



Joint Permit Application

This is a joint application, and must be sent to both agencies, who administer separate permit programs. Alternative forms of permit applications may be acceptable; contact the Corps and DSL for more information.

11 June 2020

Date Stamp

	U.S. Army Corps of Engineers Portland District		Oregon Department of State Lands
Corps Action ID Number NWP-2020-248		DSL Number	
(1) TYPE OF PERMIT(S) IF KNOWN (check all that apply)			
Corps: <input type="checkbox"/> Individual <input checked="" type="checkbox"/> Nationwide No.: <u> 29 </u> <input type="checkbox"/> Regional General _____ <input type="checkbox"/> Other _____			
DSL: <input type="checkbox"/> Individual <input checked="" type="checkbox"/> General Permit <input type="checkbox"/> No State Permit Required <input type="checkbox"/> Waiver			
(2) APPLICANT AND LANDOWNER CONTACT INFORMATION			
	Applicant	Property Owner (if different)	Authorized Agent (if applicable) <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Contractor
Name (Required)	David Haun		CHRIS MORRIS
Business Name			BRANCH ENGINEERING
Mailing Address 1	P.O. Box 758		310 5 TH ST
City, State, Zip	Lincoln City, OR 97367		SPRINGFIELD, OR 97477
Business Phone			541 746-0637
Cell Phone	541-921-5477		
Fax			
Email	haun.dave@gmail.com		chrism@branchengineering.com
(3) PROJECT INFORMATION			
A. Provide the project location.			
Project Name: Lot 10100 Development		Latitude & Longitude* 44.988959N, -124.009780W	
Project Address / Location CITY VIEW STREET	City (nearest) EUGENE	near Lincoln City	County LANE Lincoln
Township	Range	Section	Quarter / Quarter
17S 7S	11W	03	DC
			Tax Lot
			10100
Brief Directions to the Site: South on HWY 101 to NW 30 th St, Right on NW 30 th to NW Mast Ave, Right on NW Mast Ave to dead end. Site on left			
B. What types of waterbodies or wetlands are present in your project area? (Check all that apply.)			
<input type="checkbox"/> River / Stream	<input checked="" type="checkbox"/> Non-Tidal Wetland	<input type="checkbox"/> Lake / Reservoir / Pond	
<input type="checkbox"/> Estuary or Tidal Wetland	<input type="checkbox"/> Other	<input type="checkbox"/> Pacific Ocean	
Waterbody or Wetland Name** Wetland A	River Mile	6th Field HUC Name Devil's Lake	6th Field HUC (12 digits) 171002040804

* In decimal format (e.g., 44.9399, -123.0283)

** If there is no official name for the wetland or waterbody, create a unique name (such as "Wetland 1" or "Tributary A").

C. Indicate the project category. (Check all that apply.)		
<input type="checkbox"/> Commercial Development	<input type="checkbox"/> Industrial Development	<input checked="" type="checkbox"/> Residential Development
<input type="checkbox"/> Institutional Development	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Recreational
<input type="checkbox"/> Transportation	<input type="checkbox"/> Restoration	<input type="checkbox"/> Bridge
<input type="checkbox"/> Dredging	<input type="checkbox"/> Utility lines	<input type="checkbox"/> Survey or Sampling
<input type="checkbox"/> In- or Over-Water Structure	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Other:

(4) PROJECT DESCRIPTION

A. Summarize the overall project including work in areas both in and outside of waters or wetlands.

The project consists of a single-family residential home with attached two-car garage, parking pad and associated stormwater and utilities on a 4,000 square-foot lot described as Tax Map 17-11-03-DC and Tax Lot 10100.

B. Describe work within waters and wetlands.

The work within Wetland A will consist of removal of approximately 2' of organics and clayey soils to get down to suitable sandy soils. There will be approximately 6" of compacted crushed gravel fill placed over the sandy native subgrade. This crushed gravel will serve as the base for the home's concrete structural foundation and garage concrete slab. There will also be trenching for utilities and stormwater as likely the need for a stormwater detention tank to detain stormwater runoff to existing rates.

C. Construction Methods. Describe how the removal and/or fill activities will be accomplished to minimize impacts to waters and wetlands.

Standard erosion control BMPs will be used to prevent sediment and other construction materials from entering the adjacent drainage ditch or onto adjacent lots. Furthermore, the construction of the home and utilities will be completed during the summer months. During which, the flow of water through the drainage ditch is either minimal or non-existent. Due to this, the actual impact to downstream waters will be minimal.

(4) PROJECT DESCRIPTION (continued)

D. Describe source of fill material and disposal locations if known

Approximately 190 cubic yards will have to be removed from the lot in order to accommodate the new home addition. The contractor will determine the best location for disposal. The fill will consist of crushed rock beneath the structural foundation and garage slab. This fill will be locally sourced from an approved vendor.

E. Construction timeline.

What is the estimated project start date? June-September 2020

What is the estimated project completion date? September-October 2020

Is any of the work underway or already complete? Yes No

If yes, please describe.

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F. Removal Volumes and Dimensions (if more than 7 impact sites, include a summary table as an attachment)

Wetland / Waterbody Name *	Removal Dimensions					Duration of Impact**	Material***
	Length (ft.)	Width (ft.)	Depth (ft.)	Area (sq.ft. or ac.)	Volume (c.y.)		
Wetland A			2	2075 sq ft	190	Permanent	Native soil

G. Total Removal Volumes and Dimensions

Total Removal to Wetlands and Other Waters	Length (ft.)	Area (sq. ft or ac.)	Volume (c.y.)
Total Removal to Wetlands			190
Total Removal Below Ordinary High Water			0
Total Removal Below Highest Measured Tide			0
Total Removal Below High Tide Line			0
Total Removal Below Mean High Water Tidal Elevation			0

H. Fill Volumes and Dimensions (if more than 7 impact sites, include a summary table as an attachment)

Wetland / Waterbody Name*	Fill Dimensions					Duration of Impact**	Material***
	Length (ft.)	Width (ft.)	Depth (ft.)	Area (sq. ft. or ac.)	Volume (c.y.)		
Wetland A			6"	1807 sq ft	33.5	Permanent	Crushed rock

(4) PROJECT DESCRIPTION (CONTINUED)

I. Total Fill Volumes and Dimensions

Total Fill to Wetlands and Other Waters	Length (ft.)	Area (sq. ft or ac.)	Volume (c.y.)
Total Fill to Wetlands			33.5
Total Fill Below Ordinary High Water			0
Total Fill Below Highest Measured Tide			0
Total Fill Below High Tide Line			0
Total Fill Below Mean High Water Tidal Elevation			0

*If there is no official name for the wetland or waterbody, create a unique name (such as "Wetland 1" or "Tributary A").
 **Indicate the days, months or years the fill or removal will remain. Enter "permanent" if applicable. For DSL, permanent removal or fill is defined as being in place for 24 months or longer.
 *** Example: soil, gravel, wood, concrete, pilings, rock etc.

(5) PROJECT PURPOSE AND NEED

Provide a statement of the purpose and need for the overall project.

The purpose of the project is to construct a single-family residential home with City of Lincoln City.

The need for the removal-fill to wetlands is to provide additional housing availability within the city limits of Lincoln City, OR. The demand for housing in Oregon continues to grow and available affordable home inventories are at all-time lows.

The city of Lincoln City's stated housing goals are to encourage residential development within the city limits while minimizing sprawl and preserving timber and agricultural lands in the surrounding area. Because this site is located in the city and zoned for residential homes, this development will help the city achieve its goals of a primary focus on infill development. This project is designed to focus on entry level homes buyers and will be priced as an affordable option for the Lincoln City market. This market has seen double digit price appreciation in three of the last four years which has forced many less affluent buyers out of the market. This project will provide a much-needed option for these price sensitive buyers.

(6) DESCRIPTION OF RESOURCES IN PROJECT AREA

A. Describe the existing physical and biological characteristics of each wetland or waterbody. Reference the wetland and waters delineation report if one is available. Include the list of items provided in the instructions.

- The wetland is freshwater
- The wetland Cowardin Class is PEM
- The Hydrogeomorphic (HGM) Class is Slope
- The wetlands main source of hydrology is from direct precipitation as well as from residential areas up gradient.
- The direction of flow is westerly
- The dominant herbaceous species is Poa pratensis
- The dominant shrub species is Rubus armenicus
- The dominant tree species is Alnus rubra
- A functional assessment of the wetland was completed using ORWAP version 3.1. The scores are shown below and the worksheets are attached.
- Vernal pools, bogs, fens, mature forested wetland, seasonal mudflats, or native wet prairies are not present in or near the project area.
- A delineation report was completed for tax lot 10100 the single-family residential home will be located and is attached.
- Existing use by wildlife is limited due to the wetland and tax lot being surrounded by streets and residential homes.
- There are no state or federally listed species

Specific Functions or Values: For 0.059-acre Wetland A	Function Score	Function Rating	Rating Break Proximity	Values Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	10.00	Higher		2.50	Lower	LM
Sediment Retention & Stabilization (SR)	3.73	Moderate	LM	7.76	Higher	
Phosphorus Retention (PR)	10.00	Higher		4.13	Moderate	
Nitrate Removal & Retention (NR)	10.00	Higher		3.28	Lower	LM
Anadromous Fish Habitat (FA)	0.00	Lower		0.00	Lower	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	4.56	Moderate	LM	2.78	Lower	
Waterbird Nesting Habitat (WBN)	3.78	Moderate		3.67	Moderate	

Waterbird Feeding Habitat (WBF)	4.03	Moderate		5.00	Moderate	
Aquatic Invertebrate Habitat (INV)	3.32	Lower		10.00	Higher	
Songbird, Raptor, Mammal Habitat (SBM)	2.17	Lower		5.67	Moderate	
Water Cooling (WC)	2.50	Moderate	LM	0.00	Lower	
Native Plant Diversity (PD)	4.39	Moderate		6.67	Moderate	MH
Pollinator Habitat (POL)	3.71	Moderate		6.70	Higher	
Organic Nutrient Export (OE)	0.00	Lower				
Carbon Sequestration (CS)	2.25	Lower				
Public Use & Recognition (PU)				3.74	Lower	LM

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	4.12	Moderate	MH
Wetland Ecological Condition (EC)	4.83	Moderate	MH
Wetland Stressors (STR)	8.22	Higher	MH

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Higher		Lower	LM
Water Quality Support (SR, PR, or NR)	Phosphorus Retention (PR)	Higher		Moderate	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Lower		Lower	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Moderate		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Pollinator Habitat (POL)	Moderate		Higher	

B. Describe the existing navigation, fishing and recreational use of the waterbody or wetland.

The wetland does not have any open standing water and is on private property. Therefore, none of these uses are possible.

Describe project-specific criteria necessary to achieve the project purpose. Describe alternative sites and project designs that were considered to avoid or minimize impacts to the waterbody or wetland.*

Alternative 1 – No Development

With this alternative, the need for additional homes within the city of Lincoln City would not be met.

Alternative 2 – Reduce Footprint and Impacts

With this alternative, the proposed home's footprint is already small on a very small residential tax lot. There is no room for reduction to impacted wetland area.

Alternative 3 (Preferred) – Develop the lot with a single-family residential home

This alternative is the most practicable design that will meet the projects purpose and needs as well as the meeting the communities needs for residential development without encouraging sprawl.

Alternative #3 is the most practicable alternative

(8) ADDITIONAL INFORMATION

Are there state or federally listed species on the project site?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
Is the project site within designated or proposed critical habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
Is the project site within a national Wild and Scenic River ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
Is the project site within a State Scenic Waterway ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
Is the project site within the 100-year floodplain ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown

If yes to any of the above, explain in Block 6 and describe measures to minimize adverse effects to these resources in Block 7.

Is the project site within the Territorial Sea Plan (TSP) Area ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
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If yes, attach TSP review as a separate document for DSL.

Is the project site within a designated Marine Reserve ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
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If yes, certain additional DSL restrictions will apply.

Will the overall project involve ground disturbance of one acre or more?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
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If yes, you may need a 1200-C permit from the Oregon Department of Environmental Quality (DEQ).

Is the fill or dredged material a carrier of contaminants from on-site or off- site spills?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
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Has the fill or dredged material been physically and/or chemically tested?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
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If yes, explain in Block 6 and provide references to any physical/chemical testing report(s).

Has a cultural resource (archaeological) survey been performed on the project area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unknown
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If yes, provide a copy of the survey with this application to the Corps only. Do not describe any resources in this document.

Will the project result in new impervious surfaces or the redevelopment of existing surfaces? Yes No

If yes, the Applicant must submit a post-construction stormwater management plan to DEQ's 401 WQC program for review and approval, see <http://www.deq.state.or.us/wq/sec401cert/docs/stormwaterGuidelines.pdf>

Identify any other federal agency that is funding, authorizing or implementing the project.

* Not required by the Corps for a complete application, but is necessary for individual permits before a permit decision can be rendered.

Agency Name	Contact Name	Phone Number	Most Recent Date of Contact
<p>List other certificates or approvals/denials required or received from other federal, state or local agencies for work described in this application. For example, certain activities that require a Corps permit also require 401 Water Quality Certification (WQC) from Oregon Department of Environmental Quality (DEQ). For DEQ, please note that all projects that qualify for a Nationwide 401 WQC will be invoiced a fee. Projects that do not qualify for the Nationwide certification will be invoiced based on project complexity. See http://www.oregon.gov/deq/wq/wqpermits/Pages/Section-401-Fees.aspx</p>			
Agency	Certificate/ approval / denial description	Date Applied	
<p>Other DSL and/or Corps Actions Associated with this Site (Check all that apply.)</p> <p><input type="checkbox"/> Work proposed on or over lands owned by or leased from the Corps (may require authorization pursuant to 33 USC 408).</p> <p><input type="checkbox"/> State owned waterway DSL Waterway Lease # _____</p> <p><input type="checkbox"/> Other Corps or DSL Permits Corps # _____ DSL # 2019-0635</p> <p><input type="checkbox"/> Violation for Unauthorized Activity Corps # _____ DSL # _____</p> <p><input checked="" type="checkbox"/> Wetland and Waters Delineation Corps # _____ DSL # 2019-0635</p> <p>Submit the entire delineation report to the Corps; submit only the concurrence letter (if complete) and approved maps to DSL. If not previously submitted to DSL, send under a separate cover letter</p>			
<p>(9) IMPACTS, RESTORATION/REHABILITATION, AND COMPENSATORY MITIGATION</p>			
<p>A. Describe unavoidable environmental impacts that are likely to result from the proposed project. Include permanent, temporary, direct, and indirect impacts.</p> <p>Unavoidable impacts will be the permanent loss of 0.059 acres of wetlands due to the construction of a single-family residential home, attached garage, parking slab and associated utilities.</p>			
<p>B. For temporary removal or fill or disturbance of vegetation in waterbodies, wetlands or riparian (i.e., streamside) areas, discuss how the site will be restored after construction to include the timeline for restoration.</p> <p>There are no temporary impacts.</p>			

Compensatory Mitigation			
C. Proposed mitigation approach. Check all that apply:			
<input type="checkbox"/> Permittee-responsible Onsite Mitigation	<input type="checkbox"/> Permittee-responsible Offsite mitigation	<input checked="" type="checkbox"/> Mitigation Bank or in-lieu fee program	<input type="checkbox"/> Payment to Provide (not approved for use with Corps permits)
D. Provide a brief description of mitigation approach and the rationale for choosing that approach. If you believe mitigation should not be required, explain why.			
The proposed project will permanently impact 0.059 acres of jurisdictional waters			
Mitigation will be through In-Lieu of Fee Site. Tamara Quays or Pixieland ILF sites.			
Mitigation Bank / In-Lieu Fee Information:			
Name of mitigation bank or in-lieu fee project: Tamara Quays or Pixieland			
Type of credits to be purchased: ILF			
If you are proposing permittee-responsible mitigation, have you prepared a compensatory mitigation plan?			
<input type="checkbox"/> Yes. Submit the plan with this application and complete the remainder of this section.			
<input type="checkbox"/> No. A mitigation plan will need to be submitted (for DSL, this plan is required for a complete application).			
Mitigation Location Information (Fill out only if permittee-responsible mitigation is proposed)			
Mitigation Site Name/Legal Description	Mitigation Site Address	Tax Lot #	
County	City	Latitude & Longitude (in DD.DDDD format)	
Township	Range	Section	Quarter/Quarter

(10) ADJACENT PROPERTY OWNERS FOR PROJECT AND MITIGATION SITE		
<input checked="" type="checkbox"/> Pre-printed mailing labels of adjacent property owners attached	Project Site Adjacent Property Owners	Mitigation Site Adjacent Property Owners

Contact Name
Address 1
Address 2
City, ST ZIP Code

Contact Name
Address 1
Address 2
City, ST ZIP Code


Contact Name
Address 1
Address 2
City, ST ZIP Code

**(11) CITY/COUNTY PLANNING DEPARTMENT LAND USE AFFIDAVIT
(TO BE COMPLETED BY LOCAL PLANNING OFFICIAL)**

I have reviewed the project described in this application and have determined that:

- This project is not regulated by the comprehensive plan and land use regulations
- This project is consistent with the comprehensive plan and land use regulations
- This project is consistent with the comprehensive plan and land use regulations with the following:
 - Conditional Use Approval
 - Development Permit
 - Other Permit (explain in comment section below)
- This project is not currently consistent with the comprehensive plan and land use regulations. To be consistent requires:
 - Plan Amendment
 - Zone Change
 - Other Approval or Review (explain in comment section below)

An application or variance request has has not been filed for approvals required above


Local planning official name (print) <i>Anne Marie Skinner</i>	Title <i>Director</i>	City / County <i>City of Lincoln City</i>
Signature 		Date <i>December 6, 2019</i>
Comments: <p style="color: red; font-size: small;">The subject site contains a wetland area. However, a review of the Comprehensive Plan Maps for Significant Wetlands shows that the subject site's wetland area is NOT adopted as a Significant Wetland on the Comprehensive Plan Map. Per LCMC 17.46.040 all development is excluded from the natural resource overlay zone. However, per LCMC 17.46.030 the natural resource overlay zone consists of the land identified in the city comprehensive plan as significant natural resource areas, including significant riparian areas, significant wetlands, and significant wildlife areas. The comprehensive plan does not identify the subject site as having any significant natural resource areas; therefore, the subject site has no natural resource overlay zone.</p>		

(12) COASTAL ZONE CERTIFICATION

If the proposed activity described in your permit application is within the [Oregon coastal zone](#), the following certification is required before your application can be processed. The signed statement will be forwarded to the Oregon Department of Land Conservation and Development (DLCD) for its concurrence or objection. For additional information on the Oregon Coastal Zone Management Program and consistency reviews of federally permitted projects, contact DLCD at 635 Capitol Street NE, Suite 150, Salem, Oregon 97301 or call 503-373-0050 or click [here](#).

CERTIFICATION STATEMENT

I certify that, to the best of my knowledge and belief, the proposed activity described in this application complies with the approved Oregon Coastal Zone Management Program and will be completed in a manner consistent with the program.

Print /Type Applicant Name <i>David Haun</i>	Title <i>Owner</i>
Applicant Signature <i>David V. Haun</i>  <small>Verified by PDFfiller 06/16/2020</small>	Date <i>06/06/2020</i>

**(11) CITY/COUNTY PLANNING DEPARTMENT LAND USE AFFIDAVIT
(TO BE COMPLETED BY LOCAL PLANNING OFFICIAL)**


I have reviewed the project described in this application and have determined that:

- This project is not regulated by the comprehensive plan and land use regulations
- This project is consistent with the comprehensive plan and land use regulations
- This project is consistent with the comprehensive plan and land use regulations with the following:
 - Conditional Use Approval
 - Development Permit
 - Other Permit (explain in comment section below)

This project is not currently consistent with the comprehensive plan and land use regulations. To be consistent requires:

- Plan Amendment
- Zone Change
- Other Approval or Review (explain in comment section below)

An application or variance request has has not been filed for approvals required above

Local planning official name (print) <i>Anne Marie Skinner</i>	Title <i>Director</i>	City / County <i>Lincoln City</i>
Signature 	Date <i>Dec. 4, 2019</i>	
Comments: <i>Tax lot 10100 is completely identified as a wetland on Lincoln City's Natural Resource Map. All development is excluded. An application will need to be submitted for a Natural Resource Development Variance. See attached code sections.</i>		

(12) COASTAL ZONE CERTIFICATION

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CERTIFICATION STATEMENT

I certify that, to the best of my knowledge and belief, the proposed activity described in this application complies with the approved Oregon Coastal Zone Management Program and will be completed in a manner consistent with the program.

Print /Type Applicant Name <i>David Haun</i>	Title <i>Owner</i>
Applicant Signature	Date

(13) SIGNATURES

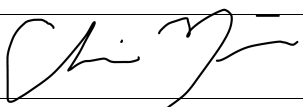
Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities. By signing this application I consent to allow Corps or DSL staff to enter into the above-described property to inspect the project location and to determine compliance with an authorization, if granted. I hereby authorize the person identified in the authorized agent block below to act in my behalf as my agent in the processing of this application and to furnish supplemental information in support of this permit application. I understand that the granting of other permits by local, county, state or federal agencies does not release me from the requirement of obtaining the permits requested before commencing the project. I understand that payment of the required state processing fee does not guarantee permit issuance. To be considered complete, the fee must accompany the application to DSL. The fee is not required for submittal of an application to the Corps.

Fee Amount Enclosed	\$
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Applicant Signature (required) must match the name in Block 2

Print Name David Haun	Title Owner
Signature  	Date 6/10/20

Authorized Agent Signature

Print Name Christopher Morris	Title Consultant
Signature 	Date 6/10/20

Landowner Signature(s)*

Landowner of the Project Site (if different from applicant)

Print Name	Title
Signature	Date

Landowner of the Mitigation Site (if different from applicant)

Print Name	Title
Signature	Date

Department of State Lands, Property Manager (to be completed by DSL)

If the project is located on [state-owned submerged and submersible lands](#), DSL staff will obtain a signature from the Land Management Division of DSL. A signature by DSL for activities proposed on state-owned submerged/submersible lands only grants the applicant consent to apply for a removal-fill permit. A signature for activities on state-owned submerged and submersible lands grants no other authority, express or implied and a separate proprietary authorization may be required.

Print Name	Title
Signature	Date

* Not required by the Corps.

(14) ATTACHMENTS

- Drawings
 - Location map with roads identified
 - U.S.G.S topographic map
 - Tax lot map
 - Site plan(s)
 - Cross section drawing(s)
 - Recent aerial photo
 - Project photos
 - Erosion and Pollution Control Plan(s), if applicable
 - DSL/Corps Wetland Concurrence letter and map, if approved and applicable
- Pre-printed labels for adjacent property owners (Required if more than 5)
- [Incumbency Certificate](#) if applicant is a partnership or corporation
- Restoration plan or rehabilitation plan for temporary impacts
- Mitigation plan
- Wetland functional assessment and/or stream functional assessment
- Alternatives analysis
- Biological assessment (if requested by Corps project manager during pre-application coordination.)
- Stormwater management plan (may be required by the Corps or DEQ)
- Other:

<input checked="" type="checkbox"/>	Delineation Report
<input type="checkbox"/>	

Send Completed form to:

U.S. Army Corps of Engineers

ATTN: CENWP-OD-GP
 PO Box 2946
 Portland, OR 97208-2946
 Phone: 503-808-4373
portlandpermits@usace.army.mil

OR

U.S. Army Corps of Engineers

ATTN: CENWP-OD-GE
 211 E. 7th AVE, Suite 105
 Eugene, OR 97401-2722
 Phone: 541-465-6868
portlandpermits@usace.army.mil

Counties:

Baker, Clackamas, Clatsop, Columbia, Gilliam, Grant, Hood River, Lincoln, Malheur, Morrow, Multnomah, Polk, Sherman, Tillamook, Umatilla, Union, Wallowa, Wasco, Washington, Wheeler, Yamhill

Counties:

Benton, Coos, Crook, Curry, Deschutes, Douglas, Jackson, Jefferson, Josephine, Harney, Klamath, Lake, Lane, Linn, Marion

Send Completed form to:

DSL - West of the Cascades:

Department of State Lands
 775 Summer Street NE, Suite 100
 Salem, OR 97301-1279
 Phone: 503-986-5200

OR

DSL - East of the Cascades:

Department of State Lands
 1645 NE Forbes Road, Suite 112
 Bend, Oregon 97701
 Phone: 541-388-6112

Send all Fees to:

Department of State Lands
 775 Summer Street NE, Suite 100
 Salem, OR 97301-1279

Pay by Credit Card Online:

<https://apps.oregon.gov/dsl/EPS/>

ORWAP Version 3.1. Cover Page: Basic Description of Assessment

Site Name:	Tax Lot 700
Investigator Name:	Chris Morris
Date of Field Assessment:	10/31/2019
County:	Lincoln
Nearest Town:	Lincoln City
Latitude (decimal degrees):	44.044849
Longitude (decimal degrees):	-122.919170
TRS, quarter/quarter section and tax lot(s):	17-02-34-34 Lot 700
Approximate size of the Assessment Area (AA, in acres):	0.055
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	1%
If delineated, DSL file number (WD #) if known:	WD2019-0612
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	F
Soil Unit Mapped in Most of the AA:	2224A-Courtney gravelly silty clay loam
If tidal, the tidal phase during most of visit:	N/A
What percent (approximate) of the wetland were you able to visit?	100% onsite
What percent (approximate) of the AA were you able to visit?	3
Have you attended an ORWAP training session? If so, indicate approximate month & year.	No
How many wetlands have you assessed previously using ORWAP (approximate)?	6

Comments about the site or this ORWAP assessment (attach extra page if desired):

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Date:		Name:		Site:			
Office Data Form OF ORWAP V 3.1		Conduct an assessment <u>only after reading the accompanying Manual and explanations in column E below</u> . Answering many of the following questions requires viewing aerial imagery and maps, covering an area up to within 2 miles of the AA. For each affirmative answer, change the 0 in the "Data" column to a "1" . Answer all items except where directed to skip to others. Questions whose cells in "Data" column have a "W" MUST be answered for the ENTIRE wetland and bordering waters.		For a list of functions to which each question pertains, see bracketed codes in column E. Codes for functions and their benefits are: WS= Water Storage, WC= Water Cooling, SR= Sediment Retention, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Aquatic Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibians & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PD= Native Plant Diversity PU= Public Use & Recognition, EC= Ecological Condition, Sens= Sensitivity, STR= Stressors.			For guidance and detailed descriptions of how Excel calculates the numbers in the Scores worksheet, see the Technical Supplement and Appendix B of the Manual. For a documented rationale for each indicator, open each of the worksheet tabs at the bottom (one for each function or value) and see column H.
#	Indicators	Condition Choices	Data	Explanations, Definitions (Column E)	Cell Name	Comments	
OF1	Distance to Extensive Perennial Cover (DistPerCov)	The distance from the <u>AA edge</u> to the edge of the closest patch or corridor of perennial cover (see definition in <u>column E</u>) larger than 100 acres is:		Corridor - is simply an elongated patch of perennial cover that is not narrower than 150 ft at any point.			
		<100 ft.	0	Perennial cover - is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground is disturbed less than annually, such as hayfields, lightly grazed pastures, timber harvest areas, and rangeland. <u>It does not</u> include water, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. [AM, WBN, SBM, PD, POL, Sens]			
		100 to <300 ft.	0				
		300 to <1000 ft.	1				
		1000 ft. to <0.5 mile.	0				
		0.5 mile to 2 miles.	0				
> 2 miles.	0						
OF2	Distance to Tidal Waters (DistTidal)	The distance from the <u>AA edge</u> to the closest body of tidal water is:		Tidal water - If unclear whether a water body is tidal, check the <u>ORWAP Map Viewer's</u> Headtide layer (under Water Source & Quality), or check with local sources. Assume <u>Columbia River</u> is tidal east to Bonneville Dam and the Willamette River south to the Oregon City Falls. [WBF]			
		<1 mile.	0				
		1-5 miles.	0				
		>5 miles.	1				
OF3	Distance to Ponded Water (DistPond)	The distance from the AA edge to the closest (but separate) body of nontidal fresh water (wetland, pond, or lake) that is ponded all or most of the year is:		Use field observations, aerial imagery, and/or the <u>ORWAP Map Viewer's</u> Persistent Nontidal layer (under Wetlands). [AM,WBF,WBN,SBM,PD,Sens]			
		<100 ft.	0				
		100 to <300 ft.	0				
		300 to <1000 ft.	0				
		1000 ft. to < 0.5 mile.	0				
		0.5 mile to 2 miles.	1				
		>2 miles.	0				
OF4	Distance to Lake (DistLake)	The distance from the AA edge to the closest (but separate) body of nontidal fresh water that is ponded during most of the year and is larger than 20 acres (about 1000 ft on a side) is:		Use field observations, aerial imagery, and/or the <u>ORWAP Map Viewer's</u> Persistent Nontidal layer (under the Wetlands). [WBF,WBN]			
		<1 mile.	0				
		1-5 miles.	0				
		>5 miles.	1				
OF5	Distance to Herbaceous Open Land (DistOpenL)	The distance from the <u>AA edge</u> to the closest patch of herbaceous openland larger than 10 acres and in flat terrain is:		Herbaceous openland - includes both perennial and non-perennial cover. For example, it can include pasture, herbaceous wetland, meadow, prairie, ryegrass fields, row crops, herbaceous rangeland, golf courses, grassed airports, and hayfields. <u>Do not include</u> open water of lakes, ponds, or rivers; or unvegetated surfaces; or areas with woody vegetation. In dry parts of the state, croplands in flat areas are often irrigated and are distinctly greener in aerial images.			
		<100 ft.	0	Flat terrain - means slope of less than 5%. [WBF,WBN,POL]			
		100 to <300 ft.	0				
		300 to <1000 ft.	0				
		1000 ft. to < 0.5 mile.	0				
		0.5 mile to 2 miles.	1				
>2 miles.	0						

OF6	Distance to Nearest Busy Road (DistRd)	The distance from the <u>AA center</u> to the nearest road with an average daytime traffic rate of at least 1 vehicle/ minute is:		Estimate this traffic rate threshold using your judgment and considering the road width, local population, distance to densely settled areas, alternate routes, and other factors.		
		<100 ft.	0	[AM,SBM,PD,PUv,STR]		
		100 to <300 ft.	1			
		300 to < 0.5 mile.	0			
		0.5 to <1 miles.	0			
		1 to 2 miles.	0			
>2 miles.	0					
OF7	Size of Largest Nearby Patch of Perennial Cover (SizePerenn)	Including the AA's vegetated area, the largest patch or corridor that is perennial cover and is contiguous with vegetation in the AA, occupies:		Contiguous - i.e., not separated by roads or channels that create gaps wider than 150 ft		
		<.01 acre.	0	Perennial cover - See OF1.		
		.01 to < 1 acre.	0	Disqualify any patch or corridor of perennial cover where it becomes separated from the AA by a gap of >150 ft, if the gap is comprised of unvegetated land or if the corridor narrows to less than 150 ft.		
		1 to <10 acres.	0	[AM,SBM,PD,POL,Sens,STR]		
		10 to <100 acres.	1			
		100 to <1000 acres.	0			
1000 to 10,000 acres.	0					
>10,000 acres.	0					
OF8	Wetland Type Local Uniqueness (UniqPatch)	Select EACH of the vegetation types below that comprise more than 10% of the AA <u>AND</u> less than 10% of a <u>0.5 mile</u> radius around the AA. (See Column E).			This is a 2-part question: (1) if no vegetation class comprises more than 10% of the AA, answer "none of the above." (2) If a vegetation class does comprise more than 10%, determine if that vegetation class also comprises less than 10% of a 0.5 mile buffer (~50 acres).	
		Herbaceous vegetation (perennial grasses, sedges, forbs; not under a woody canopy; not crops).	1	[INVv,AMv,WBFv,WBNv,SBMv,PDv,POLv,Sens]		
		Unshaded shrubland (woody plants shorter than 20 ft).	0			
		Trees (woody plants taller than 20 ft).	1			
		None of above.	0			
OF9	Perennial Cover Percentage (PerCovPct)	Within a <u>2-mile</u> radius of the AA center, the percentage of <u>land</u> that has perennial cover is:			Perennial cover - is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground is disturbed less than annually, such as hayfields, lightly grazed pastures, timber harvest areas, and rangeland.	
		<5% of the land.	0	[FA,AM,SBM,POL,Sens,STR]		
		5 to <20% of the land.	1		It <u>does not include</u> water, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads.	
		20 to <60% of the land.	0			
		60 to 90% of the land.	0			
		>90% of the land.	0			
OF10	Forest Percentage (ForestPct)	Within a <u>2-mile</u> radius of the AA center, the cumulative amount of <u>forest</u> (regardless of forest patch sizes, and including any in the AA) is:			Forested patch - is a land cover patch that currently has >70% cover of woody plants taller than 20 ft. May be in a plantation.	
		<5% of the circle.	0	[FA,SBM,STR]		
		5 to <20%.	1			
		20 to <50%.	0			
		50 to 80%.	0			
		>80%.	0			
OF11	Herbaceous Open Land Percentage (OpenLpct)	Within a <u>2-mile</u> radius of the AA center, the amount of herbaceous openland in flat terrain is:			Herbaceous openland - can include both perennial and non-perennial cover. For example, it can include pasture, herbaceous wetland, meadow, prairie, ryegrass fields, row crops, herbaceous rangeland, golf courses, grassed airports, and hayfields.	
		<5% of the land.	0	[WBF,WBN,POL]		
		5 to <20%.	1		<u>Do not include</u> open water of lakes, ponds, or rivers; or unvegetated surfaces; or areas with woody vegetation.	
		20 to <50%.	0		Flat terrain - means slope of less than 5%.	
		50 to 80%.	0			
		>80%.	0			

OF12	Landscape Wetland Connectivity (ConnScapeW)	Within a <u>2-mile</u> radius of the AA center:		Corridor - is simply an elongated patch of perennial cover that is not narrower than 150 ft at any point.		
		There are NO other wetlands.	0			
		There are other wetlands (or a wetland), but NONE are connected to the AA by a corridor of perennial vegetation. The corridor must be at least 150 ft wide along its entire length and not interrupted by roads with regular traffic .	1		Regular traffic - is at least 1 vehicle per hour during the daytime throughout most of the growing season. Assess this based on local knowledge, type of road, and proximity to developed areas.	
		There are other wetlands (or a wetland), and <u>ALL</u> are connected to the AA by the type of corridor described.	0		Perennial - see OF9 for definition.	
		There are other wetlands (or a wetland), and <u>ONE</u> or <u>MORE</u> (but not all) are connected to the AA by the type of corridor described.	0		[WBN,SBM,Sens,STR]	
OF13	Local Wetland Connectivity (ConnLocalW)	Within a <u>0.5 mile</u> radius of the AA center:		Regular traffic - is at least 1 vehicle per hour during the daytime throughout most of the growing season. Assess this based on local knowledge, type of road, and proximity to developed areas.		
		There are NO other wetlands.	0			
		There are other wetlands (or a wetland), but NONE are connected to the AA by a corridor of perennial vegetation. The corridor must be at least 150 ft wide along its entire length and not interrupted by roads with regular traffic .	1		Perennial - see OF9 for definition.	
		There are other wetlands (or a wetland), and ALL are connected to the AA by the type of corridor described.	0		IF possible, field verify	
		There are other wetlands (or a wetland), and ONE or MORE (but not all) are connected to the AA by the type of corridor described.	0		[AM,WBN,SBM,PD,Sens,STR]	
OF14	Wetland Number & Diversity Uniqueness (HUCbest)	According to the ORWAP Report, this AA is located in one of the HUCs that are listed as having a large diversity, area, or number of wetlands relative to the area of the HUC. Select All of the following that are true:		In the <u>ORWAP Report</u> , under the Watershed Information section and the HUC Best table, look at the columns "Is HUC Best?" and "Greatest Criteria Met."		
		Yes, for the HUC8 watershed	0			
		Yes, for the HUC10 watershed	0		[AM,WBF,WBN,SBM,Sens]	
		Yes, for the HUC12 watershed	0			
		None of above.	1			
		Data are inadequate (NWI mapping not completed in HUC).	0			
OF15	Landscape Functional Deficit (GISscore)	In the ORWAP Report, find the AA's 12-digit HUC code. Then, find that HUC code in the FuncDeficit worksheet in the accompanying Supp_Info file. Select All functions below that have a notation for that HUC code.		In the <u>ORWAP Report</u> , under the Watershed Information section, find the HUC 12 code. These are HUCs in which a relatively small number, or proportional area, of the wetlands are likely to be performing the named function, thus adding value to those that are. In the <u>Supp_Info</u> file, open the FuncDeficit worksheet and find the 12-digit HUC code. See <u>Technical Supplement</u> for explanation of how the FuncDeficit was calculated.		
		Water storage (WS)	0			
		Sediment retention (SR)	0			
		Nutrient transformation (NT)	0			
		Thermoregulation (WC)	0		[WSv,WCv,SRv,PRv,NRv,INVv,FAv,AMv,WBNv]	
		Aquatic invertebrate habitat (INV)	0			
		Amphibian habitat (AM)	0			
		Fish habitat (FH)	0			
		Waterbird habitat (WB)	0			
		None of above.	1			
		No data.	0			
		OF16	Conservation Designations of the AA or Local Area (ConDesig)		On the ORWAP Map Viewer, use the layers indicated below to answer. Select All of the following that are true:	
The AA is within or connected to a stream or other water body and this stream or water body has been designated as ESH within <u>0.5 miles</u> of the AA, according to the Essential Salmonid Habitat (ESH) layer.	0			Include areas not shown as ESH, if ODFW has confirmed they qualify as ESH. [WCv, FA, FAv]		
The AA is within or contiguous to a designated Wetland Priority Area , according to the map layer of that name.	0			The Wetland Priority Area is officially designated as such by ODFW (Oregon Wildlife Conservation Strategy), The Wetlands Conservancy, and/or the Oregon Natural Heritage Program. [PU]		
The AA is within an Important Bird Area (IBA) , as officially designated, according to the map layer of that name.	0			[WBFv, WBNv]		
None of above.	1					

OF17	Non-anadromous Fish Species of Conservation Concern (RareFR)	According to the ORWAP Report, the score for occurrences of rare non-anadromous fish species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp_Info</u> file for a list of species.		
		High (≥ 0.75 for maximum score, or ≥ 0.90 for this group's sum score), or there is a recent (within 5 years) onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	Species include Miller Lake lamprey, Goose Lake lamprey, Pit sculpin, Lahontan cutthroat trout, Inland Columbia Basin redband trout, Steelhead (Snake River Basin ESU), Alvord chub, Goose Lake tui chub, Borax Lake chub, Lahontan redband, Oregon chub, Goose Lake sucker, Tahoe sucker, Warner sucker, Shortnose sucker, Lost River sucker. Note that for some of these species, only specific geographic populations are designated. [FRv]		
		Intermediate (i.e., not as described above or below).	0			
		Low (≤ 0.33 for both the maximum score this group's sum score, but not 0 for both).	1			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	0	This question may need to be revised after the field visit.		
OF18	Amphibian or Reptile of Conservation Concern (AmphRare)	According to the ORWAP Report, the score for occurrences of rare amphibian or reptile species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp_Info</u> file for a list of species.		
		High (≥ 0.60 for maximum score, or >0.90 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	Species include: Black salamander, California slender salamander, Cope's giant salamander, Rocky Mountain tailed frog, Woodhouse's toad, Foothill yellow-legged frog, Northern leopard frog, Oregon spotted frog, Columbia spotted frog.		
		Intermediate (i.e., not as described above or below).	1			
		Low (≤ 0.21 for maximum score AND <0.15 for sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	0	[AMv] This question may need to be revised after the field visit.		
OF19	Feeding (Non-breeding) Waterbird Species of Conservation Concern (RareWBF)	According to the ORWAP Report, the score for occurrences of rare <u>non-breeding</u> (feeding) waterbird species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp_Info</u> file for a list of species.		
		High (≥ 0.33 for maximum score, or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	Non-breeding - mainly refers to waterbird feeding during migration and winter. California brown pelican, Aleutian cackling goose, Dusky Canada goose		
		Low (< 0.33 for maximum score and for sum score, but not 0 for both).	0	[WBFv]		
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	1	This question may need to be revised after the field visit.		
OF20	Nesting Waterbird Species of Conservation Concern (RareWBN)	According to the ORWAP Report, the score for occurrences of rare <u>nesting</u> waterbird species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp_Info</u> file for a list of species.		
		High (≥ 0.60 for maximum score, or ≥ 1.00 for this group's sum score), or there is a recent breeding-season observation of any of these species onsite by a qualified observer under conditions similar to what now occur.	0	Species include: Horned grebe, Red-necked grebe, Western grebe, Clark's grebe, American white pelican, Least bittern, Snowy egret, Trumpeter swan, White-faced ibis, Harlequin duck, Bufflehead		
		Intermediate (i.e., not as described above or below).	0	Yellow rail, Western snowy plover, Upland sandpiper, Franklin's gull, Marbled murrelet.		
		Low (≤ 0.09 for maximum score and for sum score, but not 0 for both).	0	[WBNv]		
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species during breeding season by a qualified observer under conditions similar to what now occur.	1	This question may need to be revised after the field visit.		
OF21	Songbird, Raptor, Mammal Species of Conservation Concern (RareSBM)	According to the ORWAP Report, the score for occurrences of rare <u>songbird, raptor, or mammal</u> species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp_Info</u> file for a list of species.		
		High (≥ 0.60 for maximum score, or >1.13 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	Species include: Bald eagle, American peregrine falcon, Arctic peregrine falcon, Greater sage-grouse, Columbian sharp-tailed grouse, Yellow-billed cuckoo, Northern spotted owl, Short-eared owl, Black swift, Lewis's woodpecker, Purple martin, Northern waterthrush, Bobolink, Tricolored blackbird, Fringed myotis, Spotted bat, Townsend's big-eared bat, Pallid bat, Northern sea lion, Fisher, Sea otter, Canada lynx, Columbian white-tailed deer. [SBMv]		
		Intermediate (i.e., not as described above or below).	1			
		Low (≤ 0.09 for maximum score AND <0.13 for sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	0	This question may need to be revised after the field visit.		
OF22	Invertebrate Species of Conservation Concern (RareInvert)	According to the ORWAP Report, the score for occurrences of rare <u>invertebrate</u> species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp_Info</u> file for a list of species.		
		High (≥ 0.75 for maximum score, or for this group's sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	See the <u>Supp_Info</u> file's RareAnimals worksheet for list of species addressed by this question.		
		Low (< 0.75 for maximum score AND for this group's sum score, but not 0 for both).	1	[INVv]		
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	0	This question may need to be revised after the field visit.		

OF23	Plant Species of Conservation Concern (RarePssp)	According to the ORWAP Report, the score for occurrences of rare <u>wetland-indicator plant</u> species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp. Info</u> file for a list of species.		
		High (≥ 0.75 for maximum score, or > 4.00 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	See the <u>Supp. Info's</u> RareWetPlants worksheet for list of species addressed by this question.		
		Intermediate (i.e., not as described above or below).	1	[PDv,POLv]		
		Low (≤ 0.12 for maximum score AND < 0.20 for sum score, but not 0 for both).	0	This question may need to be revised after the field visit.		
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	0			
OF24	River Proximity (RiverProx)	There is a nontidal river within 1 mile and it is adjacent to, OR downslope from, the AA (connected or not). Enter 1, if true. If not, SKIP to OF27.	0	River - as used here is a channel wider than 50 ft between its banks. In the ORWAP Map Viewer, use the Rivers and Streams layer and the Headdidelayer (under Water Source & Quality).[WSv]	NearRiver	
OF25	Floodable Property (FloodProp)	Select ONE of the below:		Row crops - do not include pasture or other perennial cover.		
		Floodplain boundaries within 1 mile downslope or downriver from the AA have not been mapped. Enter 1 and SKIP TO OF27.	0	In the <u>ORWAP Map Viewer</u> , use the 100-year floodplain layer [not available for all parts of Oregon]. Also, the Seasonal Nontidal Wetland layer (under Wetlands) may indicate some floodplain areas.		
		Floodplain boundaries within 1 mile downslope from the AA have been mapped BUT there is neither infrastructure nor row crops vulnerable to river flooding located within the floodplain and within that distance. Enter 1 and SKIP TO OF27.	0	[WSv]		
		Floodplain boundaries have been mapped AND infrastructure row crops are present within 1 mile downslope or downriver and those are not protected from 100-year floods, but actual damage has not been documented.	1	Supplement with field observations at multiple seasons if possible.		
		Damage to infrastructure or row crops from river flooding has been documented within that distance.	0			
OF26	Type of Flood Damage (DamageType)	The greatest financial damage in the floodplain is (or would be) to:		Row crops - do not include pasture or other perennial cover.		
		Buildings, roads, bridges.	1	On the <u>ORWAP Map Viewer</u> , use the 100-year floodplain layer.		
		Row crops (during some years).	0	[WSv]		
OF27	Hydrologic Landscape (Arid)	According to the ORWAP Report, the wetland is in a hydrologic landscape unit classified as:		In the <u>ORWAP Report</u> , under the Location Information table, find the Hydrologic Landscape Class.		
		Arid.	0	[AM,WBNv,SBMv,Sens]		
		Semi-arid.	0			
		Dry.	0			
		Moist.	0			
		Wet.	1			
		Very Wet.	0			
OF28	Input Water - Recognized Quality Issues (WQin)	According to ORWAP Map Viewer's Water Quality Streams layer and Water Quality Lakes layers, <u>ALL of the following are true:</u> (a) within 1 mile upstream from the AA edge, a water body or stream reach is labeled as being 303d, Water Quality Limited (categories 3B-5); Potential Concern; or TMDL Approved AND (b) the problem concerns one or more of the parameters listed below. Select All that apply.		In the <u>ORWAP Map Viewer</u> , open the Water Quality Streams layer and the Water Quality Lakes layer (under Water Source & Quality). Use the Point Identify tool to determine the reason for the listings. You may also obtain this information online at <u>DEQ's</u> web at http://deq12.deq.state.or.us/lasar2/default.aspx .		
		Total suspended solids (TSS), sedimentation, or turbidity.	0			
		Phosphorus, chlorophyll-a, or algae.	0			
		Nitrates, ammonia, chlorophyll-a, or algae.	0	If the AA receives both inflow and outflow from river flooding, consider the polluted water to be both "upstream" and "downstream".		
		Petrochemicals, heavy metals (iron, manganese, lead, zinc, etc.), other toxins.	0	[SRv,PRv,NRv,INV,FA,FR,AM,WBF,WBN,STR]		
		Temperature or dissolved oxygen.	0	This may need to be verified in the field.		
		None of above, or no data. If true, enter 1 and SKIP to OF30.	1		NoDataWQup	
OF29	Duration of Connection Between Problem Area & the AA (ConnecUp)	The upstream problem area mentioned above (OF28) has a surface water connection to the AA:		In the <u>ORWAP Map Viewer</u> , use the Rivers & Streams layer and the Persistent, Seasonal, or Saturated nontidal layers (under Wetlands) to determine duration of surface water connection.		
		For 9 or more continuous months annually.	0	[SRv,PRv,NRv,INV,FA,FR,AM,WBF,WBN,STR]		
		Intermittently (at least once annually, but for less than 9 months continually).	0	This may need to be determined or verified in the field.		
		Never (or less than annually).	0			

OF30	Downslope Water Quality Issues (ContamDown)	According to ORWAP Map Viewer's Water Quality Streams layer and Water Quality Lake map layer, <u>ALL of the following are true:</u> (a) within 1 mile downhill or downstream from the AA's edge, a water body is labeled as being 303d, Water Quality Limited (categories 3B-5); Potential Concern; or TMDL Approved AND (b) the problem concerns one or more of the parameters listed below. Select All that apply.		In the <u>ORWAP Map Viewer</u> open the Water Quality Streams layer and the Water Quality Lakes layer (under Water Source & Quality). Use the Point Identity tool to determine the reason for the listings.	
		Total suspended solids (TSS), sedimentation, or turbidity.	0	[WCv,SRv,PRv,NRv,FA]	
		Phosphorus, chlorophyll-a, or algae.	0		
		Nitrates, ammonia, chlorophyll-a, or algae.	0		
		Petrochemicals, heavy metals (iron, manganese, lead, zinc, etc.), other toxins.	0		
		Temperature or dissolved oxygen.	0		
None of above, or no data. Enter 1 and SKIP to OF32.	1		NoDataWQdo		
OF31	Duration of Connection Between AA & Water Quality Problem Area (ConnDown)	The connection between the downstream problem area mentioned above (OF30) and the AA:		In the <u>ORWAP Map Viewer</u> , use the Rivers & Streams layer and the Persistent, Seasonal, or Saturated nontidal layers (under Wetlands) to determine duration of surface water connection.	
		Is a stream or water body that connects these areas for 9 or more continuous months annually.	0		
		Is a stream or water body that connects these areas intermittently (at least once annually, but for less than 9 months continually).	0	[WCv,SRv,PRv,NRv,FA] This may need to be determined or verified in the field.	
		Is a probable groundwater connection, or connection via direct runoff only (no channel connection).	0		
		Never exists (a topographic ridge probably prevents all the AA's runoff and groundwater from reaching the problem area).	0		
OF32	Drinking Water Source (DEQ) (DWsource)	According to ORWAP Map Viewer's Surface Water Drinking Source Water Areas layer and the Ground Water Drinking Source Water Areas layer, the AA is within:		In the <u>ORWAP Map Viewer</u> , the water source layers are under Water Source & Quality.	
		The source area for a surface-water drinking water (DW) source.	1	[NRv]	
		The source area for a groundwater drinking water source.	0		
		Neither of above.	0		
OF33	Groundwater Risk Designations (GWrisk)	Based on maps in the ORWAP Manual, Appendix A, the AA is: Select All that apply		See the <u>ORWAP Manual</u> , Appendix A, OF33 on pages 45 - 47	
		Within a designated Groundwater Management Area (ODEQ).	0	[NRv]	
		Within a designated Sole Source Aquifer area (EPA): the North Florence Dunal Aquifer.	0		
		Neither of above.	1		
OF34	Relative Elevation in Watershed (Elev)	In the ORWAP Map Viewer, based on the Hydrologic Boundaries 4th Level (HUC 8) layer (under Watersheds), determine if the AA is: (See Column E)		1) Consider which end of the HUC is the bottom. Where streams join, the "V" that they form on the map points towards the bottom of the HUC.	
		In the upper one-third of its watershed.	0	2) If the AA is closer to the HUC's outlet than to its upper end, and is closer to the river or large stream that exits at the bottom of the HUC than it is to the boundary (margin) of the HUC, then check "lower 1/3" If not near that river, check "middle 1/3".	
		In the middle one-third of its watershed.	0	3) If the AA is not in a 100-yr floodplain, is closer to the HUC upper end than to its outlet, and is closer to the boundary (margin) of the HUC than to the river or large stream that exits at the bottom of the HUC, then check "upper 1/3"	LowerShed
		In the lower one-third of its watershed.	1	4) For all other conditions, check "middle 1/3". [WCv,SRv,PRv,OE,FA,Sens]	
OF35	Runoff Contributing Area (RCA) - Wetland as % of (WetPctRCA)	Delimit the wetland's Runoff Contributing Area (RCA) using a topographic base map. The area of the AA's wetland is:	W	See the <u>ORWAP Manual</u> for specific protocol for delimiting the RCA. The RCA includes only the areas that potentially drain directly to the AA's wetland rather than to channels that flow or flood into that wetland. Exact precision in drawing the boundary is not required.	
		<1% of its RCA.	0		
		1 to <10% of its RCA.	1	[WS,WCv,SR,PR,NR]	
		10 to 100% of its RCA.	0		
		Larger than the area of its RCA. Enter 1 and SKIP TO OF39.	0		NoRCA
OF36	Unvegetated % in the RCA (ImpervRCA)	The proportion of the RCA comprised of buildings, roads, parking lots, exposed bedrock, and other surface that is usually unvegetated at the time of peak annual runoff is about:	W	See the <u>ORWAP Manual</u> for instructions.	
		<10%.	1	[WSv,WCv,SRv,PRv,INV,FA,Sens,STR]	
		10 to 25%.	0		
		>25%.	0		

OF37	Transport From Upslope (TransRCA)	A relatively large proportion of the precipitation that falls farther upslope in the RCA reaches this wetland quickly as indicated by the following: (a) RCA slopes are steep, and/or (b) upslope wetlands historically present have been filled or drained extensively, and/or (c) land cover is mostly non-forest, and/or (d) most RCA soils are shallow. This statement is:	W	Refer to aerial imagery and/or consult local sources. See the <u>ORWAP Manual</u> for instructions. [WSv,SRv,PRv,STR]		
		Mostly true.	0			
		Somewhat true.	0			
		Mostly untrue.	1			
OF38	Upslope Soil Erodibility Risk (ErodeUp)	According to ORWAP Map Viewer's Oregon Soils layer, the erosion hazard rating of the soil within 200 ft away and upslope of the AA is:		See the <u>ORWAP Manual</u> for instructions on how to determine the erosion hazard rating. [SRv,PRv,STR]		
		Slight.	1			
		Moderate.	0			
		Severe.	0			
		Very severe.	0			
		Could not determine.	0			
OF39	Streamflow Contributing Area (SCA) - Wetland as % of (WetPctSCA)	Delimit (or visualize, for large river basins) the wetland's Streamflow Contributing Area (SCA) using a topographic base map. The area of the AA's wetland is:	W	See the <u>ORWP Manual</u> for specific protocol for delimiting the SCA. The SCA is all upland areas that drain into streams, rivers, and lakes that feed the AA's wetland either directly or during semi-annual floods. In addition, for wetlands intercepted by a mapped stream, the SCA can be delineated automatically and its area reported at these <u>USGS web sites</u> : http://streamstats.usgs.gov/orstreamstats/index.asp http://water.usgs.gov/osw/streamstats/oregon.html . Enter the coordinates, zoom to scale of 1:24,000 or finer, click on the stream, and click on Basin Delineation, then BasinChar. [WS,WcV,SR,PR,NR]		
		<1% of its SCA, or wetland is in the floodplain of a major river.	0			
		1 to <10% of its SCA.	0			
		10 to 100% of its SCA.	0			
		Larger than the area of its SCA. Enter 1 and SKIP TO OF41.	0			NoSCA1
		Wetland lacks tributaries and receives no overbank water. Enter 1 and SKIP TO OF41.	1			NoSCA
OF40	Unvegetated % in the SCA (ImpervSCA)	The proportion of the SCA comprised of buildings, roads, parking lots, exposed bedrock, and other surface that is usually unvegetated at the time of peak annual runoff is about :	W	See the <u>ORWAP Manual</u> for instructions. [WCv,SRv,PRv,FA,STR]		
		<10%.	0			
		10 to 25%.	0			
		>25%.	0			
OF41	Upland Edge Shape Complexity (EdgeShape)	Most of the edge between the AA's wetland and upland is (select one):	W	See <u>ORWAP Manual's</u> illustrations in Figure 3-12 (pg 31) [NR, SBM, Sens]		
		Linear: a significant proportion of the wetland's upland edge is straight, as in wetlands bounded partly or wholly by dikes or roads, or the AA is entirely surrounded by water or other wetlands.	0			
		Intermediate: Wetland's shape is (a) ovoid, or (b) mildly ragged edge, and/or (c) contains a lesser amount of artificially straight edge.	1			
		Convoluted: Wetland perimeter is many times longer than maximum width of the wetland, with many alcoves and indentations ("fingers").	0			
OF42	Zoning (Zoning)	According to ORWAP Map Viewer's Oregon Zoning layer, the dominant zoned land use designation for currently undeveloped parcels upslope from the AA and within 300 ft. of its upland edge is:		See the <u>ORWAP Manual</u> for instructions on how to determine the zoning designation. If information is not provided, check local zoning maps. [WSv,WcV,SRv,PRv,INVv,FAv,FRv,AMv,WBFv,WBNv,SBMv,PDv,POLv]		
		Development (Commercial, Industrial, Urban Residential, etc.), or no undeveloped parcels exist upslope from the AA.	1			
		Agriculture or Rural Residential.	0			
		Forest or Open Space, or entirely public lands.	0			
		Not zoned, or no information.	0			

OF43	Growing Degree Days (GDD)	According to ORWAP Map Viewer's Growing Degree Days layer, the long term normal Growing Degree Days category at the approximate location of the AA is:		See the ORWAP Manual for instructions on how to determine the growing degree days category. [WCv,NR,CS,OE,AM,WBN,SBM,Sens]		
		<256.	0			
		256 - 1020.	0			
		1021-1785.	0			
		1786 - 2550.	1			
		2551 - 3315.	0			
		3316 - 4079.	0			
		> 4079.	0			

Date:		Name:		Site:		
Field Data Form F (nontidal Wetlands) ORWAP V 3.1		Conduct an assessment <u>only after reading the accompanying Manual and explanations in column E below.</u> For each affirmative answer, change the 0 in the "Data" column to a "1". Answer all items except where directed to skip to others. Questions whose cells in "Data" column have a "W" MUST be answered for the ENTIRE wetland and bordering waters.		For a list of functions to which each question pertains, see bracketed codes in column E. Codes for functions and their benefits are: WS= Water Storage, WC= Water Cooling, SR= Sediment Retention, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Export, INV= Invertebrates, FA= Anadromous Fish, FR= Resident Fish, AM= Amphibians, WBF= Feeding Waterbirds, WBN= Nesting Waterbirds, SBM= Songbirds, Mammals, & Raptors, POL= Pollinators, PH= Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sens= Sensitivity, STR= Stressors.		For guidance and detailed descriptions of how Excel calculates the numbers in the Scores worksheet, see the Technical Supplement and Appendix B of the accompanying Manual. For a documented rationale for each indicator, open each of the worksheet tabs at the bottom (one for each function or value) and see column H.
#	Indicators	Condition Choices	Data	Explanations, Definitions (Column E)	Cell Name	Comments
F1	Tidal Wetland (Tidal)	This is a tidal wetland (either freshwater or saltwater). If yes, GO TO worksheet " T " . Do not enter any data here. If nontidal, continue with F2.		Tidal wetland - a wetland that receives tidal water at least once during a normal year, regardless of salinity, and dominated by emergent or woody vegetation. Tidal flooding occurs on a 6-hour cycle DURING THE TIME it is flooded by tide, which may be as infrequent as once per year. If NWI map shows the wetland with a code beginning with E (for estuarine), assume the wetland to be tidal. However, some wetlands lacking that code are also tidal.		
F2	Ponded Condition (Lentic)	At least once every 2 years, some part of the AA contains a cumulative total of >900 sq.ft. of surface water that is ponded. The water persists for >6 days and may be hidden beneath emergent vegetation or scattered in small pools. Enter 1, if true.	0	Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle). [OE,AM,WBF,WBN,PD]	Lentic	
		Reminder: For all questions, the AA should include all persistent waters in ponds smaller than 20 acres that are adjacent to the AA. The AA should also include part of the water area of adjacent lakes or rivers larger than 20 acres -- specifically, the open water part adjacent to wetland vegetation and equal in width to the average width of that vegetated zone.		Adjacent - is used synonymously with abutting, adjoining, bordering, contiguous -- and means no upland (manmade or natural) completely separates the described features along their directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent -- a large portion of their edges must match. The features do not have to be hydrologically connected in order to be considered adjacent.		
F3	Water Regime (Hydropd)	The water regime (hydroperiod) of the most permanent (usually deepest) part of the AA is: Select only ONE. [To meet any of the definitions other than <u>Ephemeral</u> , there must be >100 sq ft of surface water for the duration described, otherwise mark the type listed above it.] Ephemeral. Surface water in the wettest part of the AA is present for fewer than 7 consecutive days during an average growing season. Includes some of the areas mapped as <u>Saturated</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F25. Temporary. Surface water present for 1-4 weeks consecutively during an average growing season, OR if persists for longer, it is almost entirely in scattered pools, each smaller than 1 sq.m. Dries up completely during part of most average years. Includes some of the areas mapped as <u>Saturated</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F25. Seasonal. Surface water present for 5-17 weeks (1-4 months) consecutively during an average growing season, but dries up completely during part of most average years. Includes some of the areas mapped as <u>Seasonal</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F5. Semi-Persistent. Surface water present for more than 17 weeks (4 months) consecutively during an average growing season, but dries up completely during part of most average years. Includes some of the areas mapped as <u>Seasonal</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F5. Permanent. Does not dry up completely during most average years. Includes some of the areas mapped as <u>Persistent</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and continue.	0 1 0 0	In the <u>NRCS county soil survey</u> , the Water Features table provides information about periods of flooding, ponding, and highwater table depths. Descriptions of the soil units may include information on saturation persistence. Also consider the hydroperiod label on NWI wetland polygons. [WS,FA,FR]	NeverWater TempWet ShallowType DeepType	
			0	Permanent - usually has significant groundwater input, higher conductivity, less annual water level fluctuation. No woody vegetation in most persistently flooded parts. Often with extensive open water and subsurface aquatic plants.	PermType	

F4	Flooded Persistently - % of AA (PermW)	Identify the parts of the AA that still contain surface water even during the driest times of a normal year . At that time, the percentage of the AA that still contains surface water is:		driest times of a normal year - i.e., when the AA's surface water is at its lowest annual level.	
		1 to <25% of the AA.	1	Sites fed by unregulated streams that descend on north-facing slopes, tend to remain wet longer into the summer. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat.	
		25 to <50% of the AA.	0	[PR,NR,CS,INV,FR,AM,WBF,WBN]	
		50 to 95% of the AA.	0		
		>95% of the AA.	0		AllPermWater
F5	Depth Class (Predominant) (DepthDom)	When water is present in the AA, the depth most of the time in most of inundated area is: [Note: NOT necessarily the maximum spatial or annual depth]		This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the AA is brief, the answer will be based on the depth of the most persistently inundated part of the AA. Include surface water in channels and ditches as well as ponded areas.	
		>0 to <0.5 ft.	1	In the <u>ORWAP Manual</u> , see the diagram in Appendix A (pg.48).	
		0.5 to < 1 ft deep.	0		
		1 to <3 ft deep.	0		
		3 to 6 ft deep.	0	[WC,SR,PR,CS,OE,INV,FA,FR,WBF,WBN,PD,Sens]	
F6	Depth Class Distribution (DepthEven)	Within the area described above, and during most of the time when surface water is present, the water area has: Select only one.		Estimate these proportions by considering the gradient and microtopography of the site.	
		One depth class covering >90% of the AA's inundated area (use the classes in the question above).	1	In the <u>ORWAP Manual</u> , see the diagram in Appendix A (pg.48).	
		One depth class covering 51-90% of the AA's inundated area (use the classes in the question above).	0		
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	[INV,FR,WBF,WBN,PD]	
F7	Emergent Plants -- Area (EmArea)	Consider just the area that has surface water for >1 week during the growing season. Herbaceous plants (not moss, not woody) whose foliage extends above a water surface in this area (i.e., emergents) cumulatively occupy an annual maximum of:	W	If multiple small patches are separated by less than 150 ft, they may be combined when evaluating this question.	
		<0.01 acre (< 400 sq.ft). Enter 1 and SKIP TO F10, unless only part of a wetland is being assessed.	0	[SR,PR,OE,INV,FR,WBF,WBN,SBM,PD]	NoEm
		0.01 to< 0.10 acres (3,920 sq. ft).	1		
		0.10 to <0.50 acres (21,340 sq. ft).	0		
		0.50 to <5 acres.	0		
		5 to 50 acres.	0		
F8	% Emergent Plants (EmPct)	Emergent plants occupy an annual maximum of:		[WC,SR,PR,NR,CS,OE,INV,FA,FR,AM,WBF,WBN,SBM]	
		<5% of the parts of the AA that are inundated for >7 days at some time of the year.	0		
		5 to <30% of the parts of the AA that are inundated for >7 days at some time of the year.	0		
		30 to <60% of the parts of the AA that are inundated for >7 days at some time of the year.	0		
		60 to 95% of the parts of the AA that are inundated for >7 days at some time of the year.	0		
		>95% of the parts of the AA that are inundated for >7 days at some time of the year.	1		
F9	Cattail or Tall Bulrush Cover (Cttail)	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.) or tall bulrush is:		[WBN, SBM]	
		<1% of the emergent vegetation, or cattail and bulrush are absent.	1		
		1 to <25% of the emergent vegetation.	0		
		25 to 75% of the emergent vegetation.	0		
		>75%, of the emergent vegetation.	0		

F10	Water Shading by AA's Woody Vegetation - Driest (WoodyDryShade)	During an average growing season, when water levels are lowest (but surface water still occupies >400 sq ft or >1% of the AA), the percentage of the remaining surface water within the AA that is shaded by trees and/or shrubs located within the AA is:		[WC,FA,WBN,SBM]	
		<5% of the water, and fewer than 10 woody plants taller than 3 ft shade it, or all surface water is flowing.	0		
		<5% of the water, but more than 10 woody plants taller than 3 ft shade it.	1		
		5 to <25% of the water.	0		
		25 to <50% of the water.	0		
		50 to 95% of the water.	0		
		>95% of the water.	0		
F11	Open Water - Extent	During most of the growing season, the largest patch of open water that is in or adjacent to the AA is >1 acre and mostly deeper than 1 ft. Enter 1, if true.	0	Open Water - is surface water of any depth that contains no emergent herbaceous or woody vegetation (may contain floating-leaved or completely submersed plants). It may be partially shaded by a tree canopy.	OpenW
F12	All Ponded Water as Percentage - Wettest (PondWpctWet)	When water levels are <u>highest</u> , during a normal year, the surface water that is ponded continually for >6 days occupies:		Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle).	
		<1% or none of the AA. Surface water is completely or nearly absent then, or is entirely flowing. Enter 1 and SKIP TO F22.	0		NoPond
		1-5% of the AA.	1	[WS,WC,CS,OE,INV,AM,WBF,WBN]	
		5 to <30% of the AA.	0		
		30 to <70% of the AA.	0		
		70 to 95% of the AA.	0		
		>95% of the AA.	0		
F13	Ponded Open Water Area - Wettest (OWareaWet)	When water levels are <u>highest</u> , during a normal year, the AA's ponded open water occupies a cumulative area of:	W	Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle).	
		<0.10 acre (< 4356 sq. ft) of the AA and adjacent ponded waters. Enter 1 and SKIP TO F16.	1	Open water - is surface water of any depth that contains no emergent herbaceous or wood vegetation (may contain floating-leaved or completely submersed species). It may be partially shaded by a tree canopy.	NoPondOW
		0.10 to <0.50 acres (21,340 sq. ft) of the AA and adjacent ponded waters.	0		
		0.50 to <1 acres of the AA and adjacent ponded waters.	0		
		1 to <5 acres of the AA and adjacent ponded waters.	0		
		5 to <50 acres of the AA and adjacent ponded waters.	0		
		50 to <640 acres (1 sq. mi) of the AA and adjacent ponded waters.	0	[WS,WBF,WBN]	
		64 to <1000 acres of the AA and adjacent ponded waters.	0		
		1000 to 2500 acres of the AA and adjacent ponded waters.	0		
>2500 acres (>4 sq.mi) of the AA and adjacent ponded waters.	0				

F14	Ponded Open Water Distribution - Wettest (WaterMixWet)	When water levels are highest, during a normal year, the distribution (in aerial view) of ponded open water patches larger than 0.01 acre (400 sq. ft) within the AA is:		[NR,AM,WBF,WBN,PD]		
		(a) Vegetation and open water EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are many small patches of open water scattered widely within vegetation or many small vegetation clump "islands" scattered widely within open water. Typical (for example) of some extensive bulrush and cattail marshes.	0			
		(a) Vegetation and open water EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are only a few (or no) small patches of open water scattered widely within vegetation or a few small vegetation clump "islands" scattered widely within open water.	0			
		(a) Vegetation OR open water comprise >70% of the AA (and its bordering waters) AND (b) There are several small patches of open water scattered within vegetation or several small vegetation clump "islands" scattered within open water.	0			
		(a) Vegetation OR open water comprise >70% of the AA (and its bordering waters) AND (b) Open water is mostly in a single area (e.g., center of the wetland) and vegetation is in the rest (e.g., periphery), with almost no intermixing. (Typical of many ponds excavated for livestock watering, stormwater treatment, mineral extraction as well as many wetlands that are inundated only temporarily each year).	0			
F15	Width of Vegetated Zone - Wettest (WidthWet)	When water levels are highest, during a normal year, the width of the vegetated wetland that separates the largest patch of open water within or bordering the AA from the closest adjacent uplands, is predominantly: [Note: This is not asking for the maximum width.]		Vegetated wetland - in this case does not include underwater or floating-leaved plants, i.e., aquatic bed. In farmed wetlands that have different crops from year to year, consider vegetation condition as it probably existed during most of the past 5 years.		
		<5 ft, or no vegetation between upland and open water.	0	If open water exists as many patches, use the distance between the majority of those patches and uplands.		
		5 to <30 ft.	0			
		30 to <50 ft.	0			
		50 to <100 ft.	0			
		100 to 300 ft.	0	[WC,SR,PR,NR,CS,OE,AM,WBF,WBN,SBM,PD,Sens,EC]		
		> 300 ft.	0			
F16	All Ponded Water as a Percentage (Driest) (PondWpctDry)	When water levels are lowest, during a normal year, but surface water still occupies >1,076 sq feet (100 sq meter) OR >1% of the AA (whichever is more), the water that is ponded (either visible or concealed by vegetation) in the AA occupies:		Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle).		
		<1% or none. Surface water is completely or nearly absent then, or is entirely flowing. Enter 1 and SKIP TO F22.	1	[WC,FA,FR,AM,WBN,Sens]	NoPond2	
		1 to 5% of the AA.	0			
		5 to <30% of the AA.	0			
		30 to <70% of the AA.	0			
		70 to 95% of the AA.	0			
		>95% of the AA.	0			

F17	Ponded Open Water Area (Driest) (OWareaDry)	When water levels are <u>lowest</u> , during a normal year, the AA's ponded open water occupies a cumulative area, including adjacent ponded waters, of:	W	<p>Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle).</p> <p>Open water - is surface water of any depth that contains no emergent herbaceous or wood vegetation (may contain floating-leaved or completely submersed species). It may be partially shaded by a tree canopy.</p> <p>[WBN,PUv]</p>	NoPondOW2
		<0.10 acre (< 4356 sq. ft). Enter 1 and SKIP TO F24.	0		
		0.10 to <0.50 acres (21,340 sq. ft).	0		
		0.50 to <1 acres.	0		
		1- 4 acres.	0		
		5 to <50 acres.	0		
		50 to <640 acres (1 sq. mi).	0		
		640 to <1000 acres.	0		
1000 to 2500 acres.	0				
>2500 acres (>4 sq.mi).	0				
F18	Ponded Open Water Distribution - (Driest) (WaterMixDry)	When water levels are lowest, during a normal year, the distribution of ponded open water patches larger than 0.01 acre (400 sq. ft) within the AA is:		[NR,INV,AM,WBN,SBM]	
		(a) Vegetation <u>and open water</u> EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are <u>many small patches</u> of open water scattered widely within vegetation or many small vegetation clump "islands" scattered widely within open water. Typical (for example) of some extensive bulrush and cattail marshes.	0		
		(a) Vegetation <u>and open water</u> EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are only a <u>few (or no) small patches</u> of open water scattered widely within vegetation or a few small vegetation clump "islands" scattered widely within open water.	0		
		(a) Vegetation <u>OR open water</u> comprise >70% of the AA (and its bordering waters) AND (b) There are <u>several small patches</u> of open water scattered within vegetation or several small vegetation clump "islands" scattered within open water.	0		
		(a) Vegetation <u>OR open water</u> comprise >70% of the AA (and its bordering waters) AND (b) Open water is <u>mostly in a single area</u> (e.g., center of the wetland) and vegetation is in the rest (e.g., periphery), with almost no intermixing. Typical of many ponds excavated for livestock watering, stormwater treatment, mineral extraction as well as many wetlands that are inundated only temporarily each year.	0		
F19	Floating Algae & Duckweed (Algae)	At some time of the year, <u>most</u> of the AA's otherwise-unshaded water surface is covered by floating mats of algae, or small (<1 inch) floating plants such as duckweed, <i>Azolla</i> , <i>Wolffia</i> , or <i>Riccia</i> . Enter 1, if true.	0	This includes most nontidal wetlands labeled as Aquatic Bed (AB) on NWI maps. If wetland can be visited only during winter, it may not be possible to answer this question with much certainty unless local sources are contacted or indicators (e.g., dried remains of algae) are found.	[FA,WBF,WBN,EC]
F20	Floating-leaved & Submerged Aquatic Vegetation (SAV)	SAV (submerged & floating-leaved aquatic vegetation, excluding the species listed above) occupies an annual maximum of:		<p>SAV - are herbaceous plants that characteristically grow at or below the water surface, i.e., whose leaves are primarily and characteristically under or on the water surface during most of the part of the growing season when surface water is present. Some species are rooted in the sediment whereas others are not. If pond lily (<i>Nuphar</i>) is the predominant species, consider its maximum extent only during the period when surface water is present beneath the leaves.</p> <p>[OE,INV,FR,AM,WBF,WBN]</p>	NoSAV
		none, or <5% of the water area.	0		
		5 to <25% of the water area.	0		
		25 to <50% of the water area.	0		
		50 to 95% of the water area.	0		
		>95% of the water area.	0		
		many SAV plants present, but impossible to select from the above categories.	0		

F21	Width of Vegetated Zone (Driest) (WidthDry)	When water levels are lowest, during a normal year, but surface water still occupies >400 sq feet or >1% of the AA (which ever is more), the width of the vegetated wetland that separates the largest patch of open water within or bordering the AA from the closest adjacent uplands, is predominantly:		Measure the width perpendicular to the open water part.		
		<5 ft, or no vegetation between upland and open water.	0	Vegetated wetland - in this case does not include underwater or floating-leaved plants, i.e., aquatic bed. In farmed wetlands that have different crops from year to year, consider vegetation condition as it probably existed during most of the past 5 years. Note: For most sites larger than 1 acre and with persistent water, measure the width using aerial imagery rather than estimating in the field. [WBN]		
		5 to <30 ft.	0			
		30 to <50 ft.	0			
		50 to <100 ft.	0			
		100 to 300 ft.	0			
		> 300 ft.	0			
F22	Beaver (Beaver)	Use of the AA by beaver during the past 5 years is: Select most applicable ONE.			Valley width - is delimited by an abrupt increase in slope on both sides of the channel. [AM,SBM,PD,Sens]	
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, or lodges.	0			
		Very likely based on known occurrence in this part of the region and <u>proximity to ALL of the following (a)</u> a persistent freshwater wetland, pond, or lake, or a perennial low-gradient (<5%) channel, and (b) average valley width is > 150 ft and (c) >20% cumulative cover of aspen, cottonwood, alder, and willow in vegetated areas within 150 ft of the AA's edge. Or there is evidence of beaver just outside the AA.	0			
		Somewhat likely based on known occurrence in this part of the region and <u>proximity to ALL of the following (a)</u> a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) average valley width is >50 ft, and (c) >20% cumulative cover of hardwood trees and shrubs in vegetated areas within 150 ft of the AA's edge.	0			
		Unlikely because site characteristics above are deficient, and/or this is an area where beaver are routinely removed. But beaver occur within 2 miles.	1			
		None. Beaver are absent from this part of the region.	0			
F23	Isolated Island (Island)	During June, the wetland contains (or is part of) an island that is isolated from the shore by water depths >3 ft. The island may be solid, or it may be a floating vegetation mat suitable for nesting waterbirds. The island must be larger than 400 sq.ft and without inhabited buildings. Enter 1, if true.	0	[WBF,WBN]		
F24	Ice-free (IceDura)	During most years, most of the AA's surface water (if any) does not freeze, or freezes for fewer than 4 continuous weeks. Enter 1, if true.	1	[PR,FR,WBF]		
F25	Water Fluctuation Range - Maximum (Fluctu)	The maximum vertical fluctuation in surface water within the AA, during a normal year is:		maximum vertical fluctuation - is the difference between the highest annual and lowest annual water level during an average year. Use field indicators to assess this indicator. [WS,SR,PR,NR,CS,OE,INV,AM,WBN,PD]		
		<0.5 ft or stable.	1			
		0.5 to < 1 ft.	0			
		1 to <3 ft.	0			
		3 to 6 ft.	0			
		>6 ft.	0			
F26	% Only Saturated or Seasonally Flooded (SeasPct)	Identify the parts (if any) of the AA that never contain surface water (only saturated soil) or where the water (either ponded or flowing) usually remains on the land surface <u>for less than the entire growing season</u> . The percentage of the AA containing such areas is:		If you can identify plants, use their wetland indicator status to infer the possible extent of seasonal-inundation within a wetland. Vegetation may be patterned in concentric or parallel zones, as one moves outward & away from the deepest part of the wetland or channel. Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) may be evident when not fully inundated. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualizing where that would intercept the land along the river. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. Although useful only as a general guide, the NRCS county soil survey descriptions of the soil units and water feature table usually includes information on flooding frequency and saturation persistence. [WS,SR,NR,CS,OE,INV,FA,WBF,WBN,SBM,PD,Sens]		
		<5% of the AA, or none (i.e., all water persists for >4 months).	0		NoSeasonal	
		5 to <25% of the AA.	0			
		25 to <50% of the AA.	0			
		50 to 75% of the AA.	0			
		>75% of the AA.	1			

F27	Salinity, Alkalinity, Conductance (Salin)	The AA's surface water is mostly:		Saline or brackish conditions are commonly indicated by a prevalence of particular plant species. Consult the <u>ORWAP_SupplInfo</u> file's P_Salt worksheet for a list of these.	
		Brackish or saline. Plants that indicate saline conditions dominate the vegetation. Salt crust may be obvious around the perimeter and on flats.	0		
		Slightly brackish. Plants that indicate saline conditions are common. Salt crust may or may not be present along perimeter.	0	Brackish or saline - conductance of >5000 µS/cm, or >3200 ppm TDS Slightly brackish - conductance of 500- 5000 µS/cm, or 320 - 3200 ppm TDS Fresh - conductance of < 500 µS/cm, or <320 ppm TDS	FreshW
		Fresh. [Note: Assume this to be the condition unless wetland is known to be a playa or there is other contradicting evidence].	1	[PR,CS,AM,SBM]	
		Unknown.	0		
F28	Fish & Waterborne Pests (FishAcc)	Select All that apply:		[INV,FA,FR,AM,WBF]	
		A regularly-used boat dock is present within or contiguous to the AA.	0		
		A regularly-used boat dock is not within the AA, but there is one within 300 ft. of the AA and there is a persistent surface connection between the dock and the AA.	0		
		Fish (native or stocked) are known to be present in the AA, or can access it during at least one day annually.	0		
		None of the above, and could not estimate fish presence/absence.	1		
F29	Non-native Aquatic Animals (PestAnim)	The following are known or likely to have reproducing populations in this AA, its wetland, or in water bodies within 300 ft that connect to the AA at least seasonally. Select All that apply:		Assume non-native fish to be present if wetland is associated with a nearby reservoir, fish pond, or perennial stream flowing through an agricultural or residential area. Assume bullfrog, nutria, and/or carp to be present if (a) the AA contains persistent water or is flooded seasonally by an adjoining body of permanent water, and (b) not a forested wetland, and (c) in western Oregon, elevation is lower than about 3000 ft. In the ORWAP_SupplInfo file, see Inverts_Exo worksheet for more complete list of non-native invertebrates of Oregon, and WetVerts worksheet for more complete list of fish that are not native to Oregon.	
		Non-native amphibians (e.g., bullfrog) or reptiles (e.g., red-ear slider).	1	You may also consult: http://nas.er.usgs.gov/queries/default.aspx http://www.dfw.state.or.us/conservationstrategy/invasive_species.asp	
		Carp.	0	[FA,AM,EC]	
		Non-native fish that prey on tadpoles or turtles (e.g., bass, walleye, crappie, brook trout).	0		
		Non-native invertebrates (e.g., New Zealand mudsnail, mitten crab, rusty crayfish).	0		
		Nutria.	1		
		None of above.	0		
F30	Shorebird Feeding Habitats (Shorebd)	The extent of <u>mudflats</u> , <u>very shallow waters</u> , or <u>shortgrass meadows</u> , within the AA, that meet the definition of shorebird habitat for at least 3 months during the period of late summer through the following May is:		Shorebird habitat - areas must have (a) grasses shorter than 6", or a mudflat, during any part of this period, AND (b) soils that either are saturated or covered with <2 inches of water during any part of this period, AND (c) no detectable surrounding slope (e.g., not the bottom of an incised dry channel), AND (d) not shaded by shrubs or trees. See photograph in Appendix A of manual. This addresses needs of most migratory sandpipers, plovers, curlews, and godwits.	
		None, or <100 sq. ft.	1	[WBF]	
		100 to <1000 sq. ft. within AA.	0		
		1000 to 10,000 sq. ft. within AA.	0		
		>10,000 sq. ft. within AA.	0		
F31	Outflow Duration (OutDura)	The <u>most persistent</u> surface water connection (outlet channel, pipe, ditch, or overbank water exchange) between the AA and the closest stream or lake located downslope is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of its wetland, OR the surface connection between the AA's wetland and a mapped stream or lake located within 300 ft downslope from this wetland].	W	The emphasis is on the connection to a mapped stream network. A larger difference in elevation between the wetland-upland boundary and the bottom of the wetland outlet (if any) indicates shorter outflow duration.	
		Persistent (>9 months/year).	0	Do not rely only on topographic maps or NWI maps to show this; inspect while in field if possible, and ask landowner. The durations given are only approximate and are for a "normal" year.	
		Seasonal (14 days to 9 months/year, not necessarily consecutive).	0	The connection need not occur during the growing season. Assume that depressions with effective nearby ditches or tile drains will connect for shorter periods.	
		Temporary (<14 days, not necessarily consecutive).	0		
		None -- no surface water flows out of the wetland except possibly during extreme events (<once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. Enter 1 and SKIP TO F33.	1	[WS,WCV,SR,PR,NR,CS,OE,FA,FR,Sens]	NoOutlet

F32	Outflow Confinement (Constric)	During major runoff events , in the places described above where surface water exits the AA, it:	W	Major runoff events - would include biennial high water caused by storms and/or rapid snowmelt.		
		Is impeded as it mostly passes through a pipe, culvert, tidegate, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography).	0	Impeded - means causing a delay or reduction in water velocity or volume.		
		Leaves mainly through natural surface exits, not largely through artificial or temporary features which impede or accelerate outflow.	1	[WS,SR,PR,NR,CS,OE,Sens,STR]		
		Is exported more quickly than usual as it mostly passes through ditches or pipes intended to accelerate drainage. They may be within the AA or connected to its outlet or within 30 ft of the AA's edge.	0			
F33	Tributary or Overbank Inflow (Inflow)	At least once annually, surface water from upstream or another water body moves into the AA. It may enter directly, or as unconfined overflow from a contiguous river or lake. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. Enter 1, if true. If false, SKIP to F36.	0	[SRv,PRv, PD]	Inflow	
F34	Input Channel Gradient (SlopeInChan)	The gradient of the tributary with the largest inflow, averaged over the 150 ft. before it enters the AA (but excluding any portion of the distance where water travels through a pipe) is:		[SRv, PRv]		
		<1%.	0			
		1 to <3%.	0			
		3 to 6%.	0			
		>6%.	0			
F35	Throughflow Complexity (ThruFlo)	[Skip this question if the AA lacks both an inlet and outlet.] During peak annual flow, water entering the AA in channels encounters which of the following conditions as it travels through the AA: Select the ONE encountered most.		This mainly refers to surface water that moves between the inlet and outlet. Some judgment is required in assessing straight vs. indirect flow path.		
		Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel within unvegetated (often incised) channels and has minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	See <u>ORWAP Manual</u> Appendix A diagram (pg 50).		
		Bumps into <u>herbaceous vegetation</u> but mostly remains in fairly <u>straight channels</u> .	0	[WS,SR,PR,NR,OE,INV,FA,FR,WBF,WBN,PD]		
		Bumps into <u>herbaceous vegetation</u> and mostly <u>spreads throughout</u> , or follows a fairly <u>indirect path</u> (in widely meandering, multi-branched, or braided channels).	0			
		Bumps into <u>tree trunks and/or shrub stems</u> but mostly remains in fairly <u>straight channels</u> .	0			
		Bumps into <u>tree trunks and/or shrub stems</u> and follows a fairly <u>indirect path</u> (meandering, multi-branched, or braided) from entrance to exit.	0			
F36	Internal Gradient (Gradient)	The gradient from the lowest to highest point of land within the AA (or from outlet to inlet) is:		Wetlands with no outlet, and wetlands where most surface water is impounded on site, should be considered flat (<2%).		
		<2% (internal flow is absent or barely detectable; basically flat).	1	For other wetlands, estimate gradient as the elevation difference between the inlet and outlet (if any) divided by the distance between them, or the difference between the highest and lowest points in the wetland divided by the distance between them.		
		2 to <6%.	0			
		6 to 10%.	0		TooSteep1	
		>10%.	0	[WS,SR,PR,NR,CS,OE,AM,WBF,WBN]	TooSteep2	

F37	Groundwater Strength of Evidence (Groundw)	Select first one that applies:		[WS,WC,NR,CS,OE,INV,FA,FR,PD]	
		In the AA or its wetland: (a) Springs are observed, OR (b) Water is markedly cooler in summer and warmer in winter (e.g., later ice formation) than in other local wetlands, OR (c) Measurements from shallow wells indicate groundwater is discharging to the wetland, OR (d) Water visibly seeps into pits dug within the AA during the driest time of the year and located >30 ft from the closest surface water.	0		
		The AA's wetland: (a) Is very close to the base of a natural slope steeper than 15% and longer than 300 ft or is located at a geologic fault, OR (b) Has no persistently flowing tributary AND one or more is true: (b1) Is on a natural slope of >5%, OR (b2) Has rust deposits ("iron floc"), colored precipitates, or dispersible natural oil sheen, OR (b3) Is in an Arid or Semi-arid hydrologic unit .	1	Arid or Semi-arid hydrologic unit - See the ORWAP Report's Hydrologic Landscape Class (under Location Information).	
		The AA is not in an Arid or Semi-arid hydrologic unit , but has persistent ponded water, no tributary, and is not fed by wastewater, concentrated stormwater, or irrigation water, or by an adjacent river or lake.	0		
		None of above is true, OR AA contains a hot spring. Some groundwater may nonetheless discharge to or flow through the wetland.	0		
F38	Unshaded Herbaceous Vegetation (Extent) (HerbExpos)	The annual maximum areal cover of herbaceous vegetation (excluding SAV, ferns, and mosses, but including forbs & graminoids) that is not beneath a woody canopy reaches:		Do <u>not</u> include submersed and floating-leaved aquatics (SAV) in the category of "herbaceous vegetation", or when defining the "vegetated part" of the site.	
		<5% of the vegetated part of the AA. Enter 1 and SKIP to F42.	0	For sites larger than 10 acres, this should be determined from aerial imagery rather than estimated in the field.	NoHerb
		5 to <25% of the vegetated part of the AA.	0		
		25 to <50% of the vegetated part of the AA.	0		
		50-95% of the vegetated part of the AA.	1	[WBF,WBN]	
		>95% of the vegetated part of the AA.	0		
F39	Forb Cover (Forb)	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs - are flowering non-woody vascular plants (excludes grasses, sedges, ferns, mosses).	
		<5% of the herbaceous part of the AA.	0	[POL]	
		5 to <25% of the herbaceous part of the AA.	0		
		25 to <50% of the herbaceous part of the AA.	0		
		50 to 95% of the herbaceous part of the AA.	1		
		>95% of the herbaceous part of the AA.	0		
F40	Species Dominance - Herbaceous (HerbDom)	Determine which <u>two native</u> herbaceous (forb, fern, and graminoid) species comprise the greatest portion of the herbaceous cover that is unshaded by a woody canopy. Then select one:		[INV,WBF,WBN,SBM,PD,POL,Sens,EC]	
		Those species together comprise <u>more than half</u> of the areal cover of <u>native</u> herbaceous plants at any time during the year, i.e., one dominant species or two co-dominants. Also mark this if <20% of the vegetated cover is native species.	1		
		Those species together comprise <u>less than half</u> of the areal cover of <u>native</u> herbaceous plants at any time during the year.	0		

F41	Invasive or Non-native - % of Vegetative Cover (Invas)	Vegetative cover (annual maximum) is:		In the <u>ORWAP SuppInfo</u> , see P_Invas worksheet for list of invasives and P_Exo for non-native species list. Examples of woody invasives are Himalayan blackberry, English ivy, scotch broom, and gorse. For known distributions of invasive plants in your area see: http://inr.oregonstate.edu/orbic/invasive-species and http://www.weedmapper.org/maps.html but do not limit your answer based only on that information. Consider most crops to be non-native. [PD,POL,Sens,EC]	InvasDom
		Overwhelmingly (>80% cover) non-native species AND <u>≥10%</u> of the herbaceous cover is <u>invasive species</u> . (See ORWAP SuppInfo file for species designations).	0		
		Overwhelmingly (>80% cover) non-native species AND <u>≤10%</u> of the herbaceous cover is <u>invasive species</u> ; OR 50-80% of cover is non-native species regardless of invasiveness.	0		
		Mostly (50-80%) native species.	1		
		Overwhelmingly (>80%) native species.	0		
F42	Mowing, Grazing, Fire (VegCut)	There is evidence that grazing by domestic or wild animals -- or mowing (multiple times per year), plowing, herbicides, harvesting, or fire -- has repeatedly reduced the AA's vegetation cover (plants that normally grows taller than 4") to <u>less than 4 inches</u> , or has created an obvious browse line, over the following extent:		Repeatedly - means the condition occurred in at least half of the last 10 years. [SR,AM,WBN,SBM,PD,EC]	NoMowGraze
		0% (No evidence of such activities).	0		
		Trace to 5% of the normally vegetated AA (grazing, mowing, or fire have occurred but vegetation height effects are mostly unnoticeable).	0		
		5 to <50% of the normally vegetated AA.	0		
		50 to 95% of the normally vegetated AA.	1		
		>95% of the normally vegetated AA.	0		
F43	Historically Lacking Trees (HistVeg)	According to the ORWAP Report, the <u>presettlement vegetation class</u> in the vicinity of the AA was prairie, sagebrush, or other open lands not dominated by trees. In addition, the AA is not within the biennial floodplain of a river where trees and shrubs typically dominate when conditions are unaltered. Enter 1, if true.	1	In the <u>ORWAP Report's</u> Location Information table. This question is used as a classification variable mainly to set appropriate expectations for the extent of forest cover. [INV,FA,FR,SBM,PD,EC,SENS]	HistOpenland
F44	Moss Wetland (Moss)	The AA's ground cover is primarily a deep layer of moss, and/or soils are mainly peat or organic muck. Also, the soil remains water-saturated to within 3 inches of the surface during most of a normal year. Surface water within the AA often is absent or confined to small scattered pools or ditches. Enter 1, if true.	0	Includes most bogs and fens. May be a floating island. [NR,CS,OE,WBF,WBN,Sens]	
F45	Woody Extent (WoodyPct)	Within the vegetated part of the AA, woody vegetation (trees, shrubs, robust vines) taller than 3 ft occupies:		Robust vines - include Himalayan blackberry and others that are generally erect and taller than 1 ft. Vegetated part - should not include floating-leaved or submersed aquatics. For sites larger than 1 acre, this should be determined from aerial imagery rather than estimated only in the field. [WS,NR,CS,SBM,PD,Sens]	NoWoody
		<5% of the vegetated AA, and fewer than 10 trees are present. Enter 1 and SKIP to F51.	0		
		<5% of the vegetated AA, but more than 10 trees are present.	0		
		5 to <25% of the vegetated AA.	1		
		25 to <50% of the vegetated AA.	0		
		50 to 95% of the vegetated AA.	0		
>95% of the vegetated part of the AA.	0				
F46	Woody Diameter Classes (TreeDiams)	Select All the types that comprise >5% of the woody canopy cover in the AA or >5% of its wooded upland edge if any:		Wooded upland edge - includes woody plants located within one tree-height of the wetland-upland boundary. DBH is the diameter of the tree measured at 4.5 ft above the ground. [CS,SBM,POL,Sens]	
		Deciduous 1-4" diameter (DBH) and >3 ft tall.	1		
		Evergreen 1-4" diameter and >3 ft tall.	0		
		Deciduous 4-9" diameter.	0		
		Evergreen 4-9" diameter.	0		
		Deciduous 9-21" diameter.	0		
		Evergreen 9-21" diameter.	0		
		Deciduous >21" diameter.	0		
		Evergreen >21" diameter.	0		
F47	Snags (Snags)	The number of large snags (diameter >12 inches) in the AA plus 100 ft uphill of its edge is:		Snags - are standing trees at least 20 ft tall that are mainly without bark or foliage. [SBM,POL]	
		Few or none.	1		

		Several.	0			
F48	Above-water Wood (WoodOver)	The number of horizontal wood pieces thicker than 4 inches that are <u>partly submerged</u> during most of the spring or early summer, thus <u>potentially serving as basking sites</u> for turtles, birds, or frogs and cover for fish is:		Only the wood that is at or above the water surface is assessed because of the impracticality of assessing underwater wood accurately when using a rapid assessment method.		
		None.	1			
		Few.	0	[FA,FR,AM]		
		Several (e.g., >3 per 300 ft of channel or shoreline).	0			
F49	Downed Wood (WoodDown)	The number of downed wood pieces longer than 6 ft and with diameter >4 inches that are not submerged during most of the growing season, is:		Exclude temporary "burn piles."		
		Few or none.	1	[INV,AM,SBM,POL]		
		Several.	0			
F50	Exposed Shrub Canopy (ShrExpos)	Within the vegetated part of the AA, shrubs shorter than 20 ft that are not overtopped by trees occupy: Select first statement that is true.		Vegetated part - should not include floating-leaved or submersed aquatics.		
		<5% of the vegetated AA and <0.01 acre (400 sq ft).	0	[SBM,PD]		
		5 to <25% of the vegetated AA or the water edge (whichever is greater in early summer).	1			
		25 to <50% of the vegetated AA or the water edge (whichever is greater in early summer).	0			
		50 to 95% of the vegetated AA or the water edge (whichever is greater in early summer).	0			
		>95% of the vegetated part of the AA or the water edge (whichever is greater in early summer).	0			
F51	N Fixers (Nfix)	The percentage of the vegetated area in the AA <u>or</u> along its water edge (whichever has more) that contains nitrogen-fixing plants (e.g., alder, baltic rush, scotch broom, lupine, clover, alfalfa, other legumes) is:		For a more complete list, see <u>ORWAP_SupplInfo</u> , worksheet NFIX (includes native and non-native species). Do not include algae.		
		<1% or none.	0			
		1 to <25%.	1	[OE,INV,Sens]		
		25 to <50%.	0			
		50 to 75%.	0			
		>75%.	0			
Note for the next four questions: If the AA lacks an upland edge, evaluate based on the AA's <u>entire perimeter</u> and outward into whatever areas are adjacent. In many situations, these questions are best answered by measuring from aerial images.						
F52	Upland Perennial Cover - % of Perimeter (PerimPctPer)	The percentage of the AA's <u>edge (perimeter)</u> that is comprised of a band of upland perennial cover wider than 10 ft and taller than 6 inches, during most of the growing season is:		Perennial cover - vegetation that includes wooded areas, native prairies, sagebrush, as well as relatively unmanaged commercial lands in which the ground is disturbed less frequently than annually such as perennial ryegrass fields, hayfields, lightly grazed pastures, timber harvest areas, and rangeland.		
		<5%.	0			
		5 to <25%.	1			
		25 to <50%.	0	It <u>does not</u> include water, row crops (vegetable, orchards, Christmas tree farms), residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads.		
		50 to <75%.	0	[WCv,SRv,PRv,INV,FA,AM,WBF,WBN,SBM,PD,POL,Sens,STR]		
		75 to 95%.	0			
		>95%.	0			
F53	Upland Perennial Cover - Width (Buffer) (BuffWidth)	Along the greatest extent of the AA's <u>upland edge</u> , the width of perennial cover taller than 6 inches that extends upslope from the AA until mostly shorter or non-perennial cover is reached is: [Note: the width is not necessarily the maximum width. Base on vegetation that occurs most of the growing season.]		Upland edge - is the land within 3 ft of the wetland's perimeter that is not wetland.		
		< 5 ft, or none.	0	[WCv,SRv,PRv,INV,FA,AM,WBN,SBM,PD,POL,Sens,STR]	NoUpPerCov	
		5 to <30 ft.	0			
		30 to <50 ft.	0			
		50 to <100 ft.	0			
		100 to 300 ft.	0			

		> 300 ft.	1		AllUpPerren
F54	Upland Trees as % of All Perennial Cover (UpTreePctPer)	Within 100 f.t landward from the AA's <u>edge (perimeter)</u> , the percentage of the upland perennial cover that is woody plants taller than 20 ft is:		Base this on the cumulative canopy width of the trees.	
		<5%, or there is no upland perennial cover along the upland edge.	0	[WSv,FA,WBF,WBN,SBM]	
		5 to <25% of perennial cover.	0		
		25 to <50% of perennial cover.	0		
		50 to <75% of perennial cover.	1		
		75 to 95% of perennial cover.	0		
		>95% of perennial cover.	0		
F55	Weeds - % of Upland Edge (UpWeed)	Along the AA's <u>edge (perimeter)</u> , the cover of <u>invasive woody or herbaceous plants</u> occupies: [If vegetation is so senesced that apparently-dominant edge species cannot be identified even to genus, answer "none"].		See <u>ORWAP_SupplInfo</u> file, worksheet P_Invas.	
		<5%, or none.	0	Some of the most common invaders along upland edges of Oregon wetlands are Himalayan blackberry, knotweed, sweetbrier rose, Russian olive, English ivy, nightshade, pepperweed, medusahead, white clover, ryegrass, quackgrass, false brome, bentgrass, dandelion, oxeye daisy, pennyroyal, bull and creeping thistles, tansy ragwort, poison hemlock, and teasel. If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an invasive species, assume the unidentified plant to also be invasive.	
		5 to <25%.	0		
		25 to <50%.	1		
		50 to <75%.	0		
		75 to 95%.	0		
		>95%.	0	[PD,STR]	
F56	Bare Ground & Accumulated Plant Litter (Gcover)	Consider the parts of the AA that go dry during a normal year. Viewed from <u>6 inches above the soil surface</u> , the condition in most of that area just before the year's longest inundation period begins is:		Bare ground- includes unvegetated soil, rock, sand, or mud between stems if any. Bare ground under a tree or shrub canopy should be counted.	
		Little or no (<5%) bare ground is visible between erect stems or under canopy <u>and</u> there is little or no dead detached plant tissue (thatch) remaining on top of the ground surface <u>and</u> ground surface is extensively blanketed by moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	Wetlands that are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season.	
		Some (5-20%) bare ground or remaining thatch is visible. Herbaceous plants have moderate stem densities and do not closely hug the ground.	0	[WS,WC,SR,PR,NR,CS,OE,INV,AM,SBM,POL,Sens,EC]	
		Much (20-50%) bare ground or thatch is visible. Low stem density and/or tall plants with little living ground cover during early growing season.	0		
		Mostly (>50%) bare ground or thatch.	0		
		Not applicable. All of the AA is inundated throughout most years.	0		
F57	Ground Irregularity (Girreg)	In parts of the AA that lack persistent water, the number of small pits, raised mounds, hummocks, boulders, upturned trees, animal burrows, islands, natural levees, wide soil cracks, and microdepressions is:		Microtopography - refers mainly to vertical relief of <3 ft and is represented only by inorganic features, except where plants have created depressions or mounds of soil.	
		Few or none, or the entire AA is always water-covered. Minimal microtopography ; <1% of the AA, e.g., many flat sites having a single hydroperiod.	1	Consider the microtopography to be " <u>few or none</u> " if one could walk easily through most of the AA once any slash and logs are removed. Consider it to be " <u>several</u> " if one has to constantly look down and check balance.	
		Intermediate.	0		
		Several (extensive micro-topography).	0	[WS,SR,PR,NR,INV,AM,SBM,PD,POL,EC]	
F58	Soil Composition (SoilTex)	Based on digging into the substrate and examining the <u>surface layer</u> of the soil (2 inch depth) that was mapped as being predominant, its composition (excluding duff and living roots) is mostly:		Do not base the texture on soil maps unless the AA is inaccessible. See <u>ORWAP Manual's</u> protocol (Step 7, pg 33) and chart (Appendix A, pg 52).	
		Loamy: includes silt, silt loam, loam, sandy loam.	1	Judge which soil type is predominant <u>only in the part of the AA that is not inundated</u> at the time of your visit.	
		Clayey: includes clay, clay loam, silty clay, silty clay loam, sandy clay, sandy clay loam.	0	Duff - is loose organic surface material, e.g., dead plant leaves and stems).	
		Organic: includes muck, mucky peat, peat, and mucky mineral soils (blackish or grayish). Exclude live roots unless they are moss.	0	Organic soils are much less common in floodplains.	
		Coarse: includes sand, loamy sand, gravel, cobble, stones, boulders, fluvents, fluvaquents, riverwash.	0	[WS,PR,NR,CS,OE,PD,Sens]	

F59	Cliffs or Banks (Cliff)	Within 300 ft of the AA, there are elevated terrestrial features such as cliffs, bluffs, talus slopes, or unarmored stream banks that extend at least 6 ft nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1, if true.	0	[SBM,POL]		
F60	Restored or Created Wetland (NewWet)	The AA is (or is within, or contains) a "new" wetland resulting from human actions (e.g., excavation, impoundment) or other factors affecting what was upland (non-hydric) soil. Or, some part of the AA was originally a wetland, was artificially drained for many years, and has since had its water regime partly or wholly restored or rehabilitated (e.g., by ditch plugs, berms, tile breakage, non-maintenance).		Include wetlands whose area was likely expanded by road berms which impeded runoff, but do not include wetlands created by beaver dams except for the part where flooding affected uplands (not just existing wetlands and streams). Determine this using historical aerial photography, old maps, soil maps, consultation with landowners, and/or permit files as available.		
		Yes, and constructed or restored mostly within last 3 years.	0	See ORWAP Map Viewer for hydric soil map. Also, locations of some restoration wetlands can be found by going to the ORWAP Map Viewer" layers under Restoration.		
		Yes, and constructed or restored mostly 3-7 years ago.	0	Another potential source is the Conservation Registry: http://or.conservancyregistry.org/ .		
		Yes, and constructed or restored mostly > 7 years ago.	0			
		Yes, but time of origin or restoration unknown.	0			
		No.	1	[NR,CS,OE,PD,Sens]		NotNewWet
F61	Ownership (Ownership)	Most of the AA is:		An initial indication of ownership can be found on the ORWAP Map Viewer under the Land Ownership layer. However, it is advisable to ask local sources or use local maps with higher precision.		
		Publicly owned (municipal, county, state, federal).	0			
		Owned by non-profit conservation organization or easement holder who allows public access to this AA.	0	[PUV]		
		Other private ownership, including tribal. Enter 1 and SKIP to F63.	1			PrivateOwn
F62	Special Protected Area Designation (Desig)	The AA is part of an area designated as a BLM Area of Critical Environmental Concern (ACEC) or Outstanding Natural Area (ONA), Federal Research Natural Area (RNA) or Special Interest Area (SIA), or Natural Heritage Conservation Area (NHCA). Enter 1, if true.	0	[PUV]		
F63	Conservation Investment (ConsInvest)	The AA is not a mitigation wetland, but public funds or community volunteer efforts have been applied to preserve, create, restore, or enhance the condition or functions of the wetland. (e.g. CRP or WRP wetlands, community projects). Enter 1, if true. (If unknown, leave 0).	0	Locations of some restoration wetlands can be found on the ORWAP Map Viewer under the Restoration heading. Another potential source is the Conservation Registry : http://or.conservancyregistry.org/ [PUV]		
F64	Compensation Wetland (MitWet)	The AA is all or part of a compensation site used explicitly to offset impacts elsewhere. Enter 1, if true. (If unknown, leave 0).	0	Answer to the best of your knowledge. Sources for information include the property owner, DSL, and/or the ACOE. [PUV]		
F65	Sustained Scientific Use (SciUse)	Plants, animals, or water in the AA have been monitored for >2 years, <u>unrelated to any regulatory requirements, and data are available to the public.</u> Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Enter 1, if true. (If unknown, leave 0)	0	[PUV]		
F66	Visibility (Visibil)	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 300 ft of the AA (select one) is:		[WBFv,WBNv,SBMv,PUV,STR]		
		<25%.	0			
		25 - 50%.	0			
		>50%.	1			
F67	Non-consumptive Uses - Actual or Potential (RecPoten)	Select all statements that are true of this AA as it currently exists:		The question assumes access is allowed.		
		Walking is physically possible in >5% of the AA during most of year (e.g., free of deep water and dense shrub thickets).	1	[PUV]		
		All or part of the AA (or an area within sight of the AA and within 100 ft) would be physically accessible to people in wheelchairs (e.g., paved and flat).	0			
		Maintained roads, parking areas, or foot-trails are within 30 ft of the AA, or the AA can be accessed most of the year by boat.	0			
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0			

F68	Core Area 1 (VisitNo)	The percentage of the AA almost never walked or driven by humans during an average growing season probably comprises: [Note: If more than half the wetland is visible from areas within 100 ft of the AA, include visits by people to those areas that are actually walked or driven (not simply viewed from).]		Judge this based on proximity to population centers, roads, trails, accessibility of the AA to the public, wetland size, usual water depth, and physical evidence of human visitation. Exclude visits that are not likely to continue and/or that are not an annual occurrence (e.g., by construction, maintenance, or monitoring crews).		
		<5% and no inhabited building is within 300 ft of the AA.	0			
		<5% and inhabited building is within 300 ft of the AA.	1	[AM,WBF,WBN,SBM,PD,PUv,STR]		
		5 to <50% and no inhabited building is within 300 ft of the AA.	0			
		5 to <50% and inhabited building is within 300 ft of the AA.	0			
		50 to 95% with or without inhabited building nearby.	0			
		>95% of the AA with or without inhabited building nearby.	0			
F69	Core Area 2 (VisitOften)	The part of the AA visited by humans <u>almost daily for several weeks</u> during an average growing season probably comprises: [The Note in the preceding question applies here as well].		See note above.		
		<5%.	0	[AM,WBF,WBN,SBM,PD,PUv,STR]		
		5 to <50%.	0			
		50 to 95%.	1			
		>95% of the AA.	0			
F70	Consumptive Uses (Provisioning Services) (Hunt)	Recent evidence was found <u>within the AA</u> of the following potentially-sustainable consumptive uses. Select All that apply.		Evidence of these consumptive uses may consist of direct observation, or presence of physical evidence (e.g., recently cut stumps, fishing lures, shell cases), or might be obtained from communication with the land owner or manager.		
		Low-impact commercial timber harvest (e.g., selective thinning).	0			
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0			
		Waterfowl hunting.	0	[FRv,WBFv,PUv]		
		Fishing.	0			
		Trapping of furbearers.	0			
		None of the above.	1			
F71	Domestic Wells (Wells)	Wells or water bodies that currently provide drinking water are:		Assume there are (when unknown), if there is an inhabited structure within the specified distance and the neighborhood is known to not be connected to a municipal drinking water system (e.g., is outside an urban growth boundary or other densely settled area).		
		<300 ft and downslope from the AA or at same elevation.	0			
		300 - 1500 ft and downslope or at same elevation.	0			
		>1500 ft downslope, or none downslope, or no information.	1	[NRv]		

F72	Wetland Type of Conservation Concern (RareType)	Does the AA contain, or is it part of, any of these wetland types? Select <u>All</u> that apply.	W	Consult the <u>ORWAP Report</u> under the Location Information table for "Rare Wetland Type (within 1 mile)". But be aware that it may not apply to the exact AA you have delimited. [PDv]		
		Mature forested wetland (anywhere): a wetland in which mean diameter of trees (d.b.h., FACW and FAC species only) exceeds 18 inches, <u>and/or</u> the average age of trees exceeds 80 years, <u>or</u> there are >5 trees/acre with diameter >32 inches.	0	To qualify, the diameter of >18 inches must be the mean measured from at least 10 trees. [PDv]		
		Bog or Fen : contains a sponge-like organic soil layer which covers most of the AA and often has extensive cover of sedges and/or broad-leaved evergreen shrubs (e.g., Ledum). Often lacks tributaries, being fed mainly by groundwater and/or direct precipitation.	0	[CS,Sens]		
		Playa, Salt Flat, or Alkaline Lake : a nontidal ponded water body usually having saline (salinity >1 ppt or conductivity >1000 µS) or alkaline (conductivity >2000 µS and pH >9) conditions and large seasonal water level fluctuations (if inputs-outputs unregulated). If a playa or salt flat, vegetation cover is sparse and plants typical of saline or alkaline conditions (e.g., Distichlis, Atriplex) are common.	0	See <u>ORWAP SuppInfo</u> file, worksheet P_Salt for species typically occurring in tidal or saline conditions. [PR, CS, INV ,FA, FR, AM, WBF]	Playa	
		Hot spring (anywhere in Oregon): a wetland where discharging groundwater in summer is >10 degrees (F) warmer than the expected water temperature.	0	[FA]		
		Native wet prairie (west of the Cascade crest): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, and dominated primarily by native graminoids often including species in column E.	0	Deschampsia caespitosa, Danthonia californica, Camassia quamash, Tritoleia hyacinthina, Carex densa, C. aperta, and/or C. unilateralis [PDv,ECC]		
		Vernal pool (Willamette Valley): a seasonally inundated wetland, underlain by hardpan or claypan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and with native plant species distinctly different from those in slightly higher areas, and often including species in column E.	0	Downingia elegans, Isoetes nuttallii, Tritoleia hyacinthina, Eleocharis spp., Eryngium petiolatum, Plagiobothrys figuratus, Plagiobothrys scouleri, Grindelia nana, Veronica peregrina, Lasthenia glaberrima, Cicendia quadrangularis, Kickxia elatine, Gnaphalium palustre, and/or Callitriche spp.[PDv]		
		Vernal pool (Medford area): a seasonally inundated acidic wetland, underlain by hardpan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and having concentric rings of similar native vegetation, often including species in column E.	0	Downingia vina, Isoetes nuttalli, Pilularia americana, Tritoleia hyacinthina, Eleocharis spp., Eryngium petiolatum, Plagiobothrys brachteatus, Plagiobothrys scouleri, Grindelia nana, Veronica peregrina, Alopecurus saccatus, Lasthenia californica, Deschampsia danthonioides, and/or Callitriche spp. [PDv]		
		Vernal pool (Modoc basalt & Columbia Plateau): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located on shallow basalt bedrock and often having species in column E.	0	Blennosperma nanum, Camassia quamash, Epilobium densiflorum, Callitriche marginata, Cicendia quadrangularis, Eryngium vaseyi, Psilocarphus brevissimus, and/or Sedella pumila. [PDv]		
		Interdunal wetland (Coastal ecoregion): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located between sand dunes where wind has scoured the sand down to the water table (deflation plain, blowout pond), and often with significant cover of the native species in column E.	0	Carex obnupta, Argentina egedii, Juncus lesueurii, J. nevadensis, J. falcatus, Sisyrrinchium californicum, and/or Salix hookeriana [PDv]		
Ultramafic soil wetland (mainly southwestern Oregon): a low-elevation wetland, usually with a sponge-like organic soil layer, occurring in an area with exposed serpentine or peridotite rock, and/or in soils with very low Ca:Mg ratios.	0					
None of above.	1					

Date:		Name:		Site:		
Tidal Data Form T ORWAP V 3.1		Conduct an assessment <u>only after reading the accompanying Manual and explanations in column E below.</u> For each affirmative answer, change the 0 in the "Data" column to a "1". Answer all items except where directed to skip to others. Questions whose cells in "Data" column have a "W" MUST be answered only for the ENTIRE wetland and bordering waters.		For a list of functions to which each question pertains, see bracketed codes in column E. Codes for functions and their benefits are: WS= Water Storage, WC= Water Cooling, SR= Sediment Retention, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Export, INV= Invertebrates, FA= Anadromous Fish, FR= Resident Fish, AM= Amphibians, WBF= Feeding Waterbirds, WBN= Nesting Waterbirds, SBM= Songbirds, Mammals, & Raptors, POL= Pollinators, PH= Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sens= Sensitivity, STR= Stressors.		For guidance and detailed descriptions of how Excel calculates the numbers in the Scores worksheet, see the Technical Supplement and Appendix B of the Manual. For a documented rationale for each indicator, open each of the worksheet tabs at the bottom (one for each function or value) and see column H.
#	Indicators	Condition Choices	Data	Explanations, Definitions (Column E)	Comments	
	Tidal Wetland (TidalT)	This is a tidal wetland (either freshwater or saltwater). Enter 1, if true and continue.	0	Tidal wetland - a wetland that receives tidal water at least once during a normal year, regardless of salinity, and dominated by emergent or woody vegetation. Tidal flooding occurs on a 6-hour cycle DURING THE TIME it is flooded by tide, which may be as infrequent as once per year. If NWI map shows the wetland with a code beginning with E (for estuarine), assume the wetland to be tidal. However, some wetlands lacking that code are also tidal.		
T1	Estuarine Position (EstPosT)	The AA's relative position in the estuary is:		For head-of-tide, review the <u>ORWAP Map Viewer's</u> Headtide (2007) layer (under Water Source & Quality) or check with local sources.		
		Lower 1/3 (often on a bay and distant from the head-of-tide of a major river; includes most saline tidal wetlands).	0			
		Mid 1/3.	0	[PR,NR,CS,OE,PD]		
		Upper 1/3 (near the head-of-tide of a major river; includes most brackish and fresh tidal wetlands).	0			
T2	Salinity (SalinT)	At high tide during most of the year, the daily salinity in most of the inundated part of the AA is:		Saline or brackish conditions are commonly indicated by a prevalence of particular plant species. Consult the <u>ORWAP_SupplInfo</u> file's P_Salt worksheet.		
		Saline (>25 ppt salinity, undiluted seawater).	0			
		Moderately saline (5 to 25 ppt salinity).	0	Also refer to <u>Estuary Salinity maps</u> (see link in ORWAP Map Viewer report under the Location Information table), or DSLI's ORWAP web site, or obtain salinity data from the <u>ODEQ LASAR web site</u> or local sources.		
		Brackish (0.5 to <5 ppt salinity, "oligohaline").	0	However, salinity in estuaries can vary tremendously depending on river discharge and other factors.		
		Fresh (<0.5 ppt salinity).	0	[SR,PR,NR,CS,OE,SBM,PD]		
		Unknown.	0			
T3	Low Marsh (LowMarshT)	The percent of the vegetated part of the AA that is " low marsh " (covered by tidal water for part of almost every day) is:		Include any natural channels within the marsh that are inundated at least once daily by tide. For plant indicator species, see file <u>ORWAP_SupplInfo</u> file's worksheet P_LowTidal.		
		None, or <1%.	0			
		1 to <10%.	0	[SR,PR,CS,OE,INV,FA,WBF,SBM,PD,POL]		
		10 to <25%.	0			
		25 <50%.	0			
		50 to <75%.	0			
		75 to 90%.	0			
		>90%.	0			
T4	Width of Vegetated Zone at Daily High Tide (WidthHiT)	At average daily HIGH tide condition, the width of the vegetated wetland that separates adjoining uplands (if any) from subtidal water within or adjoining the AA, is predominantly:		Vegetated wetland in this case does not include underwater or floating-leaved plants (i.e., aquatic bed). Measure the width perpendicular to the open water part. For <u>most sites larger than 5 hectares</u> and with persistent water, measure the width using aerial imagery rather than estimating in the field.		
		<5 ft, or no vegetation between upland and subtidal water.	0			
		5 to <30 ft.	0			
		30 to <50 ft.	0			
		50 to <100 ft.	0	[SR,PR,NR,CS,OE,FA,SBM,PD,POL]		
		100 to 300 ft.	0			
		> 300 ft.	0			

T5	Width of Vegetated Zone at Daily Low Tide (WidthLoT)	At average daily <u>LOW</u> tide condition, the width of the vegetated wetland that separates adjoining uplands (if any) from subtidal water within or adjoining the AA, is predominantly:		[SR,PR,NR,CS,OE,FA,WBF,Sens]
		<5 ft. or no vegetation between upland and subtidal water.	0	
		5 to <30 ft.	0	
		30 to <50 ft.	0	
		50 to <100 ft.	0	
		100 to 300 ft.	0	
		> 300 ft.	0	
T6	Internal Gradient (GradientT)	Within the AA, the gradient from the upland boundary (or part closest to it) and the lowest point in the AA is:		Estimate as the elevation difference between the inlet and outlet (if any) divided by the distance between them, or the difference between the highest and lowest points in the wetland divided by the distance between them.
		<2% (internal flow is absent or barely detectable; basically flat).	0	
		2 to <5%.	0	[OE]
		5 to 10%.	0	
		>10%.	0	
T7	Outflow Duration (OutDuraT)	The most durable surface water connection (outlet channel, ditch, tidegate, pipe, overbank water exchange) between the AA and marine waters, which allows fish passage, is:	W	A larger difference in elevation between the wetland-upland boundary and the bottom of the wetland outlet (if any) indicates shorter outflow duration.
		Regular (nearly all of the daily high tides, >9 months/year).	0	
		Seasonal (14 days to 9 months/year, not necessarily consecutive, at least monthly).	0	Do not rely only on topographic maps or NWI maps to show this; inspect while in field if possible, and ask landowner. The durations given are only approximate and are for a "normal" year.
		Temporary (mainly during "king tide", "spring tide", or peak discharge flow in an associated river; <14 days per year, not necessarily consecutive).	0	The connection need not occur during the growing season.
		No tidal connection allows fish passage between marine waters and the AA.	0	[OE,FA]
T8	Outflow Confinement (ConstricT)	In the places where tidal water exits the AA after an average daily high tide, it is:	W	Impeded means causing a delay or reduction in water velocity or volume.
		Impeded partially by a pipe, culvert, narrowly breached dike, berm, beaver dam, or other obstruction (other than natural topography).	0	[OE]
		Not impeded by anything other than (possibly) natural topography.	0	
		Exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet.	0	
T9	Blind Channels - total length and branching (BlindChT)	Within the intertidal part of the AA, the approximate density of tidal channels that remain wetted during low tide on most days of the year (i.e., MLLW) is:		MLLW - mean lower low water
		<100 linear ft per acre, or none, or all have been artificially straightened.	0	[OE,INV,FA,WBF,PD]
		100-1000 linear ft per acre, and most tidal channels are unbranched.	0	
		100-1000 linear ft per acre, and most tidal channels are branched.	0	
		>1000 linear ft per acre and most tidal channels are unbranched.	0	
		>1000 linear ft per acre and most tidal channels are branched.	0	
T10	Tidal-Nontidal Hydro-connectivity (TnonT)	This tidal wetland is : Select first one that applies.		Palustrine does not include a river or lake.
		Adjacent to a nontidal palustrine wetland that contains surface water at least seasonally. Anadromous fish can access both wetlands during spring. Mostly <u>not</u> separated by a dike or other barrier.	0	[OE,INV,FA,WBF,SBM,PD]
		Adjacent to a nontidal palustrine wetland that contains surface water at least seasonally. Anadromous fish can access both wetlands during spring. Mostly <u>separated</u> by a dike, road, or other partial barrier.	0	
		Adjacent to a nontidal palustrine wetland that contains surface water at least seasonally. Anadromous fish <u>cannot</u> access both wetlands during spring.	0	
		Not adjacent to a nontidal palustrine wetland that contains surface water. Has a freshwater tributary that allows fish passage during the springtime to a nontidal wetland <u>< 1 mile</u> upstream.	0	
		Not adjacent to a nontidal palustrine wetland that contains surface water. Has a freshwater tributary that allows fish passage during the springtime to a nontidal wetland <u>> 1 mile</u> upstream.	0	
		Not adjacent to a nontidal palustrine wetland that contains surface water. <u>Lacks</u> a freshwater tributary that provides fish access to an upstream wetland that contains surface water at least seasonally.	0	

T11	Gradient of nontidal Input Channel (SlopeInChanT)	The gradient of the largest nontidal freshwater input tributary or ditch, averaged 150 f. from where it enters the AA, is:		[OE]	
		<1%.	0		
		1 to <3%	0		
		3 to 6%	0		
		>6%	0		
T12	Waves (WavesT)	Which of the following is MOST true:		Erosive wave conditions often occur where adjoining open water has a fetch (uninterrupted distance) of greater than approximately 1 mile in the direction of the strongest and most frequent wind.	
		Wind or boats frequently generate waves of >1 ft. near the AA, those waves are intercepted by the wetland, and structures behind the AA are protected from wave erosion.	0	[SR,PR,OE]	
		Wind or boats frequently generate waves of >1 ft. near the AA, those waves are intercepted by the wetland, but there are no structures behind the wetland.	0		
		Neither wind nor boats frequently generate waves of >1 ft near the AA.	0		
T13	Shorebird Feeding Area (ShorebdT)	The extent of mudflats or shortgrass meadows within the AA that meet the definition of shorebird habitat (column E) for at least 3 months during the period of late summer through the following May is:		Shorebird habitat areas must have (a) grasses shorter than 6 inches or a mudflat, AND (b) soils that either are saturated or covered with <2 inches of water, AND (c) no detectable surrounding slope (e.g., not the bottom of an incised dry channel), AND (d) not shaded by shrubs or trees. This addresses needs of most migratory sandpipers, plovers, curlews, and godwits.	
		None, or <100 sq. ft.	0		
		100 to <1000 sq. ft. within AA.	0		
		1000 to 10,000 sq. ft. within AA.	0	[WBF]	
		>10,000 sq. ft within AA.	0		
T14	Waterborne Pests (AqPestT)	Select only the first statement that is true:		[INV]	
		Non-native invertebrates (e.g., New Zealand mudsnail, mitten crab, rusty crayfish, oyster drill) are known to be present in the AA or in connected waters within 300 ft.	0		
		A regularly-used boat dock is present within or contiguous to the AA.	0		
		A regularly-used boat dock is not within the AA, but there is one within 300 ft of the AA and there is a persistent or tidal surface connection between the dock and the AA.	0		
		Large ships that empty ballast water are regularly present in nearby contiguous waters.	0		
	None of the above.	0			
T15	Overhanging Vegetation at High Tide (ShadeHiT)	At average daily <u>high tide</u> , the percentage of the AA's <u>water surface</u> that is overhung by vegetation within the AA is:		[OE,FA]	
		<5%, or no water is present in the AA at average daily high tide.	0		
		5 to <25%.	0		
		25 to <50%.	0		
		50 to 95%.	0		
		>95%.	0		
T16	Overhanging Vegetation at Low Tide (ShadeLoT)	At average daily <u>low tide</u> , the percentage of the AA's <u>water surface</u> that is overhung by vegetation within the AA is:		[OE,INV,FA]	
		<5%, or no water remains in the AA at low tide.	0		
		5 to <25%.	0		
		25 to <50%.	0		
		50 to 95%.	0		
		>95%.	0		
T17	Vegetation Forms Significantly Present (VegformsT)	The living vegetation forms that comprise >5% of the AA's vegetative cover in late summer is: Select all that apply.		[CS,OE,WBF,SBM,Sens]	
		Macroalgae (seaweed).	0		
		Eelgrass.	0		
		Graminoids (other than eelgrass).	0		
		Forbs.	0		
		Shrubs and/or trees.	0		
T18	Vegetation Form-Predominant	The living vegetation form that occupies the <u>largest part</u> of the AA's vegetative cover in late summer is:		[CS,OE]	

	(VegFormDomT)	Macroalgae (seaweed).	0		
		Eelgrass.	0		
		Graminoids (other than eelgrass).	0		
		Forbs.	0		
		Shrubs and/or trees.	0		
T19	Vegetation Form Diversity (VegFormDivT)	From the above list, the number of macrophyte groups that comprise >5% of the vegetated area in the specified zone during late summer is:		[INV,PD]	
		one.	0		
		2 or 3.	0		
		>3.	0		
T20	Species Dominance (VegSpDomT)	Within the form identified as the predominant macrophyte, the 2 most common native species together comprise:		[INV,SBM,PD,POL,Sens]	
		<20% of the AA's vegetated area (most species-rich, no dominants or co-dominants).	0		
		20 to <40% of the AA's vegetated area.	0		
		40 to <60% of the AA's vegetated area.	0		
		60 to 80% of the AA's vegetated area.	0		
		>80% of the AA's vegetated area (monotypic or nearly so).	0		
T21	Emergent Plants -- Area (EmAreaT)	For the wetland as a whole, emergent plants cumulatively occupy an annual maximum of:	W	Emergent - erect herbaceous or woody plants whose roots and/or foliage are inundated by tide at least once daily, on the average. If in multiple small patches are separated by less than 150 ft, they may be combined when evaluating this question.	
		<0.01 acre (< 400 sq.ft) or none.	0		
		0.01 to <0.10 acres (3,920 sq. ft).	0		
		0.10 to <0.50 acres (21,340 sq. ft).	0	[WBF,SBM,PD]	
		0.50 to <1 acres.	0		
		1 to <5 acres.	0		
		5 to <50 acres.	0		
		50 to <640 acres (1 sq. mi).	0		
		640 to <1000 acres .	0		
		1000 to 2500 acres.	0		
		>2500 acres (>4 sq.mi).	0		
T22	Forb Cover (ForbT)	Within parts of the AA that have herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Tidal wetland forbs include <i>Salicornia</i> spp., <i>Grindelia</i> spp., and other flowering plants.	
		<5% of the herbaceous part of the AA.	0	[POL]	
		5 to <25% of the herbaceous part of the AA.	0		
		25 to <50% of the herbaceous part of the AA.	0		
		50 to 95% of the herbaceous part of the AA.	0		
		>95% of the herbaceous part of the AA.	0		
T24	Invasive or Non-native % of Herbaceous Area (InvasT)	The maximum annual areal cover of herbaceous plants is:		Among the more common invaders in or near tidal wetlands of the Oregon Coast are creeping bentgrass (<i>Agrostis stolonifera</i>), reed canarygrass (<i>Phalaris arundinacea</i>), brass-buttons (<i>Cotula coronopifolia</i>), and Japanese eelgrass (<i>Zostera japonica</i>) (Adamus 2005, Weillhoefer et al. 2013).	
		Mostly (>50% cover) non-native species AND >10% of the herbaceous cover is invasive species.	0	In the QRWAP SupplInfo file , see P_Invas worksheet for full list of Oregon invasives and see P_Exo for non-native species list.	
		Mostly (>50% cover) non-native species AND <10% of the herbaceous cover is invasive species.	0	[PD,Sens,EC]	
		Mostly (50-80% cover) native species.	0		
		Overwhelmingly (>80% cover) native species.	0		

T25	Driftwood (DriftwoodT)	The extent of driftwood on the land surface is:		[INV,SBM]	
		None or little.	0		
		Intermediate (~ 1 piece/200 ft. of shoreline, or >1,000 square feet).	0		
		High (>1 piece/100 ft. of shoreline, or >1,000 square feet).	0		
T26	Large Woody Debris (LwdT)	Within the part of the AA and its internal channels that remain underwater during daily low tide, the extent of fish cover provided at that time by partly submerged vegetation, inchannel pools, incised banks, and pieces of wood (thicker than 6 inches and longer than 4 feet, or smaller pieces in dense accumulations) is:		[INV,FA]	
		None or few.	0		
		Intermediate.	0		
		Many (>1 piece per 5 acres or per 10 channel widths).	0		
Note for the next four questions: If the AA lacks an upland edge, evaluate based on the AA's <u>entire</u> perimeter, and moving outward into whatever areas are adjacent. In many situations, these questions are best answered by measuring from aerial images and/or topographic maps.					
T27	Upland Perennial Cover - % of AA's Edge (PerimPctPerT)	The percentage of the AA's <u>edge (perimeter)</u> that is comprised of a band of upland perennial cover wider than 10 ft and taller than 6 inches during most of the growing season is:		Perennial cover is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground is disturbed less frequently than annually such as perennial ryegrass fields, hayfields, lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, row crops (vegetable, orchards, Christmas tree farms), residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads.	
		<5%.	0		
		5 to <25%.	0		
		25 to <50%.	0		
		50 to <75%.	0		
		75 to 95%.	0		[FA,SBM,PD]
		>95%.	0		
T28	Upland Perennial Cover - Width (Buffer) (BuffWidthT)	Along the <u>greatest portion</u> of the AA's <u>upland edge</u> , the width (not necessarily the maximum width) of perennial cover taller than 6 inches during most of the growing season and extending upslope from the AA until mostly shorter or non-perennial cover is reached is:		[FA,SBM,PD]	
		< 5 ft, or none.	0		
		5 to <30 ft.	0		
		30 to <50 ft.	0		
		50 to <100 ft.	0		
		100 to 300 ft. IF #T27 also was answered >95%, enter 1 and SKIP to T30.	0		
		> 300 ft. IF #T27 also was answered >95%, enter 1 and SKIP to T30.	0		
T29	Type of Non-Perennial Cover in Buffer (ImpervBufft)	Within 300 ft. upslope of the AA's <u>upland edge</u> , the area that is NOT perennial cover is mostly: Select only ONE		[FA]	
		Impervious surface (e.g., paved road, parking lot, building, exposed rock).	0		
		Bare pervious surface (e.g., recent clearcut, landslide, unpaved road, dike, dunes).	0		
		Artificially landscaped or heavily grazed areas, lawn, annual crops.	0		
		Other type of non-perennial cover.	0		
T30	Slope from Disturbed Lands (SlopeBufft)	The percent slope of the land between the AA and the most extensive disturbed upslope area (i.e., unvegetated or non-perennial cover) is mostly:		[SRv, PRv, NRv, SEN]	
		<1% (flat -- almost no noticeable slope).	0		
		2-6%.	0		
		7-10%.	0		
		11-30%.	0		
		>30%.	0		

T31	Mowing or Grazing (VegCutT)	There is evidence that grazing by domestic or wild animals -- or mowing (multiple times per year), plowing, herbicides, or harvesting -- has repeatedly reduced the AA's vegetation cover (plants that normally grows taller than 4 inches) <u>to less than 4"</u> over the following extent:		Repeatedly means the condition occurred in at least half of the last 10 years. [EC]	
		0% (such activities are absent).	0		
		1 to <5% of the AA (grazing or the other activities occur but vegetation height effects are mostly unnoticeable).	0		
		5 to <50%.	0		
		50 to 95%.	0		
>95%.	0				
T32	Bare Ground & Accumulated Plant Litter (GcoverT)	Viewed from <u>6 inches</u> above the soil surface, the condition in most of the tidal wetland is:		Bare ground includes unvegetated soil, rock, sand, or mud between stems if any. Bare ground that is present under a tree or shrub canopy should be counted. Wetlands that are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [SR,PR,NR,CS,OE,INV,SBM,Sens]	
		Little or no (<5%) bare ground is visible between erect stems or under canopy and there is little or no dead detached plant tissue (thatch) remaining on top of the ground surface and ground surface is extensively blanketed by graminoids with great stem densities or by plants with ground-hugging foliage.	0		
		Some (5-20%) bare ground or remaining thatch is visible. Herbaceous plants have moderate stem densities and do not closely hug the ground.	0		
		Much (20-50%) bare ground or thatch is visible. Low stem density and/or tall plants with little living ground cover during early growing season.	0		
		Mostly (>50%) bare ground or thatch.	0		
Not applicable. Nearly all of the AA remains inundated even at daily low tide.	0				
T33	Ground Irregularity (GirregT)	In the <u>high marsh</u> (flooded less than daily), the number of small pits, raised mounds, hummocks, boulders, upturned trees, islands, natural levees, wide soil cracks, and microdepressions is:		Microtopography refers mainly to vertical relief of <3 ft and is represented only by inorganic features, except where plants have created depressions or mounds of soil. Consider the microtopography to be " <u>few or none</u> " if one could walk easily through most of the AA once any slash and logs are removed. Consider it to be " <u>several</u> " if one has to constantly look down and check balance. [PD]	
		Few or none (minimal microtopography ; <1% of the area that isn't persistently inundated); e.g., many flat sites having a single hydroperiod.	0		
		Intermediate.	0		
		Several (extensive micro-topography).	0		
T34	Soil Composition (SoilTexT)	Based on at least three pits you dig at points about equidistant across the AA, the composition of the surface layer of the soil (2" depth) (but excluding the duff layer) is mostly:		Do not base the texture on soil maps unless the AA is inaccessible. In the <u>ORWAP Manual</u> , see protocol (Step 7, pg 33) and chart (Appendix A, pg 52). Duff is loose organic surface material, e.g., dead plant leaves and stems. Organic soils are much less common in floodplains. [PR,CS,INV,PD,Sens]	
		Loamy: includes silt, silt loam, loam, sandy loam.	0		
		Clayey: includes clay, clay loam, silty clay, silty clay loam, sandy clay, sandy clay loam.	0		
		Organic: includes muck, mucky peat, peat, and mucky mineral soils (blackish or grayish). Exclude live roots unless they are moss.	0		
		Coarse: includes sand, loamy sand, gravel, cobble, stones, boulders, fluvents, fluvaquents, riverwash.	0		
T35	Restored Wetland (RestoredT)	The AA was originally a wetland (tidal or nontidal), was artificially drained for many years (and was not a nontidal wetland during that time), and has since had its water regime partly or wholly restored or rehabilitated (e.g., by ditch plugs, berms, tile breakage, non-maintenance).		Consult historical aerial photography, old maps, soil maps, landowners, and/or permit files as available. Also, locations of some restoration wetlands can be found by going to the <u>ORWAP Map Viewer's</u> layers under the Restoration heading. Another potential source is the <u>Conservation Registry</u> : http://or.conservancyregistry.org/ . [CS]	
		Yes, and time of restoration unknown.	0		
		Yes, and restored within last 3 years.	0		
		Yes, and restored 3-7 years ago.	0		
		Yes, and restored more than 7 years ago.	0		
		No.	0		
		Unknown if wetland is restored, created, or naturally occurring.	0		
T36	Cliffs or Banks (CliffT)	Within 300 ft. of the AA, there are elevated terrestrial features such as cliffs, talus slopes, or unarmored banks along nontidal channels that extend at least 6 ft nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1, if true.	0	[SBM, POL]	

T37	Flight Hazards (FlightHazT)	In the AA or within 300 ft, there is an unsheltered fence, powerline, or public road with traffic at least hourly that is located:		Unsheltered fence means open to flying waterfowl on both sides, i.e., not entirely within an area of tall dense vegetation. [WBF]	
		Within 15 ft of the AA's low marsh.	0		
		Within 15 ft of the AA's high marsh.	0		
		Neither.	0		
T38	Non-consumptive Uses - Actual or Potential (RecPotenT)	Select all statements that are true of this AA as it currently exists:		The question assumes access is allowed. [PUv]	
		Walking is physically possible in >5% of the AA during most of year (e.g., free of deep water and dense shrub thickets).	0		
		All or part of the AA (or an area within sight of the AA and within 30 m) would be physically accessible to people in wheelchairs (e.g., paved and flat).	0		
		Maintained roads, parking areas, or foot-trails are within 30 ft of the AA, or the AA can be accessed most of the year by boat.	0		
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0		
T39	Core Area 1 (VisitNoT)	The percentage of the AA almost never walked or driven by humans during an average growing season probably comprises: [Note: If more than half the wetland is visible from areas within 100 ft of the AA, include visits by people to those areas that are actually walked or driven (not simply viewed from)].		Judge this based on proximity to population centers, roads, trails, accessibility of the AA to the public, wetland size, usual water depth, and physical evidence of human visitation. Exclude visits that are not likely to continue and/or that are not an annual occurrence (e.g., by construction or monitoring crews). [WBF,PD,PUv]	
		<5% and no inhabited building is within 300 ft of the AA.	0		
		<5% and inhabited building is within 300 ft of the AA.	0		
		5 to <50% and no inhabited building is within 300 ft of the AA.	0		
		5 to <50% and inhabited building is within 300 ft of the AA.	0		
		50 to 95% with or without inhabited building nearby.	0		
		>95% of the AA with or without inhabited building nearby.	0		
T40	Core Area 2 (VisitOftenT)	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [The Note in the preceding question applies here as well].		See note above. [WBF,PD,PUv]	
		<5%.	0		
		5 to <50%.	0		
		50 to 95%.	0		
		>95% of the AA.	0		
T41	Consumptive Uses (Provisioning Services) (UsesT)	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select all that apply.		Evidence of these consumptive uses may consist of direct observation, or presence of physical evidence (e.g., recently cut stumps, fishing lures, shell cases), or might be obtained from communication with the land owner or manager. [PUv]	
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0		
		Waterfowl hunting or furbearer trapping.	0		
		Fishing.	0		
		None of the above.	0		
T42	Ownership (OwnershipT)	Most of the AA is:		An initial indication of ownership can be found on the ORWAP Map Viewer under the Land Ownership layer. However, it is advisable to ask local sources or use local maps with higher precision. [PUv]	
		Publicly owned (municipal, county, state, federal).	0		
		Non-profit conservation organization that allows public access to this AA.	0		
		Other private ownership, including tribal. Enter 1, if true and SKIP to T44.	0		
T43	Special Protected Area Designation (DesigT)	The AA is part of an area designated as a Bureau of Land Management Area of Critical Environmental Concern (ACEC) or Outstanding Natural Area (ONA), Federal Research Natural Area (RNA) or Special Interest Area (SIA), or Natural Heritage Conservation Area (NHCA).	0	[PUv]	
T44	Conservation Investment (ConsInvestT)	The AA is on private lands and is not a mitigation wetland, but public funds have been spent to preserve, create, restore, or enhance functions of the wetland. Enter 1, if true. If unknown, leave 0.	0	Locations of some restoration wetlands can be found on the ORWAP Map Viewer under the Restoration heading. Another potential source is the Conservation Registry : http://or.conservancyregistry.org/ . [PUv]	
T45	Compensation Wetland (MitWetT)	The AA is all or part of a compensation site used explicitly to offset impacts elsewhere. Enter 1, if true. If unknown, leave 0.	0	Answer to the best of your knowledge. Sources for information include the property owner, DSL, and/or the ACOE. [PUv]	

T46	Sustained Scientific Use (SciUseT)	Plants, animals, or water in the AA have been monitored for >2 years, <u>unrelated to any regulatory requirements, and data are available to the public</u> . Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Enter 1, if true. If unknown, leave 0	0	[PUv]	
T47	Wetland Type of Conservation Concern (RareTypeT)	The AA comprises all or part of (a) a wooded tidal wetland (>30% cover of trees and/or shrubs), OR (b) an undiked tidal freshwater wetland (surface salinity <0.5 ppt during most of spring and summer). Enter 1, if true.	0	[PDv]	

Site:	Name:	Date:
Data Form S. ORWAP Version 3.1. <u>NOTE:</u> Do not enter numbers in grayed-out cells.		
		Data

S1 Aberrant Timing of Water Inputs (AltTiming)				
<i>In the "Data" column, place an X next to any item that is likely to have caused the timing of water inputs (but not necessarily their volume) to shift by hours, days, or weeks, becoming either more muted (smaller or less frequent peaks spread over longer times, more temporal homogeneity of flow or water levels) or more flashy (larger or more frequent spikes but over shorter times).</i>				
Control structure that regulates inflow to the AA (including tide gates), or flow regulation in tributaries, or water level in adjoining water body is regulated.				
Irrigation runoff or seepage.				
Snow storage areas that drain directly to the wetland.				
Increased pavement and other impervious surface in the CA.				x
Straightening, ditching, dredging, and/or lining of tributary channels in the CA.				
<i>If any items were checked above, then for each row of the table below, you may assign points (3, 2, or 1). However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition, if the checked items never occurred or were no longer present.</i>				
	Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
Spatial extent within the AA of timing shift.	>95% of AA.	5-95% of AA.	<5% of AA.	2
When most of the timing shift began.	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	2
<i>Score the following 2 rows only if the altered inputs began within past 10 years, and only for the part of the AA that experiences those.</i>				
Input timing now vs. previously.	Shift of weeks.	Shift of days.	Shift of hours or minutes.	2
Flashiness or muting.	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	2
			Sum=	8
			Final score=	0.67
S2 Accelerated Inputs of Nutrients (NutrLoad)				
<i>In the "Data" column, place an X next to any item -- occurring in either the AA or its RCA -- that is likely to have accelerated the inputs of nutrients (nitrogen, phosphorus) to the AA.</i>				
Stormwater or wastewater effluent (including failing septic systems), landfills.				x
Fertilizers applied to lawns, ag lands, or other areas in the RCA.				x
Livestock, dogs.				
Artificial drainage of upslope lands.				x
Other waterborne human-related nutrient sources within the RCA.				
<i>If any items were checked above, then for each row of the table below, you may assign points. However, if you believe the checked items did not cumulatively expose the AA to significantly more nutrients, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.</i>				
	Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
Usual load of nutrients.	Large (e.g., feedlots, extensive residential on septic or 303d* for nutrients).	Moderate (e.g., grazing, light residential on septic, light agriculture).	Limited (e.g., a few animals, lawns, sewered residential).	1
Frequency & duration of input.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	2
AA proximity to main sources (actual or potential).	0-50 ft.	50-300 ft. or in groundwater.	In other part of contributing area.	1
			Sum=	4
			Final score=	0.44

S3	Accelerated Inputs of Contaminants and/or Salts (ContamIn).				
<i>In the "Data" column, place an X next to any item -- occurring in either the AA or its RCA -- that is likely to have accelerated the inputs of contaminants or salts to the AA.</i>					
	Stormwater or wastewater effluent (including failing septic systems), landfills, snow storage areas.				x
	Metals & chemical wastes from mining, shooting ranges, oil/ gas extraction, other sources.				
	Irrigation of lands, especially those with saline soils.				
	Oil or chemical spills (not just chronic inputs) from nearby roads.				
	Road salt.				
	Pesticides applied to lawns, ag lands, roadsides, or other areas in the RCA, but excluding spot applications for controlling non-natives in the AA.				x
	Artificial drainage of contaminated or saline soils.				
	Erosion of contaminated soils.				
	Other contaminant sources within the RCA.				
<i>If any items were checked above, then for each row of the table below, you may assign points. However, if you believe the checked items did not cumulatively expose the AA to significantly higher levels of contaminants and/or salts, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.</i>					
		Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
	Usual toxicity of most toxic contaminants.	Industrial effluent or 303d* for toxics.	Wastewater treatment plant, cropland, fossil fuel extraction, pipeline, power station, managed landfill.	Low density residential or commercial.	1
	Frequency & duration of input.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	2
	AA proximity to main sources (actual or potential).	0-50 ft.	50-300 ft. or in groundwater.	In other part of contributing area.	0
* See ORWAP Map Viewer for waters designated as 303d; see Oregon DEQ web site for reasons.				Sum=	3
				Final score=	0.33
S4	Excessive Sediment Loading from Runoff Contributing Area (SedRCA).				
<i>In the "Data" column, place an X next to any item present in the RCA that is likely to have elevated the load of waterborne or windborne sediment reaching the AA from its RCA.</i>					
	Erosion from plowed fields, fill, timber harvest, dirt roads, vegetation clearing, fires.				
	Erosion from construction, in-channel machinery in the RCA.				
	Erosion from off-road vehicles in the RCA.				
	Erosion from livestock or foot traffic in the RCA.				
	Stormwater or wastewater effluent.				x
	Sediment from road sanding, gravel mining, other mining, oil/ gas extraction.				
	Accelerated channel downcutting or headcutting of tributaries due to altered land use.				
	Other human-related disturbances within the RCA.				
<i>If any items were checked above, then for each row of the table below you may assign points (3, 2, or 1) in the last column that describe the combined maximum effect of those items in increasing the amount or transport of sediment into the AA. To estimate that, contrast it with the condition if checked items never occurred or were no longer present.</i>					
		Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
	Erosion in RCA.	Extensive evidence, high intensity*.	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	1
	Recentness of significant soil disturbance in the RCA.	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
	Duration of sediment inputs to the AA.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & mainly during high runoff or severe wind events.	1
	AA proximity to actual or potential sources.	0-50 ft., or farther but on steep erodible slopes.	50-300 ft.	In other part of contributing area.	1
* High-intensity= plowing, grading, excavation, erosion with or without veg removal; low-intensity= veg removal only with little or no apparent erosion or disturbance of soil or sediment.				Sum=	4
				Final score=	0.33

S5 Soil or Sediment Alteration <i>Within the Assessment Area</i> (SoilDisturb).				
<i>In the "Data" column, place an X next to any item present in the AA that is likely to have compacted, eroded, or otherwise altered the AA's soil.</i>				
Compaction from livestock, machinery, off-road vehicles, or mountain bikes, especially during wetter periods.				
Leveling or other grading not to the natural contour.				
Tillage, plowing (but excluding disking for enhancement of native plants).				
Fill, riprap, other armoring, excluding small amounts of upland soils containing organic amendments (compost, etc.) or small amounts of topsoil stockpiled or imported from another wetland.				
Excavation.				
Dredging in or adjacent to the AA.				
Boat traffic in or adjacent to the AA and sufficient to cause shore erosion or stir bottom sediments.				
Artificial water level or flow manipulations sufficient to cause erosion or stir bottom sediments.				
<i>If any items were checked above, then for each row of the table below you may assign points (3, 2, or 1) in the last column that describe the combined maximum effect of those items in altering the AA's soils. To estimate that, contrast it with the soil condition if checked items never occurred or were no longer present.</i>				
	Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
Spatial extent of altered soil.	>95% of AA or >95% of its upland edge (if any).	5-95% of AA or 5-95% of its upland edge (if any).	<5% of AA and <5% of its upland edge (if any).	1
Recentness of significant soil alteration in AA.	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
Duration.	Long-lasting, minimal veg recovery.	Long-lasting but mostly revegetated.	Short-term, revegetated, not intense.	1
Timing of soil alteration.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & mainly during scattered events.	1
				Sum=
				Final score=
				4
				0.33

Site Name:	Tax Lot 700
Investigator Name:	Chris Morris
Date of Field Assessment:	43769
<i>Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were ratings assigned.</i>	

Normalized Scores & Ratings for this Assessment Area (AA):					
Specific Functions or Values:	Function Score	Function Rating	Rating Break Proximity	Values Score	Values Rating
Water Storage & Delay (WS)	10.00	Higher		2.50	Lower
Sediment Retention & Stabilization (SR)	10.00	Higher		4.29	Moderate
Phosphorus Retention (PR)	10.00	Higher		3.29	Lower
Nitrate Removal & Retention (NR)	10.00	Higher		10.00	Higher
Anadromous Fish Habitat (FA)	0.00	Lower		0.00	Lower
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower
Amphibian & Reptile Habitat (AM)	5.46	Moderate		6.67	Moderate
Waterbird Nesting Habitat (WBN)	5.08	Moderate		5.33	Moderate
Waterbird Feeding Habitat (WBF)	3.38	Moderate		7.50	Higher
Aquatic Invertebrate Habitat (INV)	4.44	Lower	LM	4.66	Moderate
Songbird, Raptor, Mammal Habitat (SBM)	2.23	Lower		7.33	Moderate
Water Cooling (WC)	7.00	Higher		0.00	Lower
Native Plant Diversity (PD)	5.30	Moderate		6.67	Moderate
Pollinator Habitat (POL)	4.87	Moderate		8.66	Higher
Organic Nutrient Export (OE)	0.00	Lower			
Carbon Sequestration (CS)	4.30	Moderate			
Public Use & Recognition (PU)				3.78	Lower

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	3.78	Moderate	
Wetland Ecological Condition (EC)	2.53	Lower	LM
Wetland Stressors (STR)	8.27	Higher	MH

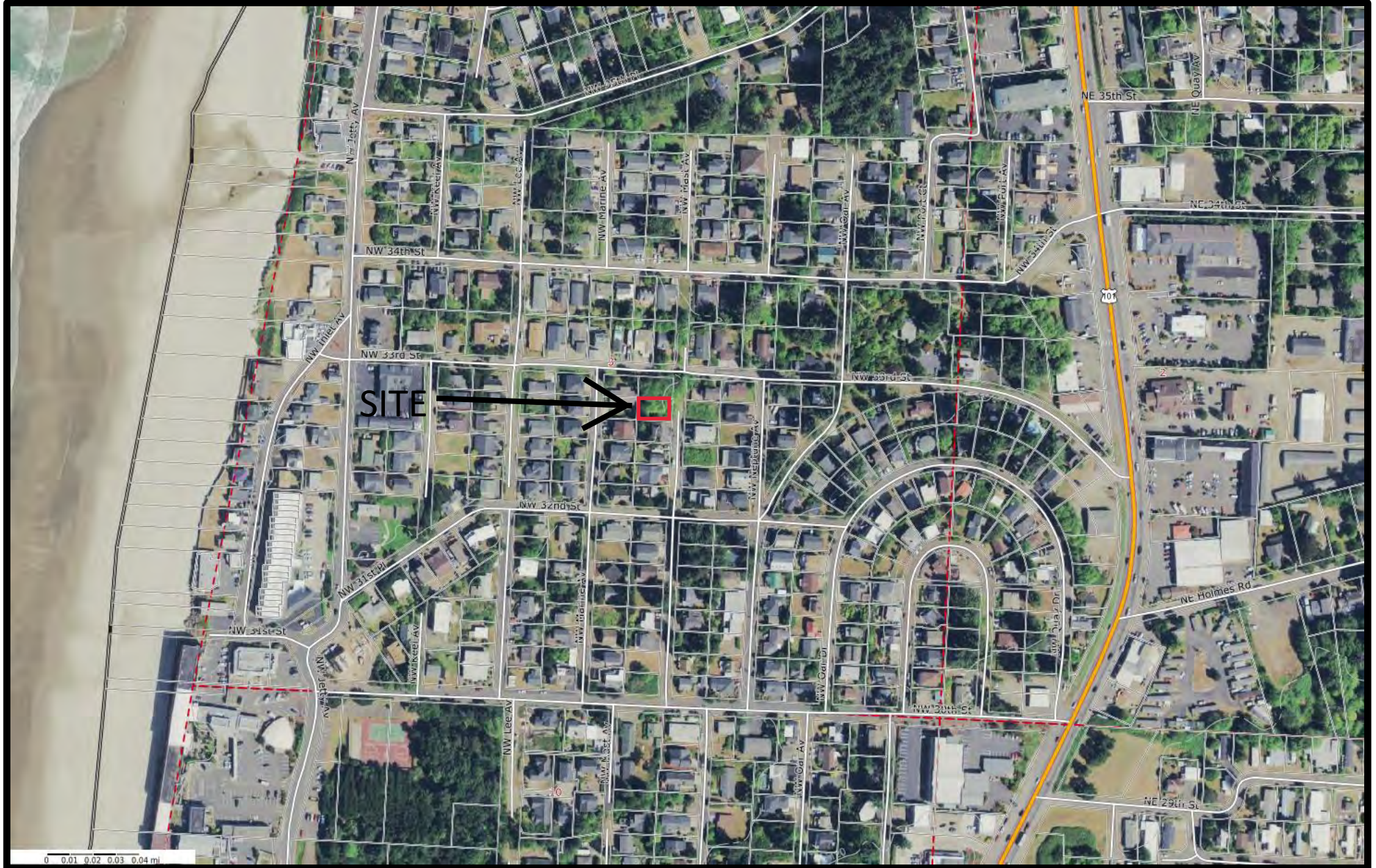
GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating
Hydrologic Function (WS)	Water Storage & Delay (WS)	Higher		Lower
Water Quality Support (SR, PR, or NR)	Nitrate Removal & Retention (NR)	Higher		Higher
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Lower		Lower
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Feeding Habitat (WBF)	Moderate		Higher
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Water Cooling (WC)	Higher		Lower

computed and

Rating Break Proximity
LM
LM
MH
MH
MH
LM

Rating Break Proximity
LM

Vicinity Map

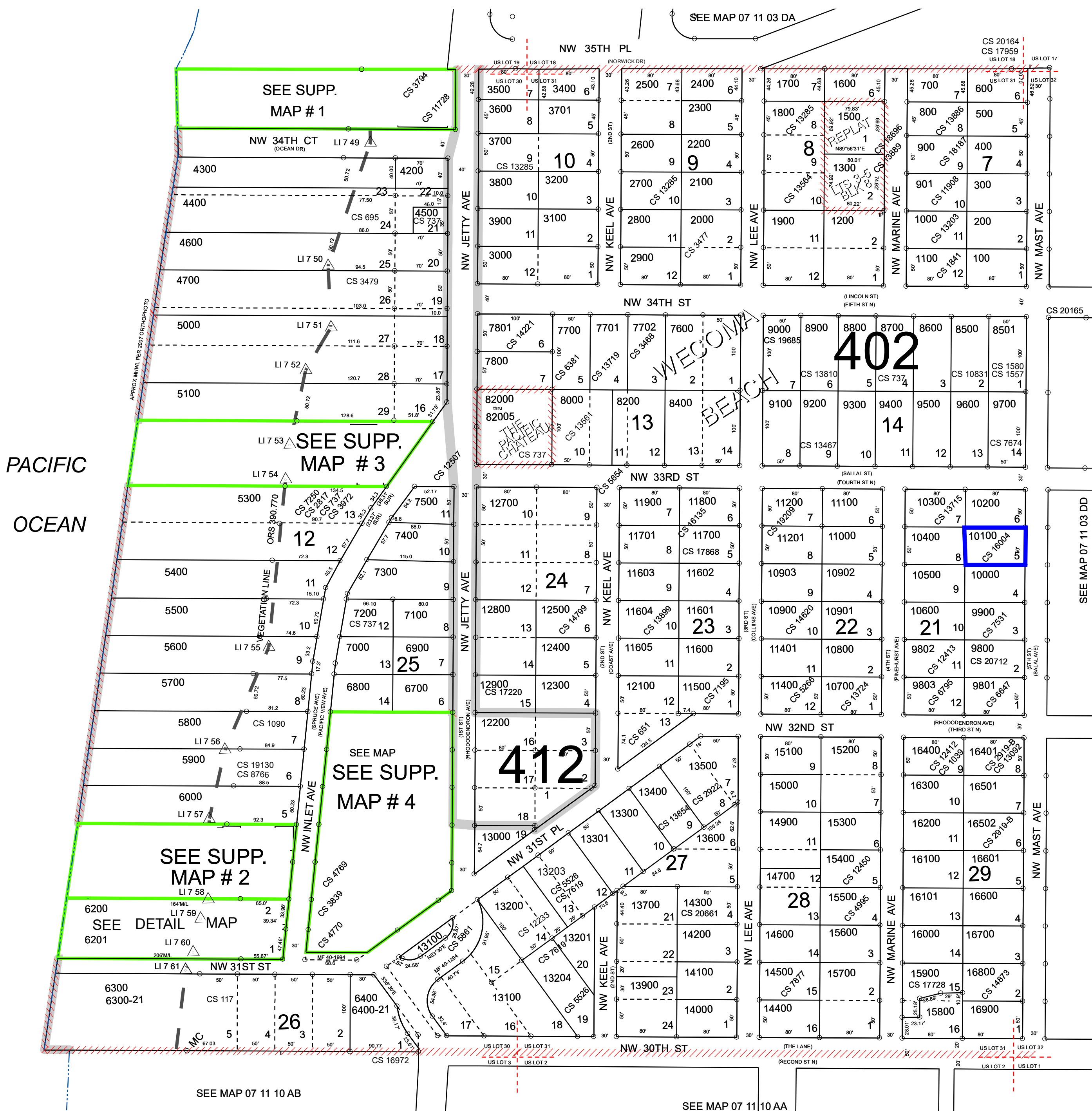


Printed 12/04/2019

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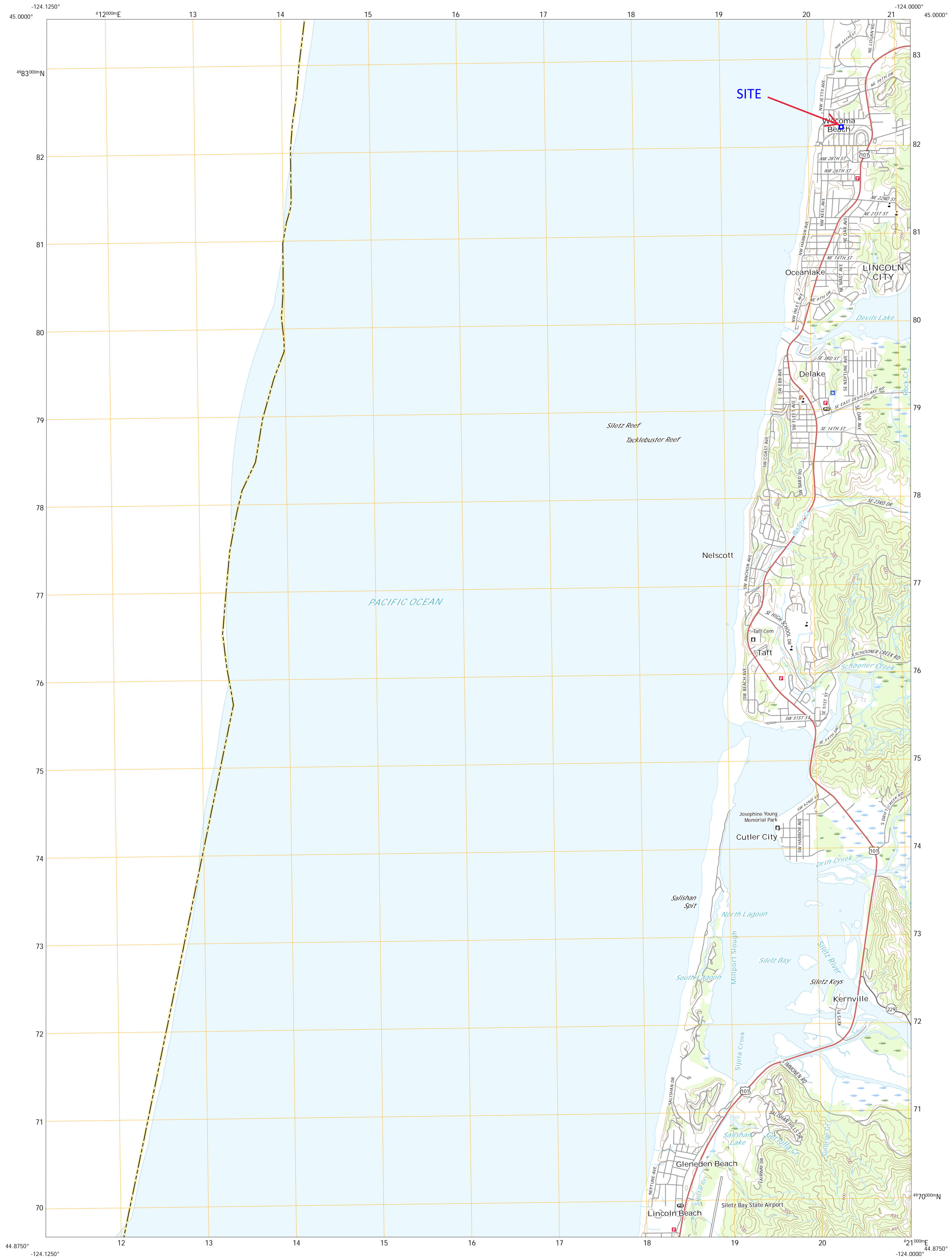
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1400
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6600
7900
8100
8300
11300
12000
12600
13202
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14800
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70154
81004
81005
90003-41
90003-42



SEE MAP 07 11 10 AB

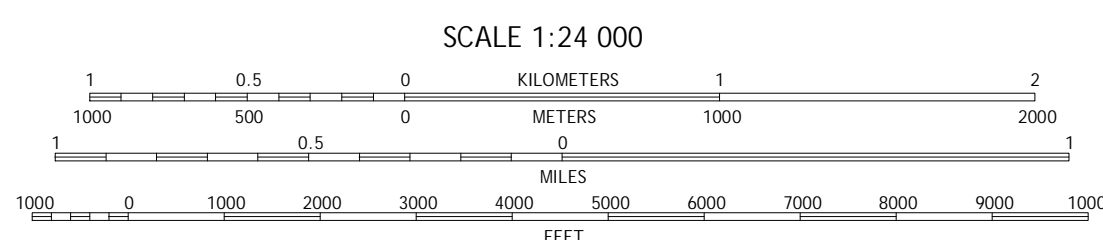
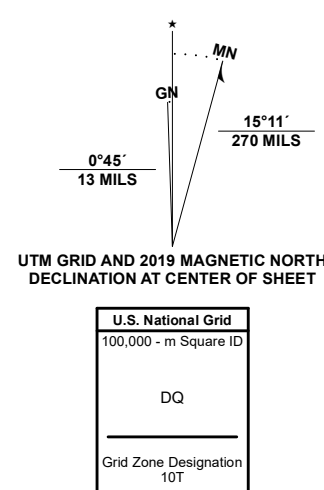
SEE MAP 07 11 10 AA

Revised: SEB 06/09/2015



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84) Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 10T
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery: NAIP, June 2016 - September 2016
Roads: U.S. Census Bureau, 2016
Names: GNS, 1980-2000
Hydrography: National Hydrography Dataset, 1989 - 2019
Contours: National Elevation Dataset, 2012
Boundaries: Multiple sources; see metadata file, 2018
Public Land Survey System: BLM, 2019
Wetlands: FWS National Wetlands Inventory, 2010



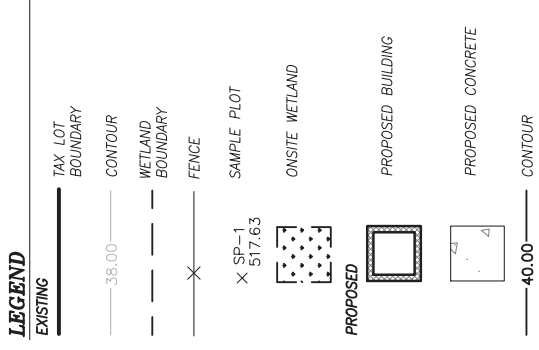
1	2
3	4
5	

ADJOINING QUADRANGLES

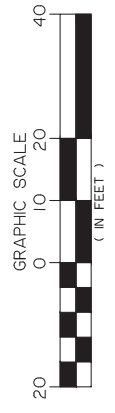
- 1 Neskowin OE W
- 2 Neskowin
- 3 Devils Lake
- 4 Dupoo Bay
- 5 Mowrey Landing

ROAD CLASSIFICATION	
	Expressway
	Secondary Hwy
	Ramp
	Interstate Route
	US Route
	State Route
	Local Connector
	Local Road
	4WD





NOTE
 WETLAND BOUNDARY, TAX LOT BOUNDARIES, SAMPLE PLOT POINTS AND ALL OTHER MAPPED FEATURES WERE MAPPED USING SUB-METER RESOURCE GRADE TRIMBLE R10 GNSS AND MOBILE HANDHELD COMPUTER LINKED BY BLUETOOTH TO THE GNSS RECEIVER.

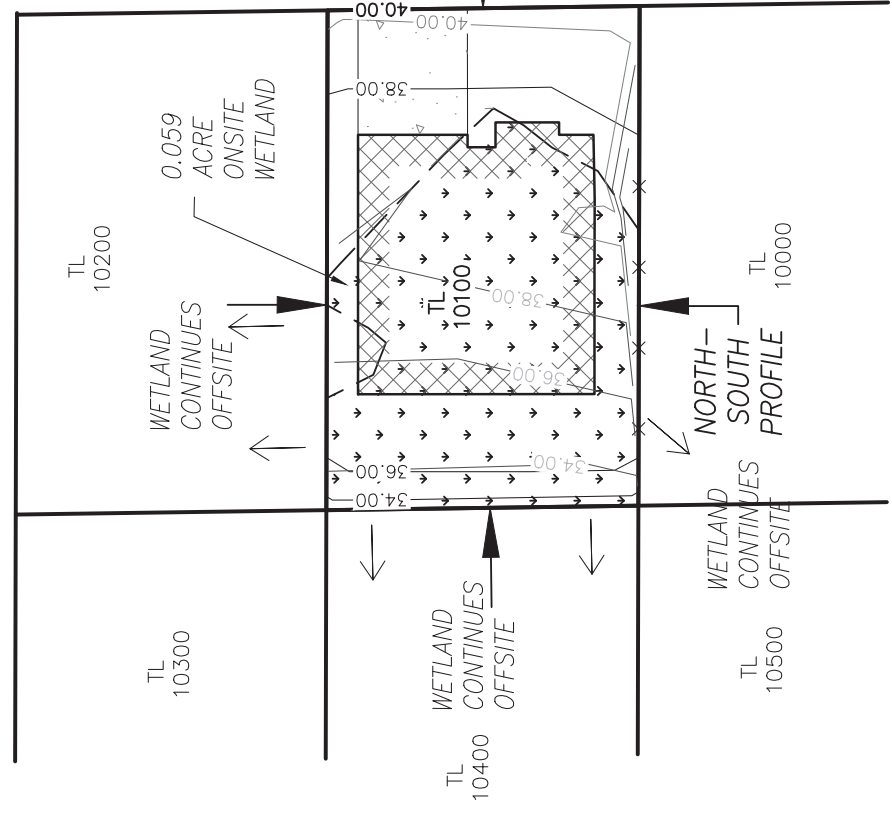
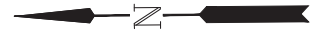


WETLAND AREA

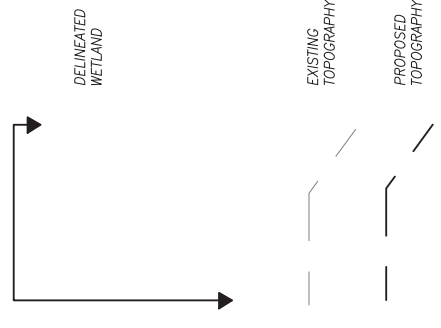
LOT	ACRES
10100	0.059

NW 33RD STREET

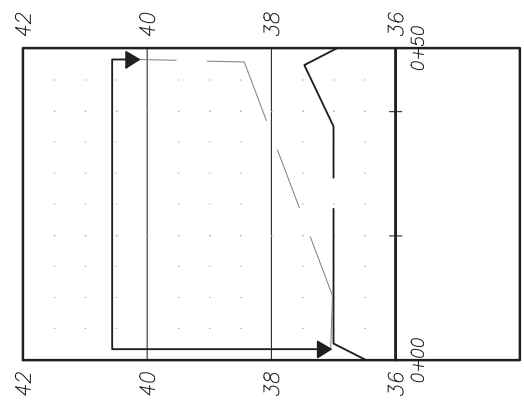
NW MAST AVENUE



LEGEND

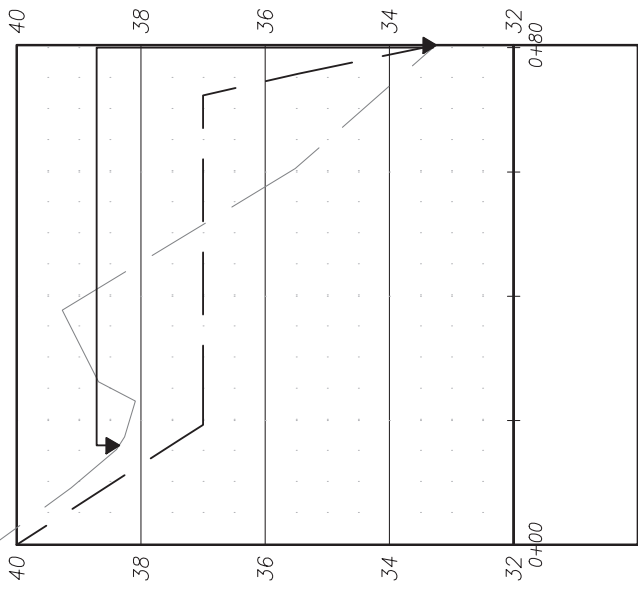


NORTH-SOUTH PROFILE VIEW



NORTH-SOUTH PROFILE VIEW SCALE: 1"=20'
HORIZONTAL SCALE: 1"=20'
HORIZONTAL SCALE: 1"=2'

EAST-WEST PROFILE VIEW



EAST-WEST PROFILE VIEW SCALE: 1"=20'
HORIZONTAL SCALE: 1"=20'
HORIZONTAL SCALE: 1"=2'

2018

Write a description for your map.

Legend



Google Earth

© 2018 Google

300 ft



Oregon

Kate Brown, Governor

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

May 7, 2020

David Haun
P.O. Box 758
Lincoln City, OR 97367

Kate Brown
Governor

Re: WD # 2019-0635 **Approved**
Wetland Delineation Report for Tax Lot 10100
Lincoln County; 17S 11W S3DC, TL10100

Bev Clarno
Secretary of State

Tobias Read
State Treasurer

Dear Mr. Haun:

The Department of State Lands has reviewed the wetland delineation report prepared by Branch Engineering, Inc. for the site referenced above. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland boundaries as mapped in Figure 9 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, 1 wetland (Wetland A, totaling approximately 0.059 acre) was identified. Wetland A is subject to permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a

determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please contact the Jurisdiction Coordinator for Lincoln County, Matt Unitis, at (503) 986-5262.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Ryan".

Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

ec: Chris Morris, Branch Engineering, Inc.
City of Lincoln City Planning Department (Maps enclosed for updating LWI)
Carrie Bond, Corps of Engineers
Carrie Landrum, DSL
Oregon Coastal Management Program (coastpermits@state.or.us)

LEGEND

EXISTING

TAX LOT BOUNDARY

WETLAND BOUNDARY

FENCE

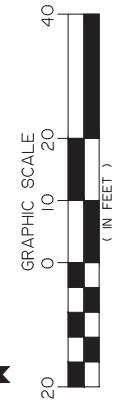
SAMPLE PLOT

ONSITE WETLAND

PHOTO NUMBER, LOCATION AND DIRECTION

NOTE

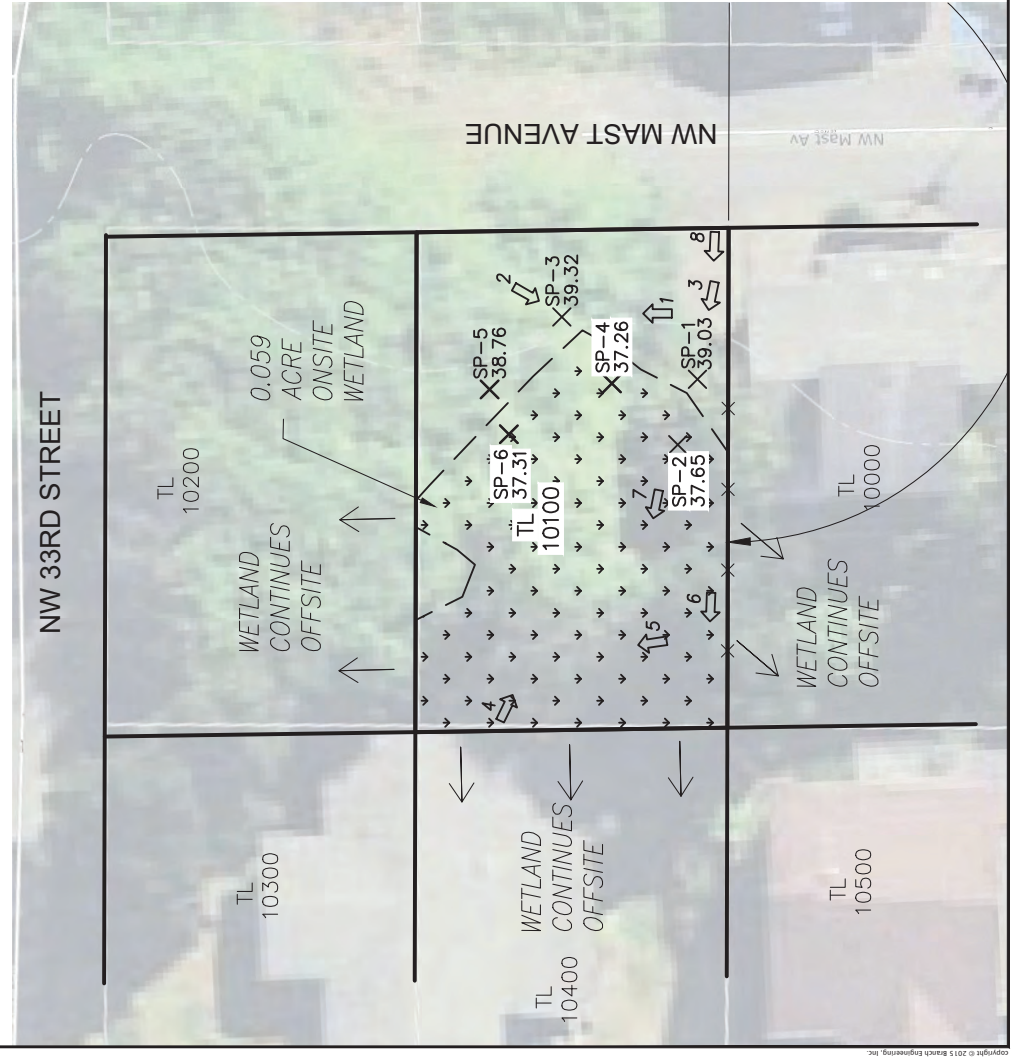
WETLAND BOUNDARY, TAX LOT BOUNDARIES, SAMPLE PLOT POINTS AND ALL OTHER MAPPED FEATURES WERE MAPPED USING SUB-METER RESOURCE GRADE TRIMBLE R10 GNSS AND MOBILE HANDHELD COMPUTER LINKED BY BLUETOOTH TO THE GNSS RECEIVER.



DSL WD # 2019-0635
 Approval Issued 5/7/2020
 Approval Expires 5/7/2025

WETLAND AREA

LOT	ACRES
10100	0.059



David Haun Property Wetland Delineation Report

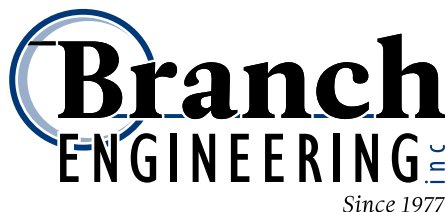
Lane County Tax Map 07-11-03-DC and
Tax Lot 10100

**Prepared for
David Haun
Lincoln City, Oregon 97367**

Site Location Directions:
From Salem, take OR 22 W 25.8 miles,
Take ramp to Oregon coast for 0.4 miles,
Merge onto OR 18 W/OR 22 W for 27.0 miles,
Merge onto US 101 S for 3.0 miles,
Turn right onto NW 30th St for 0.2 miles,
Turn Right onto NW Mast Ave for 0.1 miles,
Site is on left.

**Prepared by
Christopher Morris, E.I.T, Certified Wetland Delineator
Branch Engineering, Inc.**

December 4, 2019



civil · transportation
structural · geotechnical
SURVEYING

www.BranchEngineering.com

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A.2 Topography.....	1
A.4 Soils.....	1
A.5 Hydrology.....	2
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E. Description of Wetlands and Non-Wetland Waters.....	3
F. Deviation from LWI and NWI Maps.....	4
G. Mapping Method.....	4
H. Additional Information.....	4
I. Results and Conclusions.....	4
J. Disclaimer.....	4

Appendices

Description

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- Figure 2
- Figure 3
- Figure 4
- Figure 5
- Figure 6, 7 & 8
- Figure 9

Vicinity Map
Tax Lot Map
LWI Map
Soil Map
LIDAR Map
Aerials
Wetland and Study Area Map
Data Forms
Study Area Photographs
Citations

Appendix B

Appendix C

Appendix D

A. Landscape Settings and Land Use

A.1 Existing Conditions

The study area is a 0.092-acre tax lot that is located south of 33rd Street, west of NW Mast Avenue and East of NW Marine Avenue in Lincoln City, OR.

Tax Map and Tax Lot	Lot Size	Zoning
Map 07-11-03-DC Lot 10100	0.092 acres	Residential
TOTAL	0.092 acres	Residential

Table 1: Tax Lot Information

The site location is within a residential zoned neighborhood in Lincoln City, OR. The investigation site is a small residential tax lot near the Pacific Ocean within the City of Lincoln City, OR. The study area is located in what is likely a historic drainage swale off of the hill that drained from east to west. The swale has been developed with residential homes and streets. There is a drainage ditch to the north on the south side of NW 33rd Street that now drains the adjacent residential areas.

A.2 Topography

Topographically, the site slopes from east to west with slope percentages ranging from 3-8% across the site.

A.3 Vegetation

The study area is vegetation has been disturbed on the northern portion of the property with the development of the adjacent northern lot. The site's tree stratum is dominated by *Alnus rubra*. The shrub stratum is dominated by *Rosa nutkana* and the herbaceous stratum by *Poa pratensis*.

A.4 Soils

The Natural Resources Conservation Service (NRCS) Web Soil Survey maps the site area as containing a single soil types across the site. Gleneden silty clay loam, 2-12 percent slopes (Soil Number 22C) covers 100% of the Study Area. Gleneden silty clay loam is described as a clayey alluvium derived from mixed sources, a somewhat poorly-drained soil of Hydrologic Group D. Gleneden silty clay loam is not rated as a Hydric Soil.

Soil textures were predominantly silty clay loam near the surface with clay percentages accumulating as profile depths increased. Redox Dark Surface (F6) was the Hydric Soil Indicator encountered in test pits investigated.

A.5 Hydrology

Site hydrology is supplied by annual precipitation events. Through soil investigations, wetland hydrology is thought to likely be provided by precipitation that is perched on the underlying clay lens layer that was encountered in soil profiles.

B. Site Alterations

The subject site is an undeveloped residential lot on a hillslope. The surrounding area has been mostly developed with vegetation and hydrologic alterations. The study area’s vegetation has been altered from its historic tufted hairgrass vegetation type. The hydrology has been altered by the stormwater ditch to the north and by the surrounding streets. Most recently, the site’s vegetation has been altered by the development of the adjacent tax lot through the stripping of the vegetation.

C. Precipitation Analysis

Table 2 below summarizes the monthly precipitation totals recorded in the area as well as the WETS Table average precipitation and less than/greater than 30% average values.

Month	Recorded Precipitation	30/70% WETS Comparison	WETS Average	<>30% Values
June, 2019	1.50 in	Within	3.53 in	2.38 in/4.23 in
July, 2019	1.18 in	Within	1.34 in	0.57 in/1.59 in
August, 2019	0.78 in	Within	1.58 in	0.71 in/1.93 in
September, 2019 (19 days)	1.18 in	Within	2.28 in	0.90 in/2.76 in
TOTALS	4.64 in	Within	8.73 in	4.56 in/10.5 in

Table 2: Precipitation Data

Table 3 summarizes the recorded precipitation the day of and 2 weeks prior to the field visit as well as the recorded percent of average water year and 1st-3rd preceding month’s precipitation totals.

Date of Visit	Recorded PPT	2 Weeks Prior PPT	WETS Average PPT Water Year	% Observed PPT Water Year	% Observed Preceding Month PPT	% Observed 2 nd Preceding Month	% Observed 3 rd Preceding Month
Sept. 19, 2019	0.0 in	1.18 in	87.03 in	45%	49%	88%	43%

Table 3: Observed Precipitation Data

Precipitation data was obtained from recorded measurements taken approximately ½ mile away to the southwest of the Study Area. The average elevation across the site is approximately 42 feet above-sea-level while the elevation where observations were taken is 92 feet above-sea-level.

D. Methods

The delineation followed procedures defined in the 1987 Corps Wetland Delineation Manual, and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valley and Coast Range (Version 2.0). The 2016 National Wetland Plant List (NWPL) was used for determining plant indicator status. For the office work that occurred prior to the site visit, we reviewed recent wet season orthophotos, historical aerials available on the Google Earth website, Web Soil Survey, and the Lincoln City LWI.

Site visit occurred September 19, 2019. The site visit coincided after three consecutive months of below average precipitation for the area.

Fieldwork was guided by multiple information sources including historical aerials, Lincoln City LWI, Soil Web Survey soil maps and recently surveyed topographical data of the project area. Soil colors were recorded for moist soil. Digital georeferenced photographs were taken to document site conditions (Appendix C). Six (6) sample plots were completed. Sample plots were completed for paired plots and areas of possible saturation seen on aerials or by visual inference.

The upland/wetland boundary and sample plot locations were mapped using a sub-meter resource grade Trimble R10 Integrated Global Navigation Satellite System (GNSS) and a mobile system that included a hand-held computer running Trimble Access 2017.20, linked by Bluetooth to the GNSS receiver.

E. Description of Wetlands and Non-Wetland Waters

The wetland investigation identified one wetland described below:

Wetland A covers approximately 0.059 acres of Tax Lot 10100 and is surrounded by developed single-family home residential lots and local streets. The wetland is located within a low area and likely historic drainage swale draining the hillslope from east to west. The wetland is vegetated with grasses, herbs and shrubs and with some tree overstory. At the time of the site visit, the wetland had no surface water or inundation anywhere onsite. The sample plot investigations showed no water table but saturated soils within 12 inches of the surface with redox dark surface hydric soil indicators. The wetland does not support fish and does not have open surface connection to any waters of the state.

F. Deviation from LWI and NWI Maps

The wetland was not identified in the National Wetland Inventory. A 2001 wetland delineation (DSL # WD2001-0590) identified wetlands that are mostly consistent with this delineation's wetland mapping.

G. Mapping Method

Mapping of the wetland boundary and sample plot locations was completed using a mobile sub-meter resource grade Trimble R10 Integrated Global Navigation Satellite System (GNSS) and a mobile system that included a hand-held computer running Trimble Access 2017.20, linked by Bluetooth to the GNSS receiver.

Field information, including wetland/upland boundaries and sample plot locations on accompanying figures, meets the required DSL map precision standard of one-meter precision for transferring boundaries of features on the ground to the maps included in this report. The GNSS post-processed horizontal mapping precision is sub-meter. Boundaries for the area investigated (shown on the delineation map) are based on GNSS readings from visible property corners.

H. Additional Information

Additional information for this investigation includes the following websites and databases:

- Lincoln County Property Info Tool
- United States Fish and Wildlife National Wetland Inventory
- Lincoln City Local Wetland Inventory
- NRCS Web Soil Survey
- DOGAMI LIDAR Viewer
- Google Earth

I. Results and Conclusions

The current delineation investigated approximately 0.092 acres included within a single Lincoln County tax lot which included Tax Map 07-11-03-DC Lot 10100. The site is located within Lincoln City limits and is West of NW Mast Avenue and south of NW 33rd Street. The on-site investigation identified one 0.059-acre wetland. The wetland appears to continue offsite to the west, south and a shortly to the north.

J. Disclaimer

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.

APPENDIX A

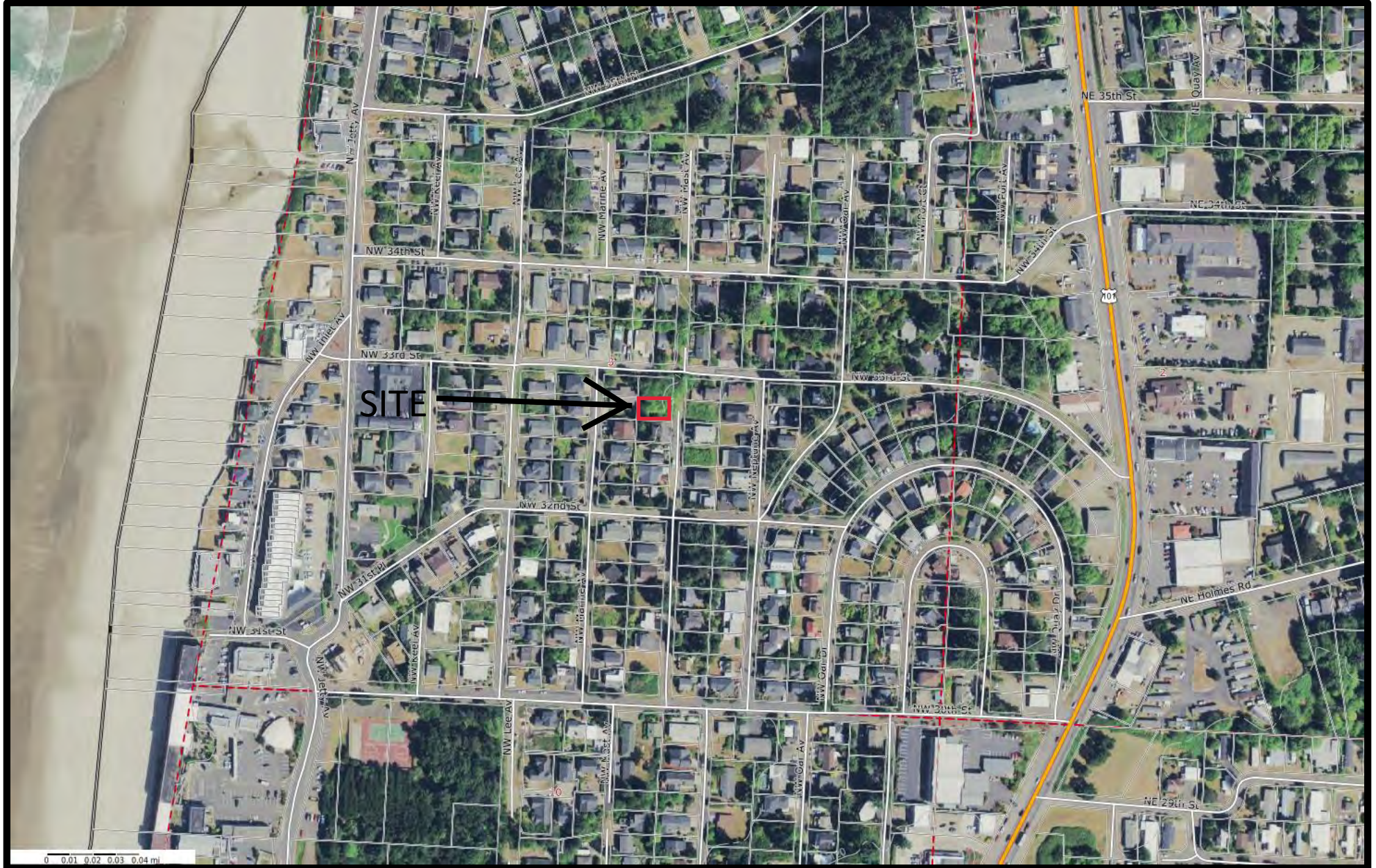


Figure 1

Vicinity Map



Vicinity Map



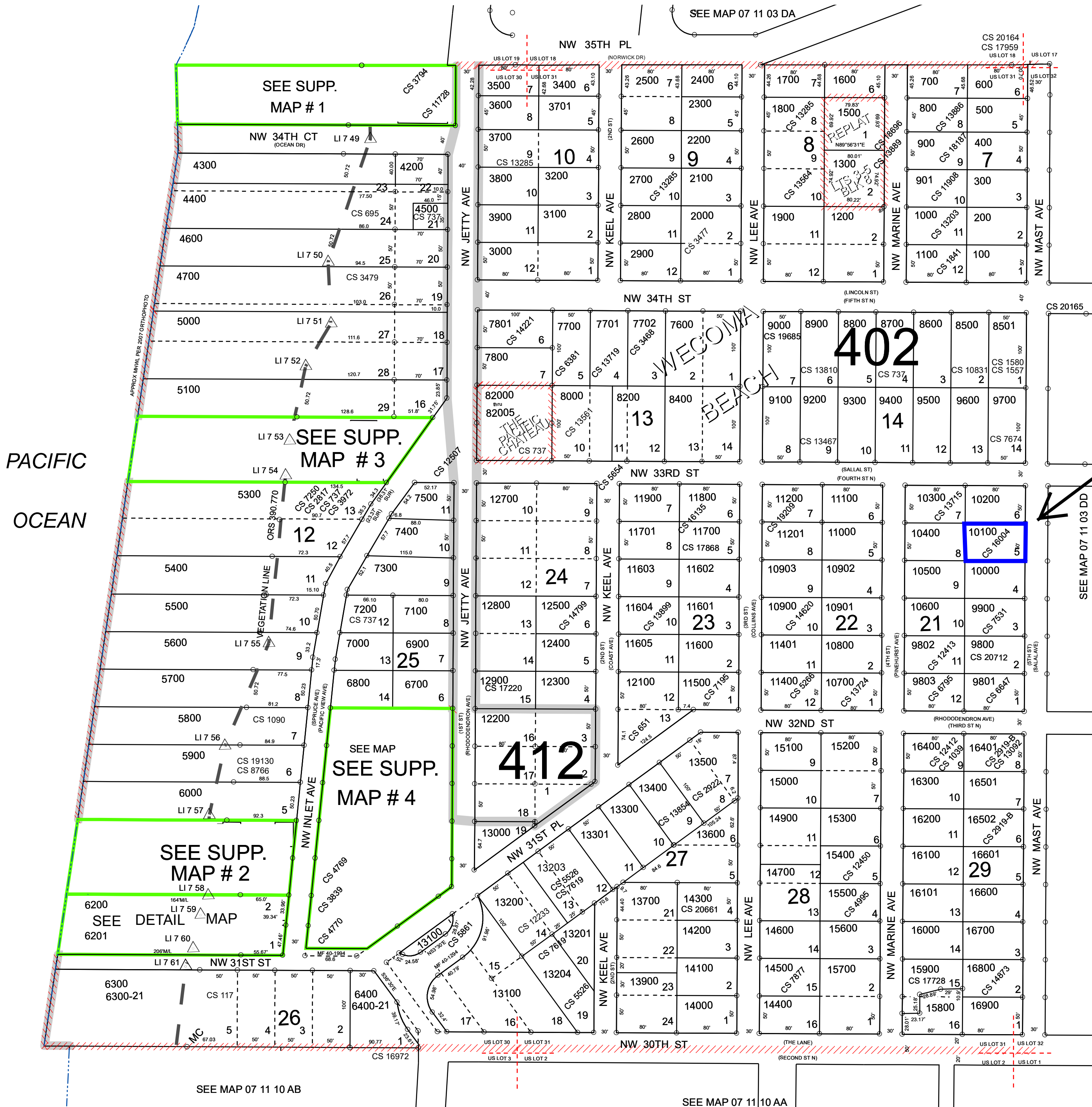
Printed 12/04/2019

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Figure 2
Tax Lot Map





- Cancelled
- 1400
- 3300
- 4000
- 4100
- 4301
- 4401
- 4701
- 4800
- 4900
- 5001
- 5200
- 5501
- 5601
- 6100
- 6500
- 6600
- 7900
- 8100
- 8300
- 11300
- 12000
- 12600
- 13202
- 13800
- 14800
- 16500
- 17000
- 70154
- 81004
- 81005
- 90003-41
- 90003-42

SITE

Figure 3

LWI Map





WETLAND INFORMATION IS SUBJECT TO CHANGE

This map is for planning purposes only. It has not been finalized and adopted by the City of Lincoln City or approved by the wetland regulatory agencies. You are advised to contact the Oregon Division of State Lands or the U.S. Army Corps of Engineers with any regulatory questions. Mapped wetland boundaries are accurate to within 25 feet and there may be unmapped wetlands subject to regulation. Some areas have been identified as potential wetlands and are located on the maps. In all cases, actual field conditions determine wetland boundaries.

**CITY OF LINCOLN CITY
Wetland Inventory**

Sample site
 Watershed boundary
 Urban Growth Boundary (UGB)
 DRC-2 A Unique wetland code
 Wetland area

 DRC Drift Creek Watershed
 SCC Schooner Creek Watershed
 DEL Devils Lake Watershed
 ROC Rowdy Creek Watershed
 LOC Logan Creek Watershed

NORTH
 0 400 800
 FEET
 January 12, 1996

Figure 4

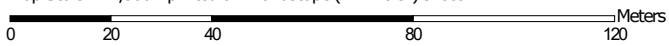
Soil Map



Soil Map—Lincoln County Area, Oregon



Map Scale: 1:1,500 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lincoln County Area, Oregon

Survey Area Data: Version 15, Sep 17, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Feb 12, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

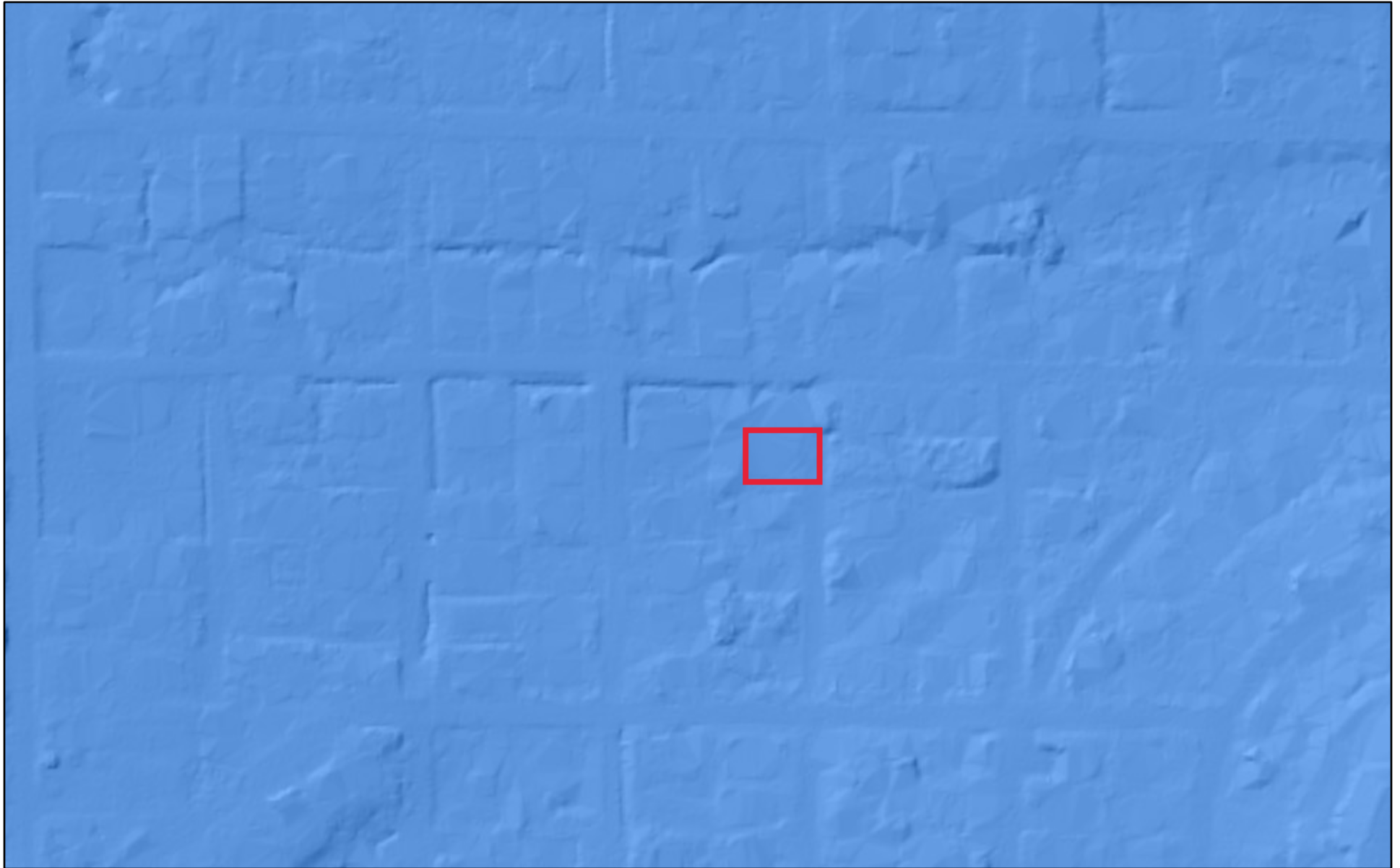
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
22C	Gleneden silty clay loam, 2 to 12 percent slopes	0.1	100.0%
Totals for Area of Interest		0.1	100.0%

Figure 5

LIDAR Map



LIDAR Map

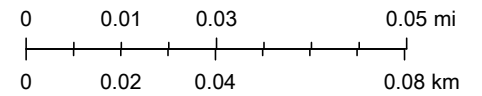


December 4, 2019

Downloadable Lidar Data Bare Earth Lidar Hillshade

0
255

1:2,257



Figures 6, 7 & 8

Aerials



2002

Write a description for your map.

Legend



Google Earth

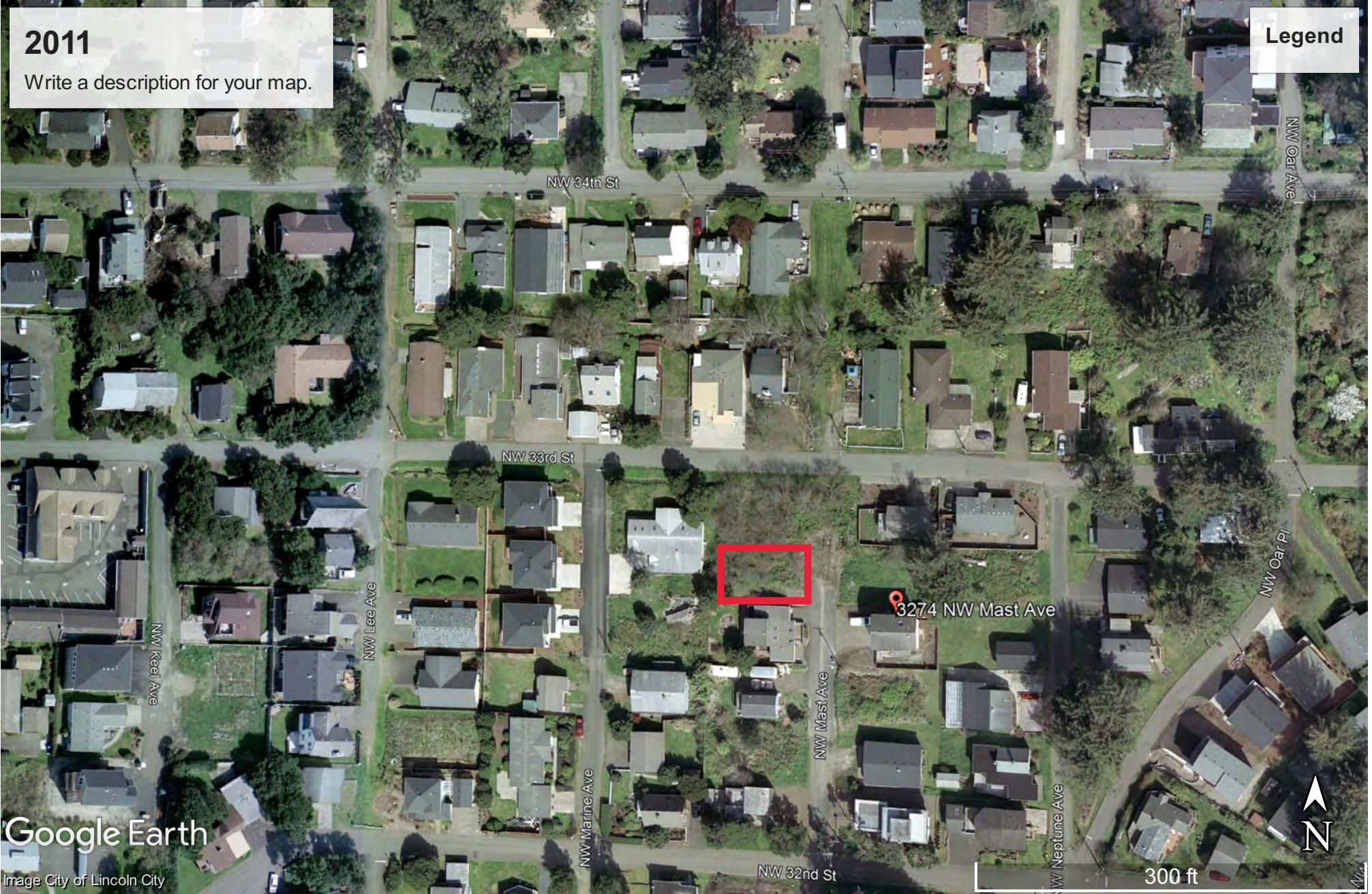


300 ft

2011

Write a description for your map.

Legend



NW 34th St

NW 33rd St

3274 NW Mast Ave

Google Earth

Image City of Lincoln City



300 ft

NW Keel Ave

NW Lee Ave

NW Marine Ave

NW Mast Ave

NW Neptune Ave

NW Oar Ave

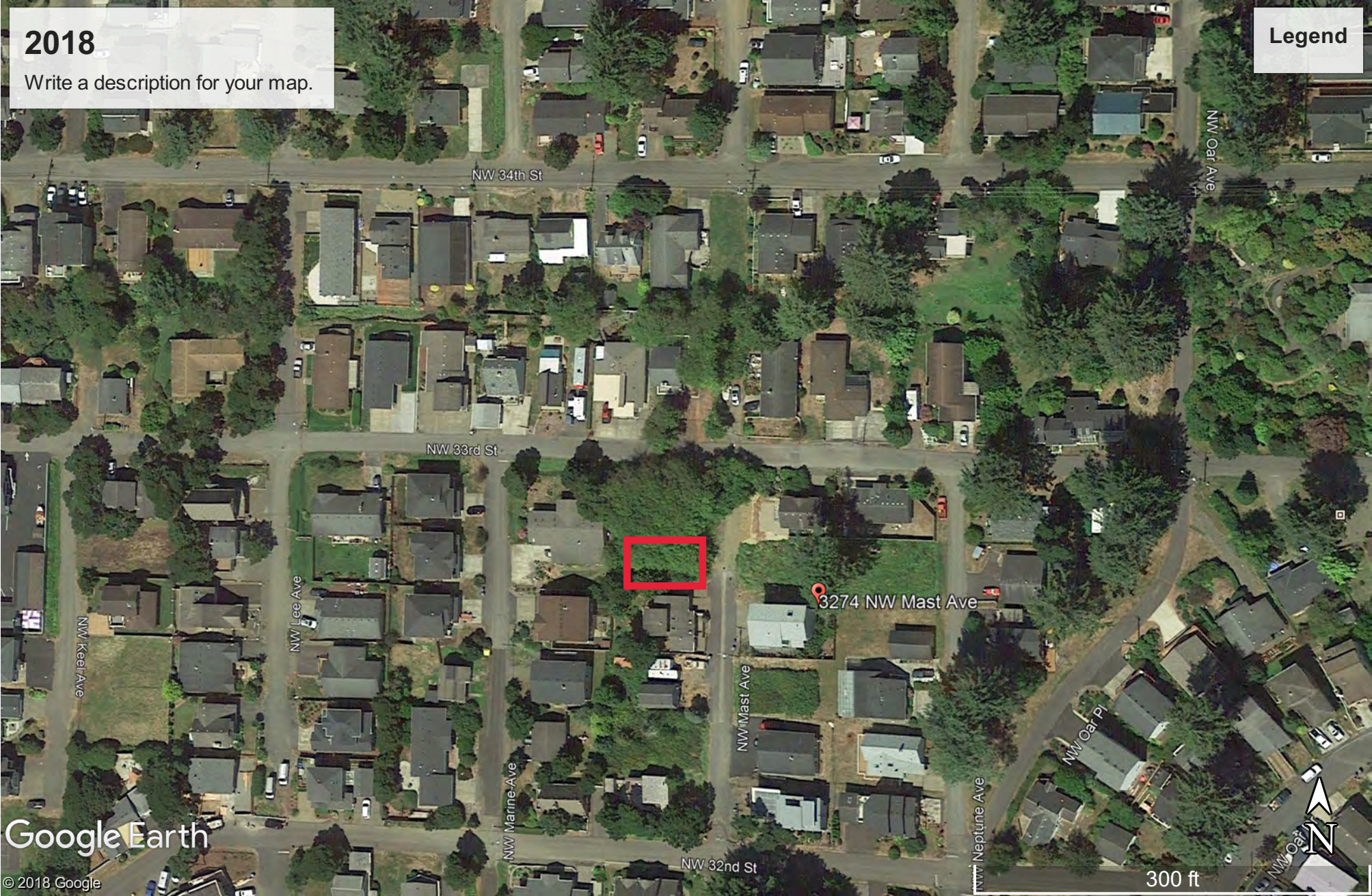
NW Oar Pl

NW 32nd St

2018

Write a description for your map.

Legend



Google Earth

© 2018 Google

300 ft

Figure 9

Study Area and Wetland Map



LEGEND

EXISTING

TAX LOT BOUNDARY

WETLAND BOUNDARY

FENCE

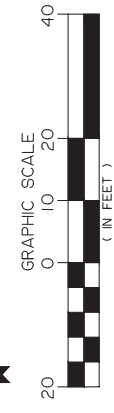
SAMPLE PLOT

ONSITE WETLAND

PHOTO NUMBER, LOCATION AND DIRECTION

NOTE

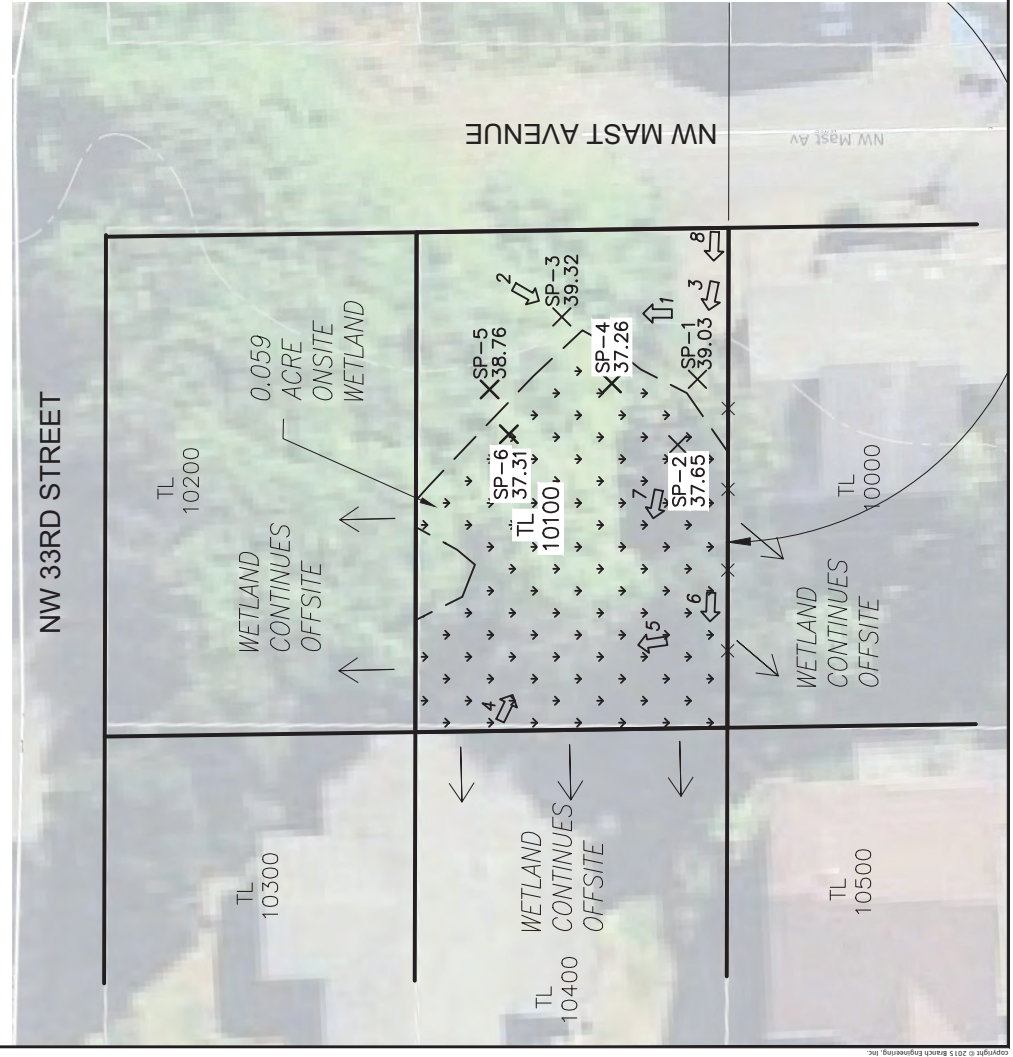
WETLAND BOUNDARY, TAX LOT BOUNDARIES, SAMPLE PLOT POINTS AND ALL OTHER MAPPED FEATURES WERE MAPPED USING SUB-METER RESOURCE GRADE TRIMBLE R10 GNSS AND MOBILE HANDHELD COMPUTER LINKED BY BLUETOOTH TO THE GNSS RECEIVER.



DSL WD # 2019-0635
 Approval Issued 5/7/2020
 Approval Expires 5/7/2025

WETLAND AREA

LOT	ACRES
10100	0.059



APPENDIX B

Data Sheets



WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lot 10100 Delineation City/County: Lincoln Sampling Date: 9/19/19
 Applicant/Owner: David Haun State: OR Sampling Point: SP-1
 Investigator(s): Chris Morris Section, Township, Range: 03-T17S-R11W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3-5%
 Subregion (LRR): LRR-A Lat: 44.988925 N Long: -124.009724 W Datum: HARN NAD83
 Soil Map Unit Name: Glenden silty clay loam NWI classification: Upland
 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="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---	--	--	---

Remarks: Site consists of single 50'x80' tax lot and is positioned on a hillside slope overlooking the Pacific Ocean. The northern portion of the lot had been previously stripped of vegetation and organics.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Alnus rubra</u>	10	Y	FAC	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%</u> (A/B)
2. _____				
3. _____				
4. _____				
10% = Total Cover				Prevalence Index worksheet: 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: <u>15' r</u>) 1. <u>None</u> 2. _____ 3. _____ 4. _____ 5. _____				
0% = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>) 1. <u>Poa pratensis</u> 2. <u>Geranium sp</u> 3. <u>Trifolium repens</u> 4. <u>Equisetum arvense</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				
95% = Total Cover				
Woody Vine Stratum (Plot size: <u>30' r</u>) 1. <u>None</u> 2. _____				
0% = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

SOIL

Sampling Point: _____

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 ¹	Loc ²		
0-3	10YR 2/2	100					SL	
3-10	10YR 2/1	98	7.5YR 4/6	2	C	M	CL	PROM
10-20	10YR 4/2	95	7.5YR 4/6	5	C	M	SC	PROM

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

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

Indicators for Problematic Hydric Soils³:

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

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators 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 (2 or more required)

- 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 along 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)

- 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, monitoring well, aerial photos, previous inspections), if available:

Remarks: The wetland hydrology supporting the wetlands downslope of the area of investigation comes from a hillside seep.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lot 10100 Delineation City/County: Lincoln Sampling Date: 9/19/19
 Applicant/Owner: David Haun State: OR Sampling Point: SP-2
 Investigator(s): Chris Morris Section, Township, Range: 03-T17S-R11W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3-5%
 Subregion (LRR): LRR-A Lat: 44.988917 N Long: -124.009748 W Datum: HARN NAD83
 Soil Map Unit Name: Glenden silty clay loam NWI classification: Upland
 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="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---	--	--

Remarks: Site consists of single 50'x80' tax lot and is positioned on a hillside slope overlooking the Pacific Ocean. The northern portion of the lot had been previously stripped of vegetation and organics.

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	Notes
Tree Stratum (Plot size: <u>30' r</u>)					
1. <u>Alnus rubra</u>		5	Y	FAC	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>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. <u>Pnus cortata</u>		10	Y	FAC	
3. <u>Rhamus purshiana</u>		15	Y	FAC	
4. _____					
		30% = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15' r</u>)					
1. <u>Rosa nutkana</u>		2%	Y	FAC	Prevalence Index worksheet: 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 = _____
2. <u>Ramus purshiana</u>		Trace	N	FAC	
3. _____					
4. _____					
5. _____					
		3% = Total Cover			
Herb Stratum (Plot size: <u>5' r</u>)					
1. <u>Poa pratensis</u>		70%	Y	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Geranium sp</u>		10%	N	UNK	
3. <u>Taraxacum officinale</u>		3%	N	FACU	
4. <u>Equisetum arvense</u>		10%	N	FAC	
5. <u>Rubus armenicus</u>		5%	N	FAC	
6. <u>Sphagnum sp</u>		2%	N	UNK	
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		100% = Total Cover			
Woody Vine Stratum (Plot size: <u>30' r</u>)					
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

SOIL

Sampling Point:

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 ¹	Loc ²		
0-7	10YR 2/2	100					L	
7-13	10YR 2/1	90	7.5YR 3/6	10	C	M	CL	PROM
13-20	10YR 4/2	80	7.5YR 3/6	20	C	M	SC	PROM

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<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 MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<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)	³ 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"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
--	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			Secondary Indicators (2 or more 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 along 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? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>11</u>	

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

Remarks: The wetland hydrology supporting the wetlands downslope of the area of investigation comes from a hillside seep.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lot 10100 Delineation City/County: Lincoln Sampling Date: 9/19/19
 Applicant/Owner: David Haun State: OR Sampling Point: SP-3
 Investigator(s): Chris Morris Section, Township, Range: 03-T17S-R11W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-3%
 Subregion (LRR): LRR-A Lat: 44.988950 N Long: -124.009724 W Datum: HARN NAD83
 Soil Map Unit Name: Glenden silty clay loam NWI classification: Upland
 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="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Site consists of single 50'x80' tax lot and is positioned on a hillside slope overlooking the Pacific Ocean. The northern portion of the lot had been previously stripped of vegetation and organics.

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u>	<u>(Plot size: 30' r)</u>				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%</u> (A/B)
1. <u>Alnus rubra</u>		10	Y	FAC	
2. _____					
3. _____					
4. _____					
		10% = Total Cover			Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <input type="checkbox"/> x 1 = <input type="checkbox"/> FACW species <input type="checkbox"/> x 2 = <input type="checkbox"/> FAC species <input type="checkbox"/> x 3 = <input type="checkbox"/> FACU species <input type="checkbox"/> x 4 = <input type="checkbox"/> UPL species <input type="checkbox"/> x 5 = <input type="checkbox"/> Column Totals: <input type="checkbox"/> (A) <input type="checkbox"/> (B) Prevalence Index = B/A = <input type="checkbox"/>
<u>Sapling/Shrub Stratum</u>	<u>(Plot size: 15' r)</u>				
1. <u>Rosa nutkana</u>		5	Y	FAC	
2. <u>Rhamnus purshian</u>		2	Y	FAC	
3. _____					
4. _____					
5. _____					
		7% = Total Cover			
<u>Herb Stratum</u>	<u>(Plot size: 5' r)</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rubus armenicus</u>		30%	Y	FAC	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		30% = Total Cover			
<u>Woody Vine Stratum</u>	<u>(Plot size: 30' r)</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>None</u>					
2. _____					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>70%</u>					

Remarks: Vegetation and organics stripped during construction of adjacent lot. Hydrophytic vegetation highly likely based on adjacent vegetation.

SOIL

Sampling Point: _____

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 ¹	Loc ²		
0-12	10YR 2/2	100					L	
12-22	10YR 4/2	95	7.5YR 4/6	5	C	M	CL	PROM

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

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

Indicators for Problematic Hydric Soils³:

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

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators 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 (2 or more required)

- 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 along 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)

- 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? Yes No Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks: The wetland hydrology supporting the wetlands downslope of the area of investigation comes from a hillside seep.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lot 10100 Delineation City/County: Lincoln Sampling Date: 9/19/19
 Applicant/Owner: David Haun State: OR Sampling Point: SP-4
 Investigator(s): Chris Morris Section, Township, Range: 03-T17S-R11W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-10%
 Subregion (LRR): LRR-A Lat: 44.988950 N Long: -124.009771 W Datum: HARN NAD83
 Soil Map Unit Name: Glenden silty clay loam NWI classification: Upland
 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="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	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"/>			

Remarks: Site consists of single 50'x80' tax lot and is positioned on a hillside slope overlooking the Pacific Ocean. The northern portion of the lot had been previously stripped of vegetation and organics.

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u>	<u>(Plot size: 30' r)</u>				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%</u> (A/B)
1. <u>Alnus rubra</u>		<u>30%</u>	<u>Y</u>	<u>FAC</u>	
2. _____					
3. _____					
4. _____					
		<u>30%</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u>	<u>(Plot size: 15' r)</u>				Prevalence Index worksheet: 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 = _____
1. <u>Rosa Nutkana</u>		<u>10%</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Rhamnus purshiana</u>		<u>10%</u>	<u>Y</u>	<u>FAC</u>	
3. _____					
4. _____					
5. _____					
		<u>20%</u>	= Total Cover		
<u>Herb Stratum</u>	<u>(Plot size: 5' r)</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rubus armenicus</u>		<u>40%</u>	<u>Y</u>	<u>FAC</u>	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		<u>40%</u>	= Total Cover		
<u>Woody Vine Stratum</u>	<u>(Plot size: 30' r)</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>None</u>					
2. _____					
		<u>0%</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>60%</u>					

Remarks: **Vegetation and organics stripped during construction of adjacent lot. Hydrophytic vegetation highly likely based on adjacent vegetation.**

SOIL

Sampling Point:

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 ¹	Loc ²		
0-6	10YR 2/2	100					L	
6-12	10YR 3/2	95	7.5YR 3/6	5	C	M	CL	PROM
12-20	10YR 4/2	85	7.5YR 4/6	15	C	M	SC	PROM

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

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

Indicators for Problematic Hydric Soils³:

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

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators 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 (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 along 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 No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): 11

Wetland Hydrology Present? Yes No

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

Remarks: The wetland hydrology supporting the wetlands downslope of the area of investigation comes from a hillside seep.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lot 10100 Delineation City/County: Lincoln Sampling Date: 9/19/19
 Applicant/Owner: David Haun State: OR Sampling Point: SP-5
 Investigator(s): Chris Morris Section, Township, Range: 03-T17S-R11W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-10%
 Subregion (LRR): LRR-A Lat: 44.988973 N Long: -124.009914 W Datum: HARN NAD83
 Soil Map Unit Name: Glenden silty clay loam NWI classification: Upland
 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="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---	--	--

Remarks: Site consists of single 50'x80' tax lot and is positioned on a hillside slope overlooking the Pacific Ocean. The northern portion of the lot had been previously stripped of vegetation and organics.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Alnus rubra</u>	30	Y	FAC	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%</u> (A/B)
2. <u>Rhamnus purshiana</u>	10	Y	FAC	
3. _____				
4. _____				
<u>40%</u> = Total Cover				Prevalence Index worksheet: 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: <u>15' r</u>)				
1. <u>None</u>				
2. _____				
3. _____				
4. _____				
5. _____				
<u>0%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>None</u>				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>0%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30' r</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>None</u>				
2. _____				
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>100%</u>				

Remarks: **Vegetation and organics stripped during construction of adjacent lot. Hydrophytic vegetation highly likely based on adjacent vegetation.**

SOIL

Sampling Point:

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 ¹	Loc ²		
0-13	10YR 3/2	100					SL	
13-20	10YR 3/1	90	7.5YR 5/8	10	C	M	CL	PROM

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<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 MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<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)	³ 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"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
--	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more 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 along 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? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		

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

Remarks: The wetland hydrology supporting the wetlands downslope of the area of investigation comes from a hillside seep.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lot 10100 Delineation City/County: Lincoln Sampling Date: 9/19/19
 Applicant/Owner: David Haun State: OR Sampling Point: SP-6
 Investigator(s): Chris Morris Section, Township, Range: 03-T17S-R11W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-10%
 Subregion (LRR): LRR-A Lat: 44.988957 N Long: -124.009927 W Datum: HARN NAD83
 Soil Map Unit Name: Glenden silty clay loam NWI classification: Upland
 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="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---	--	--

Remarks: Site consists of single 50'x80' tax lot and is positioned on a hillside slope overlooking the Pacific Ocean. The northern portion of the lot had been previously stripped of vegetation and organics.

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	Worksheet
<u>Tree Stratum</u>	<u>(Plot size: 30' r)</u>				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%</u> (A/B)
1. <u>Alnus rubra</u>		<u>30</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Rhamnus purshiana</u>		<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____					
<u>50%</u> = Total Cover					Prevalence Index worksheet: 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 = _____
<u>Sapling/Shrub Stratum</u>	<u>(Plot size: 15' r)</u>				
1. <u>None</u>					
2. _____					
3. _____					
<u>0%</u> = Total Cover					
<u>Herb Stratum</u>	<u>(Plot size: 5' r)</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rubus armenicus</u>		<u>40%</u>	<u>Y</u>	<u>FAC</u>	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>40%</u> = Total Cover					
<u>Woody Vine Stratum</u>	<u>(Plot size: 30' r)</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>None</u>					
2. _____					
<u>0%</u> = Total Cover					
% Bare Ground in Herb Stratum <u>60%</u>					

Remarks: **Vegetation and organics stripped during construction of adjacent lot. Hydrophytic vegetation highly likely based on adjacent vegetation.**

SOIL

Sampling Point: _____

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 ¹	Loc ²		
0-8	10YR 2/2	100					SL	
8-14	10YR 2/2	90	7.5YR 3/6	10	C	M	CL	PROM
14-20	10YR 4/2	80	7.5YR 3/6	20	C	M	SC	PROM

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<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 MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<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)	³ 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"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
--	---

Remarks: _____

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more 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 along 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? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 10	

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

Remarks: The wetland hydrology supporting the wetlands downslope of the area of investigation comes from a hillside seep.

APPENDIX C

Study Area Photographs





Photo 1 Blackberry patch looking north.



Photo 2 Sample Plots 3 &4 looking south.



Photo 3 Sample Plots 1 & 3 looking west.



Photo 4 Within the wetland looking southeast across the study area.



Photo 5 Within the wetland looking northwest across the study area.



Photo 6 Within the wetland looking west.



Photo 7 Within the wetland looking west northwest.



Photo 8 At the southeast property corner looking west across the study area.

APPENDIX D

Citations



Literature Citations

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