat/Long: 46.10539594, -123.2425702.



Photo 158. Trailing blackberry thicket.. Looking W. Taken: 10/12/2022. Lat/Long: 46.10560302, -123.243302.



Photo 159. Downed wood and disturbed vegetation.. Looking NW. Taken: 10/12/2022. Lat/Long: 46.10450994, -123.2445906.



Photo 160. Sword fern, big leaf maple, vine maple, and trailing blackberry.. Looking NW. Taken: 10/12/2022. Lat/Long: 46.00048443, -123.2617395.





Photo 161. Vegetation on east side of road includes red alder, cascara, Douglas fir, trailing blackberry, and big leaf maple.. Looking NW. Taken: 10/12/2022. Lat/Long: 46.00062757, -123.261286.



Photo 162. WET-16 boundary between Douglas fir and soft rush.. Looking S. Taken: 10/12/2022. Lat/Long: 46.00735402, -123.2639674.



Photo 163. Scotch broom, red alder, trailing blackberry, Canada thistle, ragwort, Queen Anne's lace (*Daucus carota*), vine maple, bracken fern, and velvetgrass.. Looking SW. Taken: 10/12/2022. Lat/Long: 46.02022766, -123.270563.





Photo 165. Soft rush in laydown yard depression (WET-17).. Looking NE. Taken: 10/12/2022. Lat/Long: 46.10510486, -123.2431617.



Photo 166. Looking towards SP-109a dominated by Oregon ash (*Fraxinus latifolia*) and Douglas' spirea (*Spiraea douglasii*).. Looking N. Taken: 9/26/2023. Lat/Long: 46.0043713, -123.2812729.



Photo 167. Depression where WET-18 is.. Looking SW. Taken: 9/26/2023. Lat/Long: 46.00421352, -123.2805247.



Photo 168. Looking from upland field towards WET-18.. Looking SW. Taken: 9/26/2023. Lat/Long: 46.00428892, -123.2804706.





Photo 169. Looking west showing concave depression of WET-18.. Looking W. Taken: 9/26/2023. Lat/Long: 46.00435173, -123.2795335.



Photo 170. Upland plot up-slope from WET-18.. Looking NW. Taken: 9/26/2023. Lat/Long: 46.00420733, -123.279566.



Photo 171. looking west at WET-18.. Looking W. Taken: 9/26/2023. Lat/Long: 46.00498678, -123.2794316.



Photo 172. Distinct upland vegetation community here.. Looking S. Taken: 9/26/2023. Lat/Long: 46.00493072, -123.2794276.





Photo 173. Looking towards field and forested area.. Looking W. Taken: 9/26/2023. Lat/Long: 46.00398132, -123.2783968.



Photo 174. Looking north up-slope and east of road.. Looking N. Taken: 9/26/2023. Lat/Long: 46.00418182, -123.2784219.



Photo 175. Looking at dense forested understory.. Looking N. Taken: 9/26/2023. Lat/Long: 46.00456687, -123.2783191.



Photo 176. Vegetation boundary of WET-18.. Looking E. Taken: 9/26/2023. Lat/Long: 46.004346, -123.2797172.





Photo 177. Shallow relief of WET-18.. Looking E. Taken: 9/26/2023. Lat/Long: 46.00414753, -123.2813754.



Photo 178. WET-18 at left upland area at right.. Looking E. Taken: 9/26/2023. Lat/Long: 46.00401793, -123.2813086.



Photo 179. Shallow relief used to defined boudary of WET-18.. Looking E. Taken: 9/26/2023. Lat/Long: 46.00414798, -123.281384.



Photo 180. No ditch upland.. Looking E. Taken: 9/26/2023. Lat/Long: 46.00351025, -123.2809658.





Photo 181. Upland vegetation dominates.. Looking E. Taken: 9/26/2023. Lat/Long: 46.00340008, -123.2808578.



Photo 182. No hydric features present, upland vegetation dominates.. Looking E. Taken: 9/26/2023. Lat/Long: 46.00322582, -123.2796298.



Photo 183. General site conditions within survey area, no hydric features present.. Looking S. Taken: 9/26/2023. Lat/Long: 46.02485268, -123.2713157.



Photo 188. General site conditions at SP-112.. Looking N. Taken: 9/26/2023. Lat/Long: 46.0049323, -123.2794205.





Photo 189. General site conditions at WET-19.. Looking NE. Taken: 9/26/2023. Lat/Long: 46.00469046, -123.2782502.



Photo 190. General site conditions at WET-19.. Looking W. Taken: 9/26/2023. Lat/Long: 46.00469998, -123.2782945.



Photo 191. General site conditions at WET-19.. Looking S. Taken: 9/26/2023. Lat/Long: 46.00405565, -123.281284.



Photo 192. Upland forest.. Looking N. Taken: 9/27/2023. Lat/Long: 46.05327278, -123.3055828.





Photo 193. No drainage channel up slope.. Looking E. Taken: 9/27/2023. Lat/Long: 46.05336002, -123.305837.



Photo 194. Looking downslope at ST-05.. Looking W. Taken: 9/27/2023. Lat/Long: 46.05338407, -123.3057983.



Photo 195. Looking upslope, recently cut.. Looking E. Taken: 9/27/2023. Lat/Long: 46.05328922, -123.3079982.



Photo 196. Clear cut with active timber harvest.. Looking N. Taken: 9/27/2023. Lat/Long: 46.05255807, -123.3113875.





Photo 197. No wetland features present.. Looking N. Taken: 9/27/2023. Lat/Long: 46.05181628, -123.3124318.



Photo 198. Upland forest dominated by sword fern, Douglas fir, and red alder.. Looking W. Taken: 9/27/2023. Lat/Long: 46.04748833, -123.3122108.



Photo 199. Upland forest.. Looking E. Taken: 9/27/2023. Lat/Long: 46.046913, -123.3139709.



Photo 200. Upland clear cut area.. Looking E. Taken: 9/27/2023. Lat/Long: 46.05311703, -123.2999496.





Photo 201. Upland clear cut area.. Looking E. Taken: 9/27/2023. Lat/Long: 46.05262212, -123.2995838.



Photo 202. Upland clear cut, convex rise landform.. Looking N. Taken: 9/27/2023. Lat/Long: 46.0514116, -123.2966362.



Photo 203. Developed industrial area, no trespassing.. Looking W. Taken: 9/27/2023. Lat/Long: 46.04692268, -123.2965784.



Photo 204. Upland hillside.. Looking N. Taken: 9/27/2023. Lat/Long: 46.0471491, -123.2965497.





Photo 205. Industrial developed area, no wetland features observed from fenceline.. Looking W. Taken: 9/27/2023. Lat/Long: 46.04709752, -123.2967192.



Photo 206. Upland hillside.. Looking NE. Taken: 9/27/2023. Lat/Long: 46.04782948, -123.2979067.



Photo 207. Upland hillside.. Looking N. Taken: 9/27/2023. Lat/Long: 46.04813893, -123.2984824.



Photo 208. Industrial zone.. Looking S. Taken: 9/27/2023. Lat/Long: 46.04803083, -123.2983116.





Photo 209. Survey area has been clear cut.. Looking E. Taken: 9/27/2023. Lat/Long: 46.05270319, -123.311346.



Photo 210. Unused asphalt lot within survey area.. Looking S. Taken: 9/28/2023. Lat/Long: 46.10925773, -123.2438773.



Photo 211. Mowed field edge, no wetland features present.. Looking S. Taken: 9/28/2023. Lat/Long: 46.10837128, -123.2440586.



Photo 212. Upland forest edge on slope.. Looking N. Taken: 9/28/2023. Lat/Long: 46.10829905, -123.2440967.





Photo 213. Trailing blackberry dominated slope.. Looking E. Taken: 9/28/2023. Lat/Long: 46.10756423, -123.2430697.



Photo 214. Looking down at pond from SP-108a.. Looking E. Taken: 9/28/2023. Lat/Long: 46.10690338, -123.2397875.



Photo 215. Looking at upland slope.. Looking E. Taken: 9/28/2023. Lat/Long: 46.10682662, -123.239873.



Photo 216. Storm water runoff to WET-21.. Looking E. Taken: 9/28/2023. Lat/Long: 46.10725955, -123.2398476.





Photo 217. Upland slope.. Looking SE. Taken: 9/28/2023. Lat/Long: 46.1077305, -123.2399356.



Photo 218. Culvert with sediment from the other side of the road after heavy rain. Ephemeral. Looking E.  
Taken: 12/20/2023. Lat/Long: 46.052154 -123.305456

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## **Attachment J-2: General Authorization (Removal-Fill Permit Application Draft)**



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# Department of State Lands

## General Authorization

### Notification Packet Contents

A. Instructions for completing the General Authorization Notice, and Fee Explanation .....	Page 2
B. General Authorization Eligibility Verification Form and Notice Form for Exemption of Certain Voluntary Habitat Restoration Activities.....	Page 3
C. Resource Gains and Losses Sheet.....	Page 5
D. General Authorizations Supplement Pages	
Certain Minimal Disturbance Activities within ESH .....	Page 6
Piling Placement and Removal within ESH .....	Page 7
Temporary Disturbance to Non-Tidal Wetlands.....	Page 8
Waterway Bank Stabilization .....	Page 9
Certain Transportation-Related Activities .....	Page 10
Removing and Disposing of Sediment Behind Tidegates and within Hydraulically Closed Perimeters.....	Page 11
Waterway Habitat Restoration .....	Page 12
Wetland Ecosystem Restoration.....	Page 13
Notice for Exemption of Certain Voluntary Habitat Restoration Activities ..	Page 15
E. Signature Page .....	Page 16



## INSTRUCTIONS FOR GENERAL AUTHORIZATION NOTICE

- Step 1.** Complete all information on pages 3 and 4 for your project.
- Step 2.** Complete supplement page(s) for each GA that applies to your project. The Resource Gains and Losses Sheet on page 5 is needed when conducting work under the Wetland Ecosystem Restoration, Waterway Habitat Restoration, and/or Temporary Disturbance to Non-Tidal Wetlands General Authorizations.
- Step 3.** Attach all required information listed on each supplement.
- Step 4.** Sign and attach the Signature Page.
- Step 5.** Determine if a fee is necessary for any of the GAs in your project.
- Step 6.** If necessary, submit a \$250 fee and copy of the first page of the notice form for a GA project that requires a fee to:

Dept of State Lands  
775 Summer Street, Suite 100  
Salem, OR 97301-1279

- Step 7.** Submit the entire notification package (Steps 1-4 above) to the DSL office in Salem or Bend, as appropriate for your project location.

### **Project Fee Explanation:**

A \$250 fee is required for a GA listed as requiring a fee and for which the volume for that GA is 50 cubic yards or more of cumulative removal and fill activity. If more than one GA is needed for your project and both require a fee, a one-time flat fee of \$250 is required for a complete notification.

### **Exemptions:**

Please include a completed page 15 with this notification package when certain voluntary habitat restoration activities are included with your wetland ecosystem enhancement or waterway habitat enhancement project. When the activities require agency notice for exemption, you are not required to submit the separate exempt activity notice form.

### **Combining Multiple General Authorizations for your project:**

Any combination of General Authorizations may be used for your project except when the project requires Removal and Disposing of Sediment behind Tidegates or Minimal Disturbance in ESH. These two General Authorizations may not be combined with any other General Authorization and must be noticed for separately.

DSL USE ONLY		DSL No. _____
Issue Date: _____	Expiration Date: _____	
In-Water Work Period: _____ to _____		
Eligible _____ Date	Incomplete _____ Date	Ineligible _____ Date
Activity on state-owned waterway	Proprietary Auth on File: _____	
Access Agreement attached	Further Action Required by Applicant:	
Registration	Lease/License	Other Contact: _____
RC Signature: _____		

**GENERAL AUTHORIZATION ELIGIBILITY VERIFICATION FORM  
AND  
NOTICE FOR EXEMPTION OF CERTAIN  
VOLUNTARY HABITAT RESTORATION ACTIVITIES**

**1. RESPONSIBLE PERSON CONTACT INFORMATION**

Name (print)	Affiliation (company or agency)	
Mailing address or PO Box		
City	State	Zip Code
Phone number	Cell or alternate number	
E-mail	Fax number	

**2. LANDOWNER INFORMATION (if different than responsible party)**

Name (print)		
Mailing address or PO Box		
City	State	Zip Code
Phone number	E-mail	



### 3. PROJECT LOCATION INFORMATION

County:		Nearest City:	
Physical address or description:			
Stream	Name of stream	Tributary of	River mile
Is this <a href="#">designated essential salmon habitat</a> (ESH)?		Yes	No
Wetland	Cowardin Class	HGM	

**LATITUDE AND LONGITUDE** (In Decimal Degrees, example: DD.DDDDDD)

#### LEGAL DESCRIPTION FOR PROJECT

(Check the description that applies and enter information below)

Project with single removal-fill site. Provide the information for the removal-fill site under "Start."

Project with multiple removal-fill sites. Provide the following for the project center point "Start."

Linear project. Provide the following information for the project start point and end point.

<b>Start</b> point Latitude: _____	<b>Start</b> Longitude: _____	see Table 2
Township: _____	Range: _____	Section: _____ ¼ - ¼ Section: _____ Tax lot(s): _____
<b>End</b> point Latitude: _____	<b>End</b> point Longitude: _____	
Township: _____	Range: _____	Section: _____ ¼ - ¼ Section: _____ Tax lot(s): _____

### 4. PROJECT INFORMATION

Anticipated project dates: Start (mo)\_\_\_\_\_ (yr)\_\_\_\_\_ Completion (mo)\_\_\_\_\_ (yr)\_\_\_\_\_

### 5. ACTIVITIES FOR THIS PROJECT. Check all that apply.

Minimal Disturbance within ESH Waters *No Fee*

Piling Placement and Removal in Non-Tidal Waters *No Fee*

Temporary Impacts to Non-tidal Wetlands *Fee May Apply*

Waterway Bank Stabilization *No Fee*

Certain Transportation-Related Activities *Fee May Apply*

Removing and Disposing of Sediment Behind Tidegates and Hydraulically Closed Perimeters *Fee May Apply*

Waterway Habitat Restoration *No Fee*

Wetland Ecosystem Restoration *No Fee*

Notice for Exemption of Certain Voluntary Habitat Restoration Activities *No Fee*  
(Must be combined with another activity listed above, see page 16 for further information.)

# General Authorization for Temporary Disturbance to Non-Tidal Wetlands

OAR 141-089-0700 through 141-089-0715

Project purpose (Check all that apply):

Construction staging

Placement or maintenance of utility lines

Constructing temporary access

Other. Describe: \_\_\_\_\_

Eligibility (All must apply):

Project will consist of 0.2 acres or less of temporary impacts to wetlands

Project will not permanently convert wetlands to upland

Project will not convert forested or shrub wetlands within the project site to different Cowardin Class

Area and Volume: see Table 1

\_\_\_\_\_ acres of \_\_\_\_\_ Cowardin Class \_\_\_\_\_ HGM wetland

Fill \_\_\_\_\_ cubic yards + Removal \_\_\_\_\_ cubic yards = \_\_\_\_\_ cubic yards disturbance

## For Complete Notification you must attach the following:

Current Delineation: A copy of a valid, Department approved delineation map and concurrence letter for Wetland Delineation Number: WD

Fee Due: \$250.00 (If 50 cubic yards or more of total disturbance).

Project Description: Brief description of the project and construction methods to be used. Provide sufficient detail to demonstrate compliance with restoration of ground contours and vegetation, required timing for rectification, post construction reporting, protection of ground surface, prevention of hydraulic piping, and stockpiling of topsoil.

Resource characteristics: Description of the biological and physical characteristics of the wetland or waterway. Include HGM and Cowardin Class and current land use. Indicate if any [wetland type of conservation concern](http://www.oregon.gov/dsl/WW/Documents/wetland_cons_concern.pdf) is within the project area. (For help see: [http://www.oregon.gov/dsl/WW/Documents/wetland\\_cons\\_concern.pdf](http://www.oregon.gov/dsl/WW/Documents/wetland_cons_concern.pdf))

Project location map: Sufficient detail to allow person to drive to the site from the nearest city/town or major highway intersection. Show boundaries of the *entire project*.

Project area photo(s): Photo(s) of existing conditions required for all activity areas.

Plan view drawing(s): Include existing and proposed contours, scale, jurisdictional wetland boundary (if delineated), clear identification of areas proposed for removal or fill, location of cross-section(s). *Do not use "typical" drawings.*

Cross-section drawing(s): Include existing and proposed elevations, horizontal and vertical scale; jurisdictional wetland boundary (if delineated). *Do not use "typical" drawings.*

DSL Use Only:

DSL Determination \_\_\_\_\_ Date \_\_\_\_\_ RC Initial \_\_\_\_\_



## 6. Signature

### By signing below, I understand:

- The information provided herein is, to the best of my knowledge and belief, true, complete, and accurate.
- I am responsible for complying with the requirements and conditions set forth in the applicable administrative rules for General Authorizations and for Voluntary Habitat Restoration activities.
- This approval does not authorize trespass on the lands of others. The responsible party shall obtain all necessary access permits or rights-of-way before entering lands owned by another.
- If this is state-owned submerged or submersible land, there may be additional easements, royalties and/or other requirements by DSL's [Aquatic Resource Management Program](#).
- This approval does not authorize any work that is not in compliance with local zoning or other local, state or federal regulation pertaining to the operations described herein. The responsible party shall obtain necessary approvals and permits before proceeding under this authorization.
- All work done under this authorization must comply with OAR Chapter 340, Standards of Quality for Public Waters of Oregon.
- When listed species are present, the responsible party must comply with the State Endangered Species Act and the Federal Endangered Species Act.
- Violations of the terms and conditions of this authorization are subject to administrative and/or legal action, which may result in revocation of the approval or damages. The responsible party is responsible for the activities of all contractors or other operators involved in work done at the site or under this approval.
- The Department of State Lands may, at any time, by notice to the responsible party, revoke or modify this approval if it determines the project scope or conditions of the General Authorization are insufficient to minimize individual or cumulative environmental effects in accordance with OAR 141-085.
- Employees of the Department of State Lands and all duly authorized representatives of the Director shall be permitted access to the project area at all reasonable times for the purpose of inspecting work performed under this approval.
- In issuing this authorization, the Department of State Lands makes no representation regarding the quality or adequacy of the approved project design, materials, construction, or maintenance except to approve the project's design and materials, as set forth herein, as satisfying the resource protection, scenic, safety, recreation, and public access requirements of ORS Chapter 196 and related administrative rules.
- Responsible person shall defend and hold harmless the State of Oregon, and its officers, agents, and employees from any claim, suit, or action for property damage or personal injury or death arising out of the design, material, construction, or maintenance of the approved improvements.
- When approval from ODFW for Fish Passage is required, written authorization must be received from ODFW prior to ground disturbing activities.
- A permit from the U.S. Army Corps of Engineers may also be required.

<b>Signature</b>		<b>Date</b>	
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**Please mail completed form to DSL at the appropriate regional office for your project location:**

**DSL – West of the Cascades:**

Department of State Lands  
775 Summer Street, Suite 100  
Salem, OR 97301-1279  
Phone: 503-986-5200 Fax: 503-378-4844

**OR**

**DSL - East of the Cascades:**

Department of State Lands  
951 SW Simpson Ave, Suite 104  
Bend, Oregon 97702  
Phone: 541-388-6112 Fax: 541-388-6480

## General Authorization for Temporary Disturbance to Non-Tidal Wetlands

**Project Description:** Northwest Natural (NWN) will be placing new electrical conduit along an existing route where electrical conduit has been placed before. The existing conduit has reached its life span and will be retired in place. The wetland and water boundaries of the entire project have been mapped and provided to DSL for review and concurrence. All other aspects of the project will avoid wetlands and waters. Erosion control fencing will serve two purposes. One is to prevent erosion during construction. The second is to keep construction crews out of avoided wetlands and waters. The line will be replaced within the roadbed of Miller Station Road and then will leave the road to follow the existing line for approximately 0.86 miles and return to the roadbed of Miller Station Road. Temporary construction mats will be used where heavy machinery will be crossing wetlands. An excavator will use a two-foot-wide bucket and will remove soil to a depth of two feet. The topsoil will be stockpiled adjacent to the ditch and after the conduit has been placed and set, the topsoil will be returned. A native seed mix will be placed, and straw will be placed on top to ensure seeds and soil do not wash away with precipitation. The project is crossing two streams but there will be no disturbance within the bed and banks or below the ordinary high-water line. Horizontal directional drilling (HDD) will be used at the stream locations (existing culverts under the road surface). HDD cannot be used outside of the roadbed because of the slope and soil composition.

**Resource Characteristics:** The project location is in heavily managed timber lands. The wetlands the project will be crossing have previously been disturbed with the original placement of the electrical conduit. The path of the line is obvious in aerial photography, and is cut through timber land, which is harvested on typical forest practice intervals managed by Weyerhaeuser.

Wetland Name	HGM (subclass) Wetland Type	Cowardin Class	Length Feet	Temp. Impact Acres	Cubic Yards Removal	Cubic Yards Fill
WET-10	Slope (Headwater)	PEM	4.2	0.001	<1	<1
WET-11	Flats	PEM	104.3	0.005	16	16
WET-12	Slope (Headwater)	PEM	218.5	0.010	33	33
Totals				0.016	50	50



**Project Location Map:** The project is located in Columbia County. The project starts on Miller Station Rd and ends at Miller Station Rd. In addition to the two properties mentioned in the application the project will also cross 06N05W14 tax lot 100. See Figure 1 Location and Figures 2.12, 2.13, and 2.15 for Tax Lots.

**Table 2. Tax Maps - Tax Lots**

<b>Tax Map</b>	<b>Tax Lot Numbers</b>	<b>Owner</b>
6051400	100	Weyerhaeuser Timber Holdings LLC
6050000	2800	Busch Robert Michael & William Carter
6050000	2600	Weyerhaeuser Timber Holdings LLC

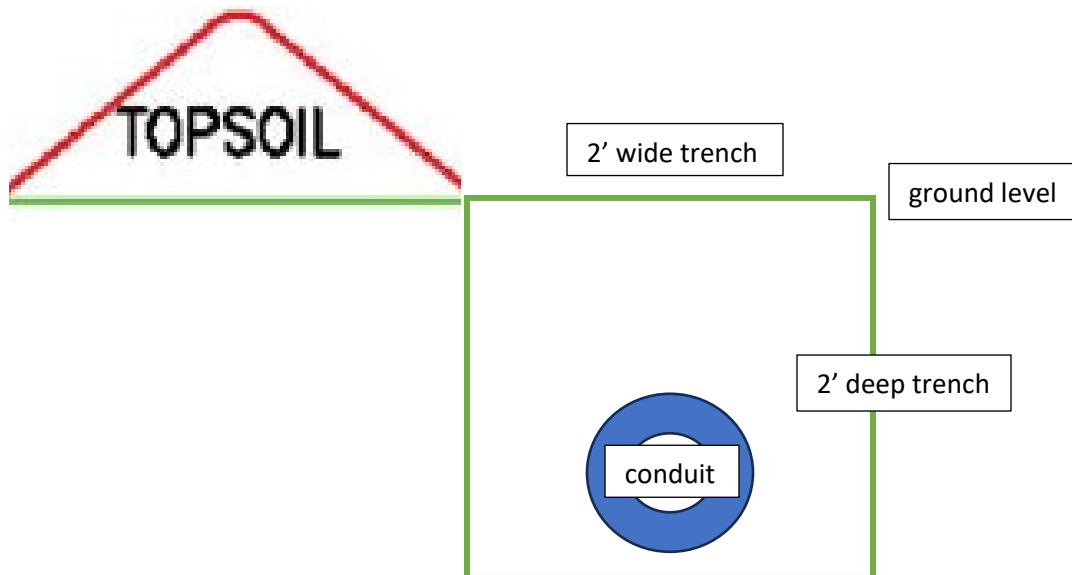
**Project area photos:**

See Photos (from delineation report)

**Plan view drawings:**

See Figure 3-Site Plans A and B

**Cross-section drawings:**



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## Site Location and Tax Lots

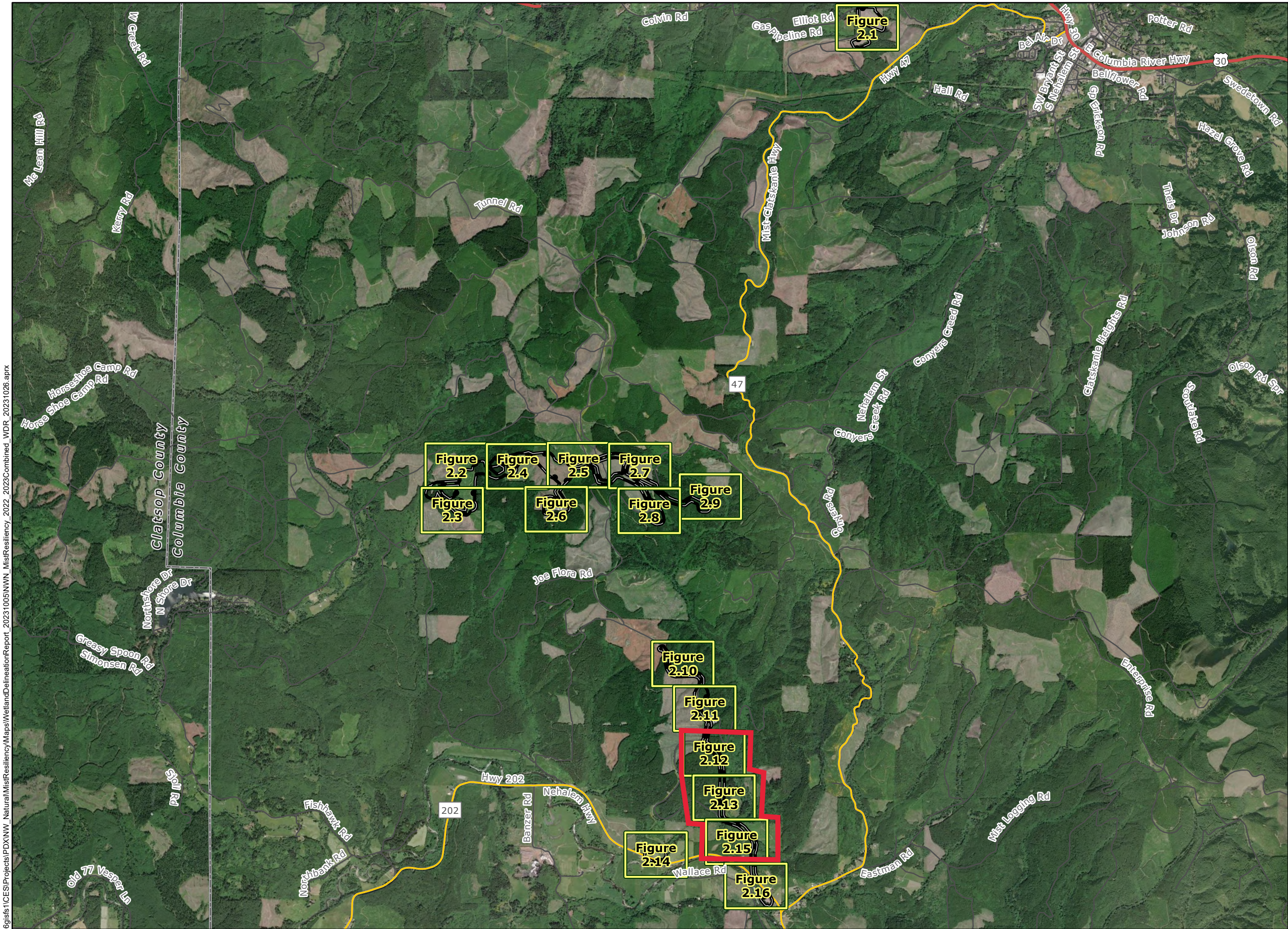
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# North Mist Expansion Project

## Figure 1 Tax Lot Index Map

COLUMBIA COUNTY, OR

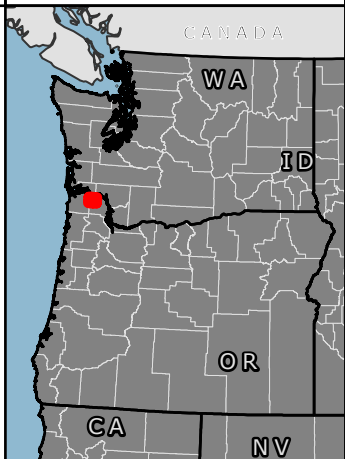
- Study Area
- Map Grid
- US Highway
- State Highway
- Local Roads
- County Boundary



Data Sources

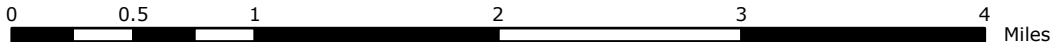
NWN-Project Infrastructure; Tiger-Roads;  
ESRI-Aerial; Columbia County-Taxlots

Reference Map



1:50,000

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION



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# North Mist Expansion Project

## Figure 2.12 Tax Lot Detail Map

COLUMBIA COUNTY, OR

- Study Area
- Taxlot Boundary
- Section
- Township
- Local Roads
- County Boundary

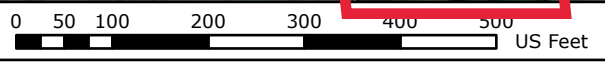


Data Sources	Reference Map
NWN-Project Infrastructure: Tiger-Roads; ESRI-Aerial; Columbia County-Taxlots	



1:2,400

WGS 1984 UTM Zone 10N



NOT FOR CONSTRUCTION







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**North Mist  
Expansion Project**

**Figure 2.15  
Tax Lot Detail Map**

COLUMBIA COUNTY, OR

- Study Area
- Taxlot Boundary
- Section
- Township
- State Highway
- Local Roads
- County Boundary



Data Sources	Reference Map
NWN-Project Infrastructure: Tiger-Roads; ESRI-Aerial; Columbia County-Taxlots	



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## Project Area Photos

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Photo 45. General site conditions of WET-10.. Looking NW. Taken: 10/6/2022. Lat/Long: 46.01414056, -123.2679911.



Photo 46. General site conditions of ST-02.. Looking SE. Taken: 10/7/2022. Lat/Long: 46.01402106, -123.2677977.



Photo 55. General site conditions of WET-09.. Looking S. Taken: 10/6/2022. Lat/Long: 46.01487445, -123.2678965.



Photo 56. Looking uphill towards WET-09 and WET-10.. Looking N. Taken: 10/7/2022. Lat/Long: 46.01310947, -123.2680556.





Photo 57. General site conditions of WET-11.. Looking N. Taken: 10/10/2022. Lat/Long: 46.00938111, -123.268004.



Photo 58. General site conditions of WET-11.. Looking S. Taken: 10/10/2022. Lat/Long: 46.00962635, -123.267972.



Photo 59. Looking downhill along survey corridor.. Looking SE. Taken: 10/10/2022. Lat/Long: 46.00879983, -123.2679932.



Photo 60. General site conditions of WET-12.. Looking SE. Taken: 10/10/2022. Lat/Long: 46.00833994, -123.2678142.





Photo 61. Looking uphill along survey corridor.. Looking NW. Taken: 10/10/2022. Lat/Long: 46.0083655, -123.2677468.



Photo 62. General site conditions of WET-12.. Looking NW. Taken: 10/10/2022. Lat/Long: 46.00814732, -123.2671607.



Photo 44. Looking down survey corridor.. Looking S. Taken: 10/6/2022. Lat/Long: 46.01593472, -123.2685425.



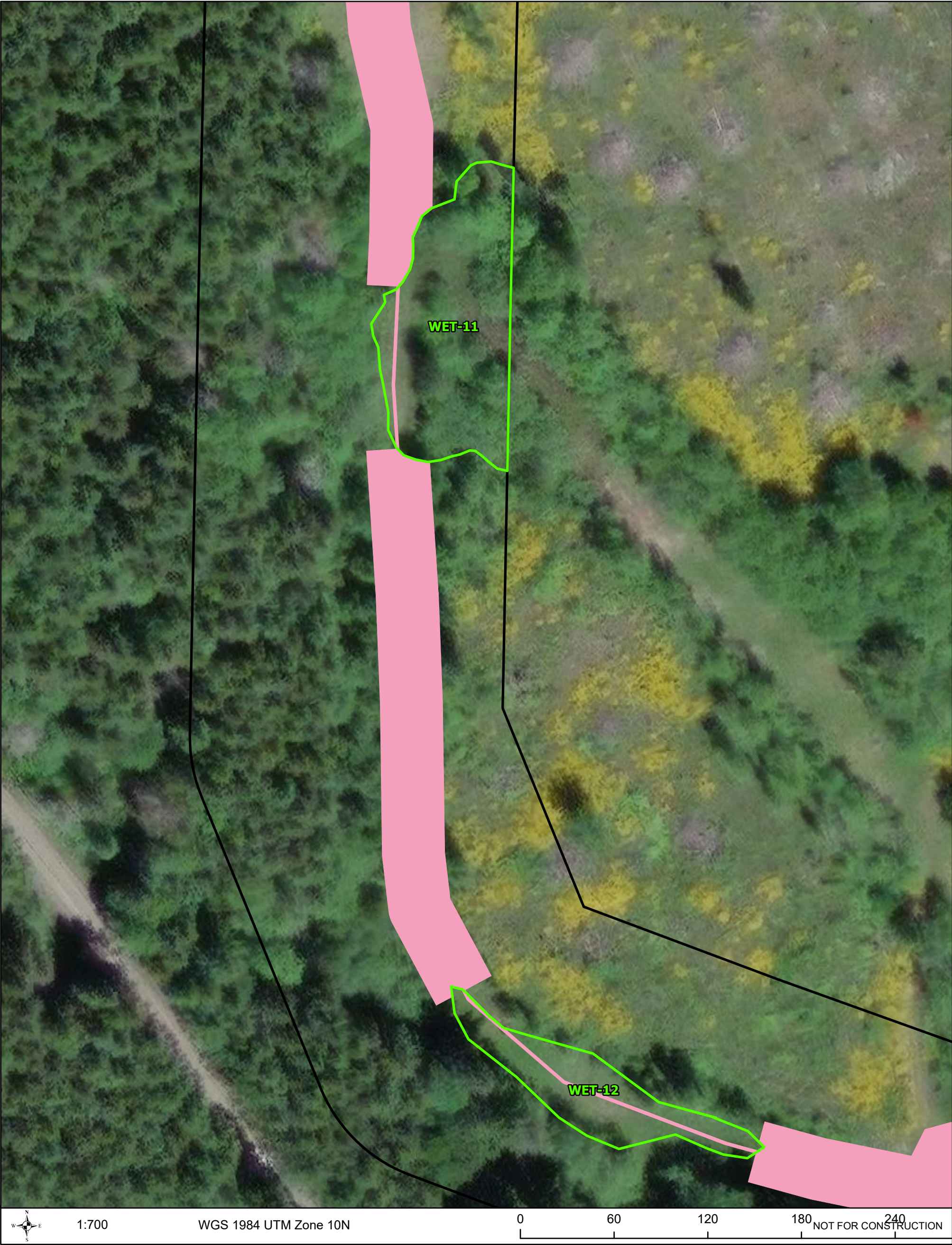
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## Figure 3 Site Plans

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1:700

WGS 1984 UTM Zone 10N

0

60

120

180

240

NOT FOR CONSTRUCTION

Mist Resiliency Project

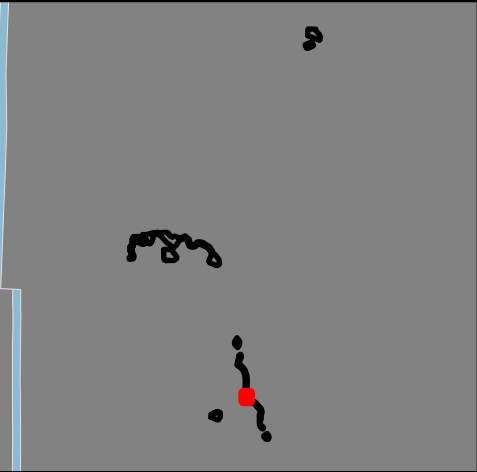
- Site Boundary
- Field Delineated Wetland
- Impacts
- Temporary Impact

Figure 3 Site Plan A

COLUMBIA COUNTY, OREGON



Reference Map





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1:200

WGS 1984 UTM Zone 10N

0 5 10 15 20 25 US Feet

NOT FOR CONSTRUCTION

**Mist Resiliency Project**

- Site Boundary
- Field Delineated Stream
- Field Delineated Wetland
- Impacts
- Temporary Impact

**Figure 3 Site Plan B**

COLUMBIA COUNTY, OREGON

**Reference Map**

