

Wetland Delineation
Tax Lot 4100
Cannon Beach, Oregon
(Township 5N, Range 10W, Section 30DA,
Tax Lot 4100, Clatsop County)

Prepared for

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I. INTRODUCTION

Pacific Habitat Services, Inc. (PHS) identified and delineated the limits of wetland on Tax Lot 4100, which is located southwest of the intersection of Forest Lawn Drive and South Hemlock Street in the western portion of Cannon Beach, Oregon (Township 5 North, Range 10 West, Section 30DA, Clatsop County). This report describes the results of PHS's wetland delineation fieldwork at the site. Figures, including a map depicting the location of wetland, are in Appendix A. Data sheets documenting existing conditions are provided in Appendix B. Ground-level photos of the study area are included in Appendix C. A discussion of the wetland delineation methodology (for the client) is provided in Appendix D.

II. RESULTS AND DISCUSSION

A. Landscape Setting and Land Use

The subject site is an undeveloped 1.10-acre property located within a residential area of west Cannon Beach. Forest Lawn Drive borders the western edge of the site and South Hemlock Street is located along the eastern edge of the property. These two roads intersect at the northeastern corner of the property. A house is located offsite and adjacent to the southwestern edge of the property, and a mowed lawn borders the southeastern edge. Site topography gradually slopes downward from the southwestern corner of the property to the northern portion of the site. The southern half of the site includes a mature stand of Sitka spruce and red alder, whereas the northern half of the property primarily consists of a scrub-shrub plant community.

B. Site Alterations

As noted above, the parcel is undeveloped. PHS did not note any recent alterations at the time of the wetland delineation fieldwork.

C. Precipitation Data and Analysis

PHS conducted the wetland delineation fieldwork and collected data to document the presence/absence of jurisdictional wetlands on the site on December 9, 2020. Table 1 compares the average monthly precipitation to the observed monthly precipitation as recorded at the Seaside, Oregon WETS station, in the months prior to the fieldwork. This table also compares the observed precipitation to the average precipitation range as identified in the NRCS WETS table for the Seaside, Oregon WETS station.

Table 1. Comparison of average and observed monthly precipitation at the Seaside, Oregon WETS station prior to the December 2020 wetland delineation fieldwork.

Month	Average Precipitation ¹	30% Chance Will Have		Observed Precipitation ²	Percent of Normal
		Less Than Average ¹	More Than Average ¹		
September	2.84	1.03	3.43	4.39	155
October	6.07	3.37	7.40	6.33	104
November	11.32	8.25	13.33	9.19	81

¹ NRCS WETS Table for the Seaside, Oregon WETS Station source: <http://agacis.rcc-acis.org/?fips=41007>

² Observed precipitation source: <http://agacis.rcc-acis.org/?fips=41007>

As shown in Table 1, observed precipitation was above average and above the normal range for September. In October, the observed precipitation was slightly above average and on the higher end of the normal range. Observed precipitation in November was slightly below average and closer to the lower end of the normal range. Total observed precipitation for the water-year (October 1, 2019 through September 30, 2020) was 70.92 inches, which is approximately 94 percent of normal for this same period (75.30 inches). Consistent with the high and near normal amounts of precipitation in the months preceding the wetland delineation fieldwork, precipitation for the water-year was also near normal.

D. Methods

PHS identified jurisdictional wetland within the subject site based on the presence of wetland hydrology, hydric soils and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* (“The 1987 Manual”) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*. PHS conducted the wetland delineation fieldwork and collected data to document the presence/absence of jurisdictional wetland on the site on December 9, 2020. PHS dug and examined soil pits throughout the study area, and based on the investigation, determined that there is one wetland present within the property.

E. Description of All Wetlands

PHS identified one wetland primarily located within the northern half of the site, which also extended into the southwestern and southeastern portions of the property. A description of the wetland is provided below.

Wetland A

Wetland A (29,618 sf / 0.68 ac) occurs within topographically low-lying areas in the northern half of the site, and as a mosaic wetland adjacent to slightly higher portions of the property in the southern half of the site. In a couple of areas along the eastern edge of the site, the wetland extends beyond the eastern property boundary and continues along South Hemlock Street. The Cowardin classification of the wetland is palustrine scrub-shrub (PSS) in the northern half of the site, and a mosaic of PSS and palustrine emergent (PEM) wetland in the southwestern and southeastern portions of the site; the hydrogeomorphic (HGM) classification is Slope.

Sample Points 1, 4 and 5 characterize the wetland plant community within Wetland A. The canopy layer includes Sitka spruce (*Picea sitchensis*, FAC) and red alder (*Alnus rubra*, FAC). The shrub understory and groundcover include Hooker’s willow (*Salix hookeriana*, FACW), four-line honeysuckle (*Lonicera involucrata*, FAC), Himalayan blackberry (*Rubus armeniacus*, FAC), tall false rye grass (*Schedonorus arundinaceus*, FAC), Western lady fern (*Athyrium cyclosorum*, FAC), field horsetail (*Equisetum arvense*, FAC), slough sedge (*Carex obnupta*, OBL), and water parsley (*Oenanthe sarmentosa*, OBL).

Soils within the wetland meet the criteria for the following indicators: redox dark surface, depleted matrix, and histic epipedon (muck). Soils within the wetland were generally saturated to the surface at the time of PHS’s site visit. A high water table, saturation and geomorphic position provided evidence

of wetland hydrology. A seasonally high water table, precipitation and surface runoff from the adjacent surrounding areas contribute to the hydrology of this wetland.

It should be noted that other factors contributing to the hydrology of this wetland include the following:

- Stormwater runoff from the roof of a house that is located immediately to the south of the site appears to drain directly onto the site (see Photo E in Appendix C).
- A City stormwater pipe that is connected to a catch basin on the west side of Forest Lawn Drive extends beneath the road and drains stormwater onto the site. This stormwater comes from several houses along Forest Lawn Drive and the road itself. The stormwater flows into a couple of catch basins along Forest Lawn Drive, south of the site, then continues to flow to the north through a storm pipe and drains into the catch basin on the west side of the road that outfalls onto the site.
- Another City storm pipe is located at the north end of the property along South Hemlock Street. This is a 12-inch storm pipe that extends from the site, is culverted beneath the road to the east side of the street where it is connected to the City's storm system. The storm pipe has been clogged with dirt and debris, which does not allow stormwater to drain off the site, as intended, and as such, likely impounds stormwater at the northern end of the site.

Sample Points 2, 3, 6 and 7 characterize non-wetland areas adjacent to Wetland A. The plant communities in these areas include Sitka spruce, Western hemlock (*Tsuga heterophylla*, FACU), salal (*Gaultheria shallon*, FACU), Evergreen huckleberry (*Vaccinium ovatum*, FACU), English Holly (*Ilex aquifolium*, FACU), Western sword fern (*Polystichum munitum*, FACU), Northern bracken fern (*Pteridium aquilinum*, FACU), false lily-of-the-valley (*Maianthemum dilatatum*, FAC), Pacific dewberry (*Rubus ursinus*, FACU), and English ivy (*Hedera helix*, FACU). With the exception of Sample Point 3, the soils at these sample points are not hydric, and evidence of wetland hydrology was not observed at any of these sample points.

F. Deviation from Local Wetland Inventory

The Local Wetland Inventory map shows one large wetland area, with the southern portion consisting of a wetland/upland mosaic. PHS also found the southern portion of the wetland to contain a mosaic; however, the overall size of our delineated wetland is smaller than that shown in the LWI. This discrepancy, in part may be because the LWI mapping may have been limited to off-site determinations because of a lack of site access authorization, which limits "ground-truthing" to confirm interpretations derived from off-site maps and information.

G. Mapping Method

PHS flagged the wetland boundaries with blue flagging tape and sample points with lime-green flagging tape. The boundary and sample point flags were survey-located by S & F Land Services. The accuracy of the survey, sample points and tax lot boundaries is sub-centimeter.

H. Additional Information

None.

I. Results and Conclusions

PHS delineated one jurisdictional wetland (Wetland A: 29,618 sf / 0.68 ac) within Tax Lot 4100.

J. Required Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our 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.

III. REFERENCES

Adamus, P.R. and D. Field. 2001 *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Study areas. Willamette Valley Ecoregion, Riverine Impounding and Slopes/Flats Subclasses*. Oregon Division of State Lands, Salem, OR.

GoogleEarth Map, 2020. Aerial Photo, June 2017

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *State of Oregon 2016 Plant List. The National Wetland Plant List: 2016 Wetland Ratings*. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
http://rsgisias.crrel.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/OR_2016v1.pdf

Munsell Color, 2010. *Munsell Soil Color Charts*. Grand Rapids, Michigan. 2009 Year Revised, 2010 Production.

Natural Resources Conservation Service (NRCS) Agricultural Science Information System (AgACIS) for Clatsop County. <http://agacis.rcc-acis.org/?fips=41007>

Natural Resources Conservation Service (NRCS) WETS Table for the Seaside, Oregon WETS Station. Source: <http://agacis.rcc-acis.org/?fips=41007>

Oregon Department of State Lands. September 2001. *Removal-Fill Law (ORS 196.800-196.990) and Removal and Filling in Scenic Waterways (ORS 390.805-390.925)*.

ORMAP tax maps, 2020. <http://www.ormap.net/>

US Army Corps of Engineers, Environmental Laboratory, 1987. *Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1*.

US Army Corps of Engineers, Environmental Laboratory, 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*.

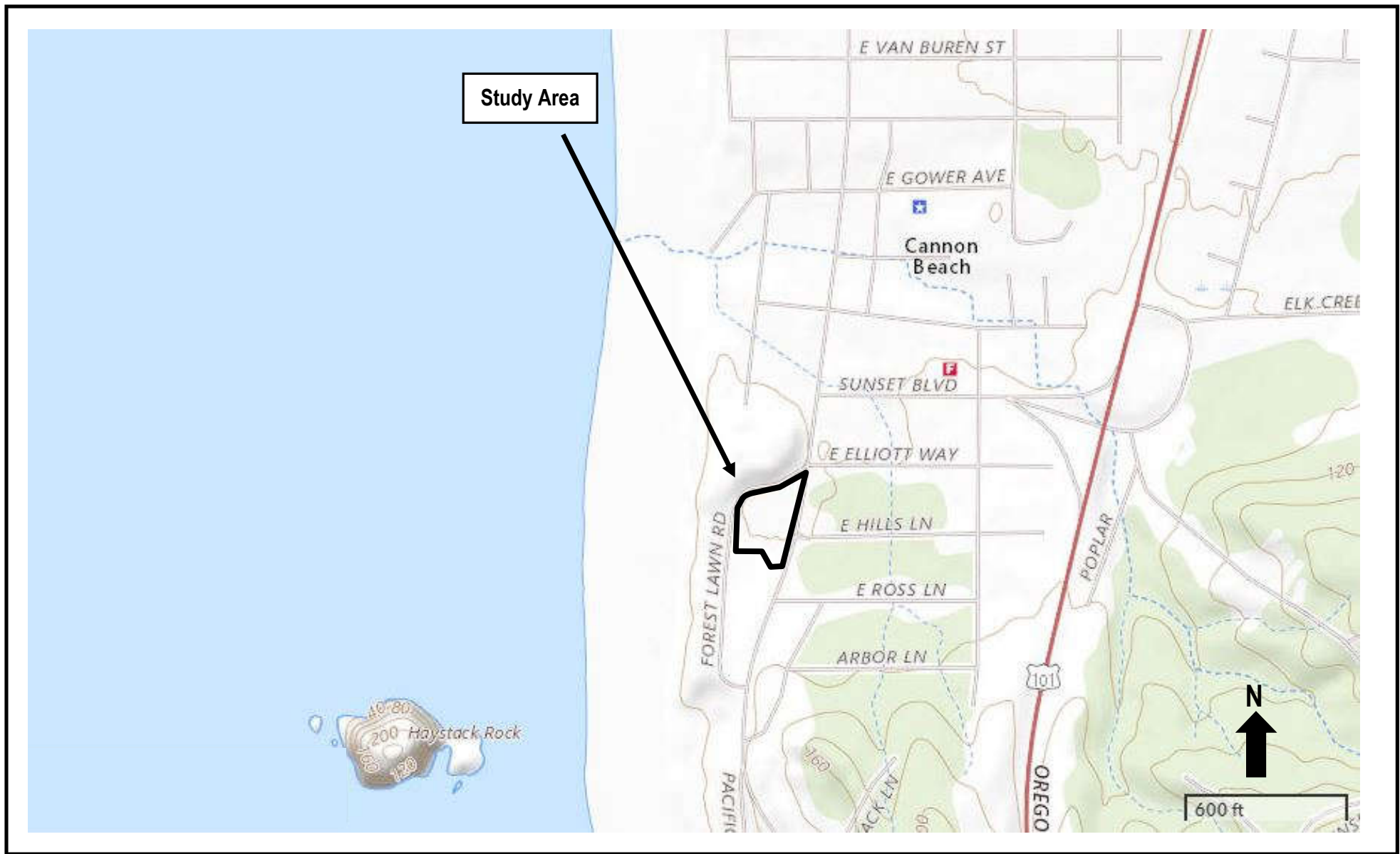
US Department of Agriculture, Natural Resources Conservation Service, 2020. *Web Soil Survey*.

US Geological Survey, 2020. *7.5-minute topographic map, Tillamook Head, Oregon Quadrangle*.

Appendix A

Figures





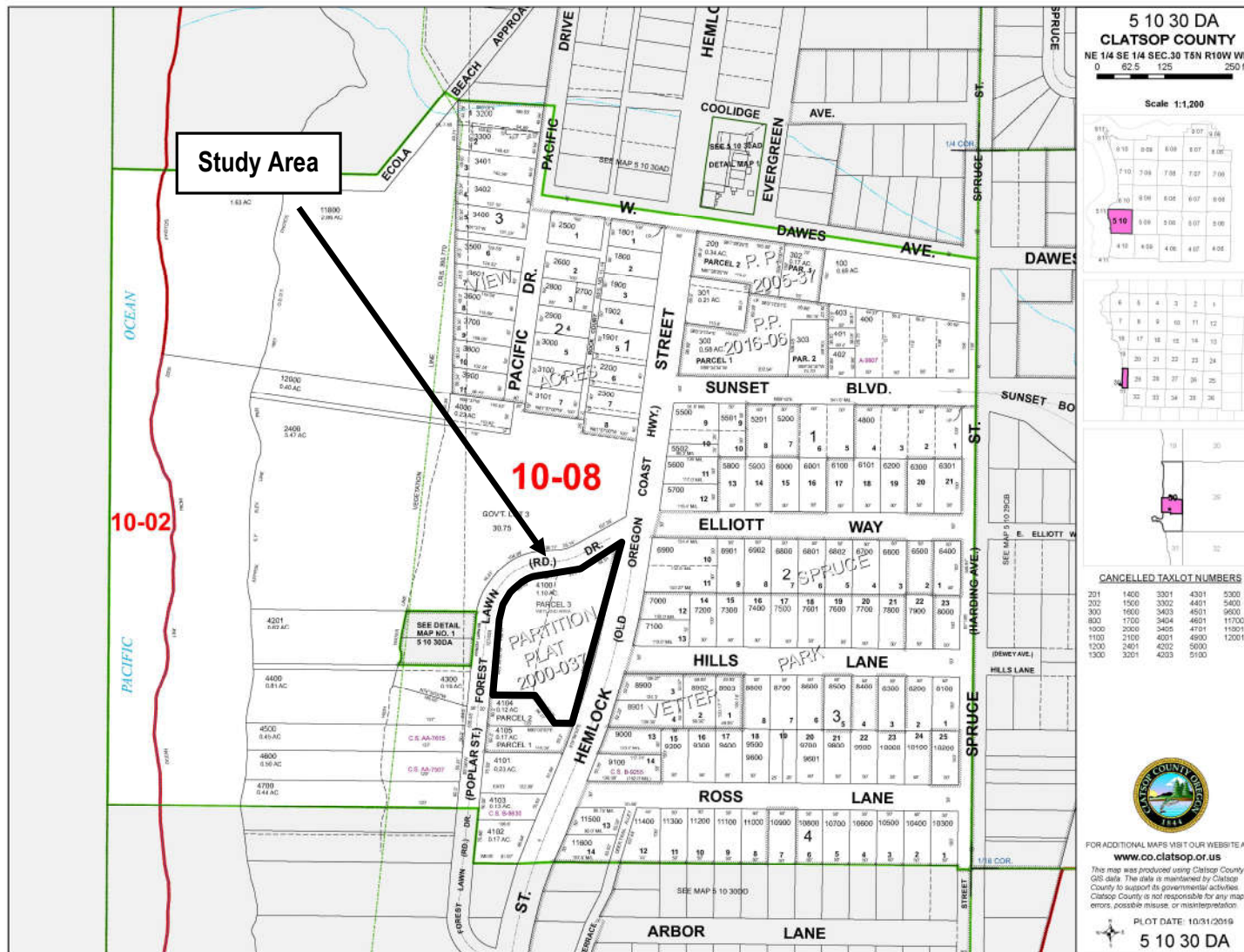
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General Location and Topography
Tax Lot 4100 - Cannon Beach, Oregon
United States Geological Survey (USGS) Tillamook Head, Oregon 7.5 quadrangle, 2020
(viewer.nationalmap.gov/basic)

FIGURE
1



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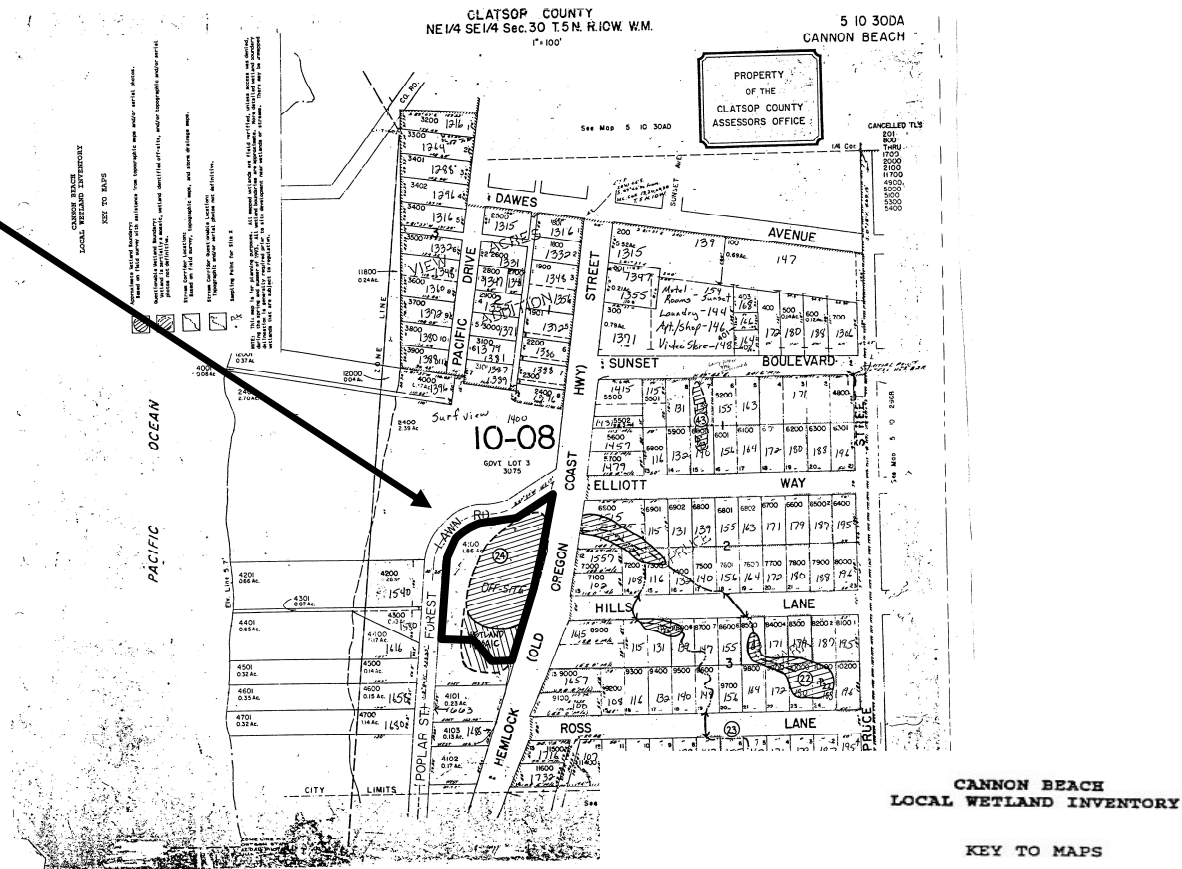
Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

Tax Lot Map
Tax Lot 4100 - Cannon Beach, Oregon
The Oregon Map (ormap.net)

FIGURE

2

Study Area



- KEY TO MAPS**
- Approximate Wetland Boundary:**
Based on field survey with assistance from topographic maps and/or aerial photos.
 - Questionable Wetland Boundary:**
Wetland is partially a mosaic, wetland identified off-site, and/or topographic and/or aerial photos not definitive.
 - Stream Corridor Location:**
Based on field survey, topographic maps, and storm drainage maps.
 - Stream Corridor Questionable Location:**
Topographic and/or aerial photos not definitive.
 - Sampling Point for Site X**

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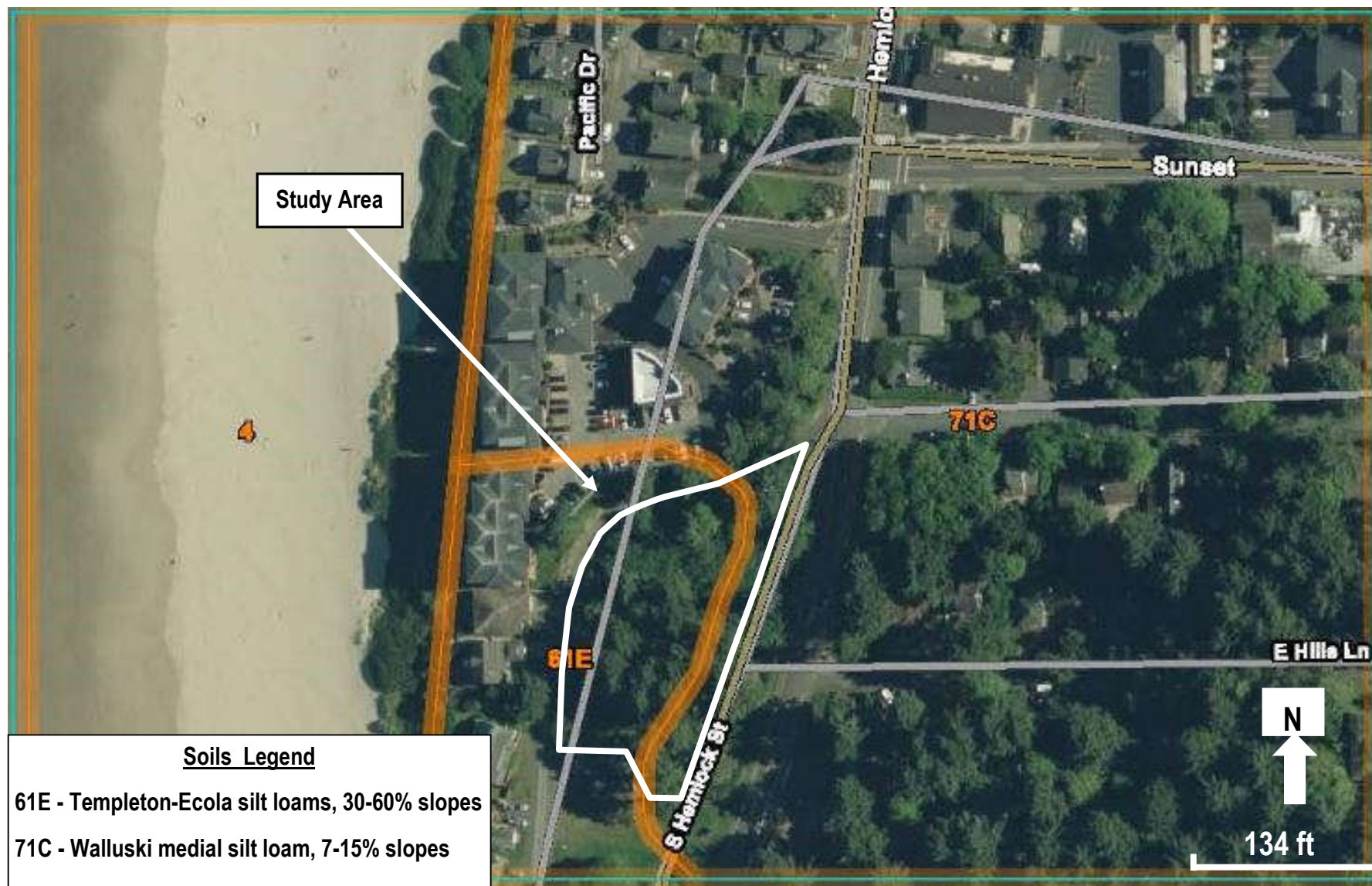
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LWI

Tax Lot 4100 - Cannon Beach, Oregon
Fishman Environmental Services, 1994

FIGURE

3



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Soils
Tax Lot 4100 - Cannon Beach, Oregon
Natural Resources Conservation Services, Web Soil Survey, 2020
(websoilsurvey.sc.egov.usda.gov)



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2/16/2021

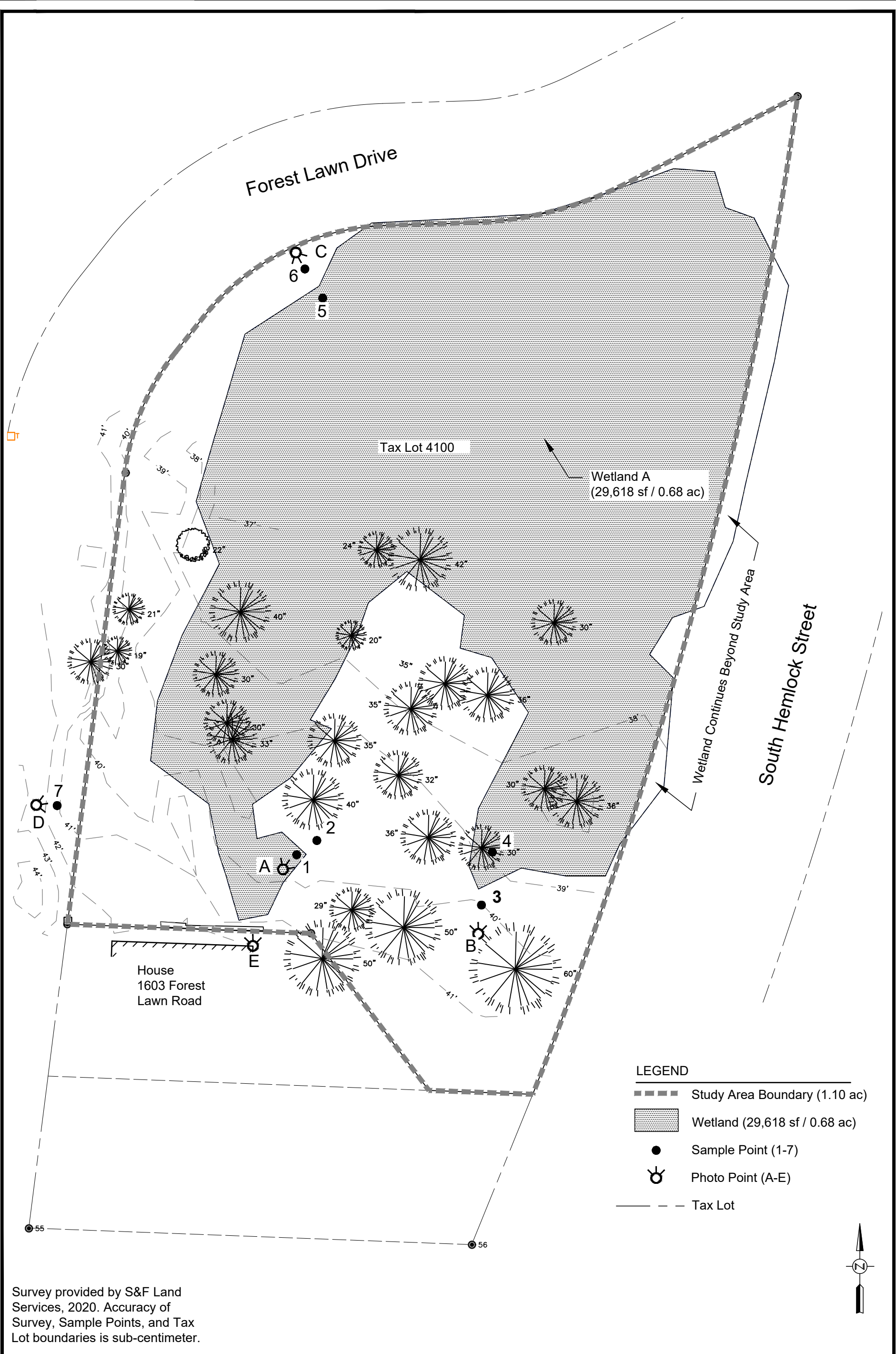


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Aerial Photo
Tax Lot 4100 - Cannon Beach, Oregon
GoogleEarth, 2020

FIGURE

5



Wetland Delineation
Tax Lot 4100 - Cannon Beach, Oregon

FIGURE
6

3-19-2021

Appendix B

Wetland Determination Data Sheets



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

Project/Site: Tax Lot 4100 City/County: Cannon Beach/Clatsop Sampling Date: 12/9/2020

Applicant/Owner: Patrick/Dave, LLC State: OR Sampling Point: 1

Investigator(s): CR, SE Section, Township, Range: Section 30DA, Township 5N, Range 10W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): LRR A Lat: 45.8864 Long: -123.9631 Datum: WGS84

Soil Map Unit Name: Templeton-Ecola Silt Loams NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks)

Are vegetation Soil or Hydrology X significantly disturbed? Are "Normal Circumstances" present? (Y/N) N

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 <u>X</u>	No <u> </u>	Is Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Remarks:

Stormwater runoff from the roof of a house, located offsite immediately to the south, contributes to the hydrology of this area.

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: <u> </u>)				Dominance Test worksheet:
1 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Number of Dominant Species
2 <u> </u>	<u> </u>	<u> </u>	<u> </u>	That are OBL, FACW, or FAC: <u>3</u> (A)
3 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Total Number of Dominant
4 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Species Across All Strata: <u>4</u> (B)
	<u>0</u>	= Total Cover		Percent of Dominant Species
Sapling/Shrub Stratum (plot size: <u>15</u>)				That are OBL, FACW, or FAC: <u>75%</u> (A/B)
1 <u>Lonicera involucrata</u>	<u>10</u>	<u>X</u>	<u>FAC</u>	Prevalence Index Worksheet:
2 <u>Rubus armeniacus</u>	<u>5</u>	<u>X</u>	<u>FAC</u>	Total % Cover of <u> </u> Multiply by: <u> </u>
3 <u> </u>	<u> </u>	<u> </u>	<u> </u>	OBL Species <u> </u> x 1 = <u>0</u>
4 <u> </u>	<u> </u>	<u> </u>	<u> </u>	FACW species <u> </u> x 2 = <u>0</u>
5 <u> </u>	<u> </u>	<u> </u>	<u> </u>	FAC Species <u> </u> x 3 = <u>0</u>
	<u>15</u>	= Total Cover		FACU Species <u> </u> x 4 = <u>0</u>
Herb Stratum (plot size: <u>5</u>)				UPL Species <u> </u> x 5 = <u>0</u>
1 <u>Schedonorus arundinaceus</u>	<u>60</u>	<u>X</u>	<u>FAC</u>	Column Totals <u>0</u> (A) <u>0</u> (B)
2 <u>Oenanthe sarmentosa</u>	<u>10</u>	<u> </u>	<u>OBL</u>	Prevalence Index =B/A = <u>#DIV/0!</u>
3 <u>Gaultheria shallon</u>	<u>5</u>	<u> </u>	<u>FACU</u>	
4 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Indicators:
5 <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> 1- Rapid Test for Hydrophytic Vegetation
6 <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u> 2- Dominance Test is >50%
7 <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> 3-Prevalence Index is ≤ 3.0 ¹
8 <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> 4-Morphological Adaptations ¹ (provide supporting
	<u>75</u>	= Total Cover		<u> </u> data in Remarks or on a separate sheet)
Woody Vine Stratum (plot size: <u>15</u>)				<u> </u> 5- Wetland Non-Vascular Plants ¹
1 <u>Hedera helix</u>	<u>15</u>	<u>X</u>	<u>FACU</u>	<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
2 <u> </u>	<u> </u>	<u> </u>	<u> </u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless
	<u>15</u>	= Total Cover		disturbed or problematic.
% Bare Ground in Herb Stratum <u> </u>				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
Remarks:				

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		
0-4	10YR 2/1	100					Silt Loam	High organics
4-12	10YR 2/1	100					Sandy Loam	High organics

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 :			
	Histosol (A1)		Sandy Redox (S5)		2 cm Muck (A10)		
	Histic Epipedon (A2)		Stripped Matrix (S6)		Red Parent Material (TF2)		
	Black Histic (A3)		Loamy Mucky Mineral (F1) (except MLRA 1)		Very Shallow Dark Surface (TF12)		
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)		X Other (explain in Remarks)		
	Depleted Below Dark Surface (A11)		Depleted Matrix (F3)				
	Thick Dark Surface (A12)		Redox Dark Surface (F6)				
	Sandy Mucky Mineral (S1)		Depleted Dark Surface (F7)				
	Sandy Gleyed Matrix (S4)		Redox Depressions (F8)				

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

Restrictive Layer (if present):

Type:
Depth (inches):

Hydric Soil Present? YesXNo

Remarks:
Soils are very dark with no evidence of oxidation. Hydric criteria satisfied by presence of hydrology for at least 14 days during the growing season.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
	Surface Water (A1)		Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)
X	High Water Table (A2)		
X	Saturation (A3)		Drainage Patterns (B10)
	Water Marks (B1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Saturation Visible on Aerial Imagery (C9)
	Drift Deposits (B3)		Geomorphic Position (D2)
	Algal Mat or Crust (B4)		Shallow Aquitard (D3)
	Iron Deposits (B5)		Fac-Neutral Test (D5)
	Surface Soil Cracks (B6)		Raised Ant Mounds (D6) (LRR A)
	Inundation Visible on Aerial Imagery (B7)		Frost-Heave Hummocks (D7)
	Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? YesNoXDepth (inches):

Water Table Present? YesXNoDepth (inches):8

Saturation Present? YesXNoDepth (inches):4

Wetland Hydrology Present? YesXNo

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

Remarks:

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

Project/Site: Tax Lot 4100 City/County: Cannon Beach/Clatsop Sampling Date: 12/9/2020
 Applicant/Owner: Patrick/Dave, LLC State: OR Sampling Point: 2
 Investigator(s): CR, SE Section, Township, Range: Section 30DA, Township 5N, Range 10W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): LRR A Lat: 45.8864 Long: -123.9631 Datum: WGS84
 Soil Map Unit Name: Templeton-Ecola Silt Loams NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)

Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

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 <u>X</u>	No _____	Is Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: <u>30</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>5</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>60%</u> (A/B)
1 <u><i>Picea sitchensis</i></u>	<u>70</u>	<u>X</u>	<u>FAC</u>	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
	<u>70</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: <u>15</u>)				
1 <u><i>Gaultheria shallon</i></u>	<u>70</u>	<u>X</u>	<u>FACU</u>	
2 <u><i>Picea sitchensis</i></u>	<u>30</u>	<u>X</u>	<u>FAC</u>	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
	<u>100</u>	= Total Cover		
Herb Stratum (plot size: <u>5</u>)				Prevalence Index Worksheet: Total % Cover of _____ Multiply by: _____ OBL Species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>
1 <u><i>Schedonorus arundinaceus</i></u>	<u>85</u>	<u>X</u>	<u>FAC</u>	
2 <u><i>Pteridium aquilinum</i></u>	<u>10</u>	_____	<u>FACU</u>	
3 <u><i>Equisetum arvense</i></u>	<u>5</u>	_____	<u>FAC</u>	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
	<u>100</u>	= Total Cover		
Woody Vine Stratum (plot size: <u>15</u>)				
1 <u><i>Hedera helix</i></u>	<u>15</u>	<u>X</u>	<u>FACU</u>	
2 _____	_____	_____	_____	
	<u>15</u>	= Total Cover		
% Bare Ground in Herb Stratum _____				

Hydrophytic Vegetation Indicators:

- 1- Rapid Test for Hydrophytic Vegetation
X
 2- Dominance Test is >50%
 3-Prevalence Index is $\leq 3.0^1$
 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 5- Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

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		
0-16	10YR 2/1	100					Silt Loam	

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 type="checkbox"/> Redox Dark Surface (F6)	
<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)	

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

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

Restrictive Layer (if present):

Type:
Depth (inches):

Hydric Soil Present? YesNoX

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) (MLRA1, 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 Plowed 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? YesNoXDepth (inches):

Water Table Present? YesXNoDepth (inches):14

Saturation Present? YesXNoDepth (inches):14

Wetland Hydrology Present? YesNoX

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

Remarks:

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

Project/Site: Tax Lot 4100 City/County: Cannon Beach/Clatsop Sampling Date: 12/9/2020
 Applicant/Owner: Patrick/Dave, LLC State: OR Sampling Point: 3
 Investigator(s): CR, SE Section, Township, Range: Section 30DA, Township 5N, Range 10W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): LRR A Lat: 45.8864 Long: -123.9628 Datum: WGS84
 Soil Map Unit Name: Walluski Medial Silt Loam NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)

Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

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 _____	No <u>X</u>	Is Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks:

VEGETATION - Use scientific names of plants.

Tree Stratum (plot size: <u>30</u>)	absolute % cover	Dominant Species?	Indicator Status
1 <u><i>Picea sitchensis</i></u>	<u>60</u>	<u>X</u>	<u>FAC</u>
2 <u><i>Tsuga heterophylla</i></u>	<u>15</u>	<u>X</u>	<u>FACU</u>
3 _____	_____	_____	_____
4 _____	_____	_____	_____
	<u>75</u>	= Total Cover	
Sapling/Shrub Stratum (plot size: <u>15</u>)			
1 <u><i>Lonicera involucrata</i></u>	<u>25</u>	<u>X</u>	<u>FAC</u>
2 <u><i>Gaultheria shallon</i></u>	<u>20</u>	<u>X</u>	<u>FACU</u>
3 <u><i>Vaccinium ovatum</i></u>	<u>5</u>	_____	<u>FACU</u>
4 _____	_____	_____	_____
5 _____	_____	_____	_____
	<u>50</u>	= Total Cover	
Herb Stratum (plot size: <u>5</u>)			
1 <u><i>Polystichum munitum</i></u>	<u>30</u>	<u>X</u>	<u>FACU</u>
2 <u><i>Athyrium cyclosorum</i></u>	<u>25</u>	<u>X</u>	<u>FAC</u>
3 <u><i>Mianthemum dilatatum</i></u>	<u>1</u>	_____	<u>FAC</u>
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
	<u>56</u>	= Total Cover	
Woody Vine Stratum (plot size: <u>15</u>)			
1 <u><i>Hedera helix</i></u>	<u>80</u>	<u>X</u>	<u>FACU</u>
2 _____	_____	_____	_____
	<u>80</u>	= Total Cover	

% Bare Ground in Herb Stratum _____

Remarks:

Dominance Test worksheet:

Number of Dominant Species

That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant

Species Across All Strata: 7 (B)

Percent of Dominant Species

That are OBL, FACW, or FAC: 43% (A/B)

Prevalence Index Worksheet:

Total % Cover of

Multiply by:

OBL Species _____ x 1 = 0

FACW species _____ x 2 = 0

FAC Species _____ x 3 = 0

FACU Species _____ x 4 = 0

UPL Species _____ x 5 = 0

Column Totals 0 (A) 0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2- Dominance Test is >50%

_____ 3-Prevalence Index is ≤ 3.0 ¹

_____ 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)

_____ 5- Wetland Non-Vascular Plants¹

_____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic

Vegetation

Present?

Yes _____

No _____

X

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	7.5YR 2.5/2	100					Loam	High organics
6-13	5YR 2.5/1	95	7.5YR 2.5/2	5	C	M	Sandy Loam	High organics
13-18	10YR 2/1	100						Fine sandy loam
18-19	10YR 3/3	95	10YR 4/4	5	C	M	Sand	Medium

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 checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

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

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) (MLRA1, 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 Plowed 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 ☒

Water Table Present? Yes ☒ No ☐

Saturation Present? Yes ☒ No ☐

(includes capillary fringe)

Depth (inches):

Depth (inches):

17

Depth (inches):

1

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: Tax Lot 4100 City/County: Cannon Beach/Clatsop Sampling Date: 12/9/2020

Applicant/Owner: Patrick/Dave, LLC State: OR Sampling Point: 4

Investigator(s): CR, SE Section, Township, Range: Section 30DA, Township 5N, Range 10W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR A Lat: 45.8864 Long: -123.9628 Datum: WGS84

Soil Map Unit Name: Walluski Medial Silt Loam NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks)

Are vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

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 <u>X</u>	No <u> </u>	Is Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	
Remarks:			

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: <u>30</u>)				Dominance Test worksheet:
1 <u>Picea sitchensis</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	Number of Dominant Species
2 <u> </u>	<u> </u>	<u> </u>	<u> </u>	That are OBL, FACW, or FAC: <u>4</u> (A)
3 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Total Number of Dominant
4 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Species Across All Strata: <u>7</u> (B)
	<u>30</u>	= Total Cover		Percent of Dominant Species
Sapling/Shrub Stratum (plot size: <u>15</u>)				That are OBL, FACW, or FAC: <u>57%</u> (A/B)
1 <u>Lonicera involucrata</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	Prevalence Index Worksheet:
2 <u>Picea sitchensis</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	Total % Cover of
3 <u>Gaultheria shallon</u>	<u>15</u>	<u>X</u>	<u>FACU</u>	Multiply by:
4 <u>Ilex aquifolium</u>	<u>5</u>	<u> </u>	<u>FACU</u>	OBL Species <u> </u> x 1 = <u>0</u>
5 <u> </u>	<u> </u>	<u> </u>	<u> </u>	FACW species <u> </u> x 2 = <u>0</u>
	<u>70</u>	= Total Cover		FAC Species <u> </u> x 3 = <u>0</u>
Herb Stratum (plot size: <u>5</u>)				FACU Species <u> </u> x 4 = <u>0</u>
1 <u>Carex obnupta</u>	<u>100</u>	<u>X</u>	<u>OBL</u>	UPL Species <u> </u> x 5 = <u>0</u>
2 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Column Totals <u>0</u> (A) <u>0</u> (B)
3 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Prevalence Index =B/A = <u>#DIV/0!</u>
4 <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Indicators:
5 <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> 1- Rapid Test for Hydrophytic Vegetation
6 <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u> 2- Dominance Test is >50%
7 <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> 3-Prevalence Index is ≤ 3.0 ¹
8 <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> 4-Morphological Adaptations ¹ (provide supporting
	<u>100</u>	= Total Cover		data in Remarks or on a separate sheet)
Woody Vine Stratum (plot size: <u>15</u>)				<u> </u> 5- Wetland Non-Vascular Plants ¹
1 <u>Hedera helix</u>	<u>10</u>	<u>X</u>	<u>FACU</u>	<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
2 <u>Rubus ursinus</u>	<u>5</u>	<u>X</u>	<u>FACU</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless
	<u>15</u>	= Total Cover		disturbed or problematic.
% Bare Ground in Herb Stratum <u> </u>				Hydrophytic
				Vegetation
				Yes <u>X</u> No <u> </u>
				Present?
Remarks:				

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					Silt Loam	
7-16	10YR 2/1	60	7.5YR 3/4	40			Silt Loam	Fine-Medium

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)	
<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)	

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

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

Restrictive Layer (if present):

Type:
Depth (inches):

Hydric Soil Present? YesXNo

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input checked="" 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) (MLRA1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres 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 Plowed 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? YesNoX
Water Table Present? YesXNo
Saturation Present? YesXNo
(includes capillary fringe)

Depth (inches):
Depth (inches):
Depth (inches):

Wetland Hydrology Present? YesXNo

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

Remarks:

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

Project/Site: Tax Lot 4100 City/County: Cannon Beach/Clatsop Sampling Date: 12/9/2020

Applicant/Owner: Patrick/Dave, LLC State: OR Sampling Point: 5

Investigator(s): CR, SE Section, Township, Range: Section 30DA, Township 5N, Range 10W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR A Lat: 45.8869 Long: -123.9632 Datum: WGS84

Soil Map Unit Name: Templeton-Ecola Silt Loams NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks)

Are vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

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 <u>X</u>	No <u> </u>	Is Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: <u>30</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>67%</u> (A/B)
1 <u>Salix hookeriana</u>	<u>90</u>	<u>X</u>	<u>FACW</u>	
2 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
	<u>90</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: <u>15</u>)				
1 <u>Rubus armeniacus</u>	<u>90</u>	<u>X</u>	<u>FAC</u>	
2 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
	<u>90</u>	= Total Cover		
Herb Stratum (plot size: <u> </u>)				Prevalence Index Worksheet: Total % Cover of <u> </u> Multiply by: <u> </u> OBL Species <u> </u> x 1 = <u>0</u> FACW species <u> </u> x 2 = <u>0</u> FAC Species <u> </u> x 3 = <u>0</u> FACU Species <u> </u> x 4 = <u>0</u> UPL Species <u> </u> x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>
1 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
	<u>0</u>	= Total Cover		
Woody Vine Stratum (plot size: <u>15</u>)				
1 <u>Hedera helix</u>	<u>70</u>	<u>X</u>	<u>FACU</u>	
2 <u> </u>	<u> </u>	<u> </u>	<u> </u>	
	<u>70</u>	= Total Cover		
% Bare Ground in Herb Stratum <u> </u>				
Remarks:				

Hydrophytic Vegetation Indicators:

- 1- Rapid Test for Hydrophytic Vegetation X
- 2- Dominance Test is >50%
- 3-Prevalence Index is ≤ 3.0 ¹
- 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
- 5- Wetland Non-Vascular Plants¹
- Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

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	2.5YR 2.5/1	100					Sandy Loam	
3-6	10YR 2/1	100					Sandy Loam	High organics
6-8	10YR 2/1	85	5YR 3/3	15	C	M	Sandy Loam	Medium mottles
8-17	10YR 4/3	99	10YR 4/1	1	C	M	Sand	Fine sand, fine mottles

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 checked="" type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

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

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:

Depleted matrix soils begin within 6 inches, but as they are underlain by sand, there is insufficient thickness to satisfy that criteria. Would likely if not all sand beneath.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input checked="" 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) (MLRA1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres 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 Plowed 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 ☒

Water Table Present? Yes ☒ No ☐

Saturation Present? Yes ☒ No ☐

(includes capillary fringe)

Depth (inches):

Depth (inches):

12

Depth (inches):

11

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Pit was open for 3 hours.

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

Project/Site: Tax Lot 4100 City/County: Cannon Beach/Clatsop Sampling Date: 12/9/2020
 Applicant/Owner: Patrick/Dave, LLC State: OR Sampling Point: 6
 Investigator(s): CR, SE Section, Township, Range: Section 30DA, Township 5N, Range 10W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): LRR A Lat: 45.8869 Long: -123.9632 Datum: WGS84
 Soil Map Unit Name: Templeton-Ecola Silt Loams NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)

Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

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 <u>X</u>	No _____	Is Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: <u>30</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>67%</u> (A/B)
1 <u><i>Alnus rubra</i></u>	<u>60</u>	<u>X</u>	<u>FAC</u>	Prevalence Index Worksheet: Total % Cover of _____ Multiply by: OBL Species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>60</u> = Total Cover				
Sapling/Shrub Stratum (plot size: <u>15</u>)				
1 <u><i>Rubus armeniacus</i></u>	<u>75</u>	<u>X</u>	<u>FAC</u>	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>75</u> = Total Cover				
Herb Stratum (plot size: _____)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
<u>0</u> = Total Cover				
Woody Vine Stratum (plot size: <u>15</u>)				
1 <u><i>Hedera helix</i></u>	<u>40</u>	<u>X</u>	<u>FACU</u>	
2 _____	_____	_____	_____	
<u>40</u> = Total Cover				
% Bare Ground in Herb Stratum <u>50</u>				
Hydrophytic Vegetation Indicators: 1- Rapid Test for Hydrophytic Vegetation <u>X</u> 2- Dominance Test is >50% 3-Prevalence Index is ≤ 3.0 ¹ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) 5- Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____				

Remarks:

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		
0-9	10YR 2/2	100					Sandy Loam	
9-16	10YR 4/2	80					Sand	
	10YR 2/2	20					Sandy Loam	

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 type="checkbox"/> Redox Dark Surface (F6)	
<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)	

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

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 X

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) (MLRA1, 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 Plowed 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 X
Water Table Present? Yes No X
Saturation Present? Yes No X (includes capillary fringe)

Depth (inches):
Depth (inches):
Depth (inches):

Wetland Hydrology Present? Yes No X

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

Remarks:

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

Project/Site: Tax Lot 4100 City/County: Cannon Beach/Clatsop Sampling Date: 12/9/2020
 Applicant/Owner: Patrick/Dave, LLC State: OR Sampling Point: 7
 Investigator(s): CR, SE Section, Township, Range: Section 30DA, Township 5N, Range 10W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): LRR A Lat: 45.8865 Long: -123.9634 Datum: WGS84
 Soil Map Unit Name: Templeton-Ecola Silt Loams NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)

Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

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 <u>X</u>	No _____	Is Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: <u>30</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>6</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>67%</u> (A/B)
1 <u>Salix hookeriana</u>	<u>75</u>	<u>X</u>	<u>FACW</u>	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
	<u>75</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: <u>15</u>)				
1 <u>Gaultheria shallon</u>	<u>10</u>	<u>X</u>	<u>FACU</u>	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
	<u>10</u>	= Total Cover		
Herb Stratum (plot size: <u>5</u>)				Prevalence Index Worksheet: Total % Cover of _____ Multiply by: _____ OBL Species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>
1 <u>Equisetum arvense</u>	<u>50</u>	<u>X</u>	<u>FAC</u>	
2 <u>Mianthemum dilatatum</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	
3 <u>Ranunculus repens</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
	<u>100</u>	= Total Cover		
Woody Vine Stratum (plot size: <u>15</u>)				
1 <u>Hedera helix</u>	<u>80</u>	<u>X</u>	<u>FACU</u>	
2 _____	_____	_____	_____	
	<u>80</u>	= Total Cover		
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Indicators: _____ 1- Rapid Test for Hydrophytic Vegetation <u>X</u> 2- Dominance Test is >50% _____ 3-Prevalence Index is ≤ 3.0 ¹ _____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) _____ 5- Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____				
Remarks:				

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		
0-4	10YR 2/2						Silt Loam	
4-11	10YR 3/2	98	10YR 3/3	1	C	M	Silt Loam	
			10YR 3/6	1	C	M	Silt Loam	
11-16	10YR 4/3	90	5YR 3/4	10	C	M	Sand	

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 type="checkbox"/> Redox Dark Surface (F6)	
<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)	

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

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) (MLRA1, 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 Plowed 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):

(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

Appendix C

Site Photos (ground level)



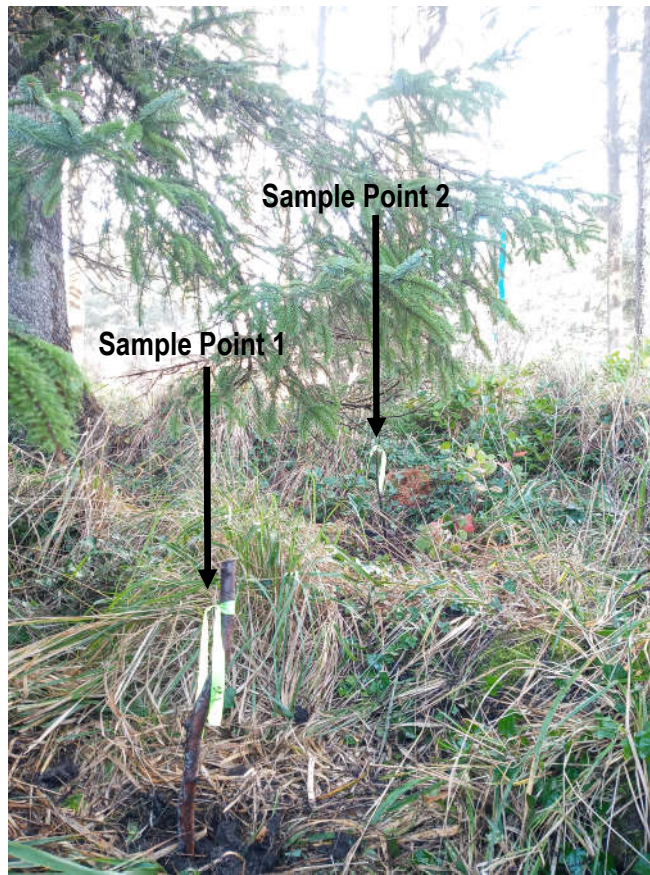
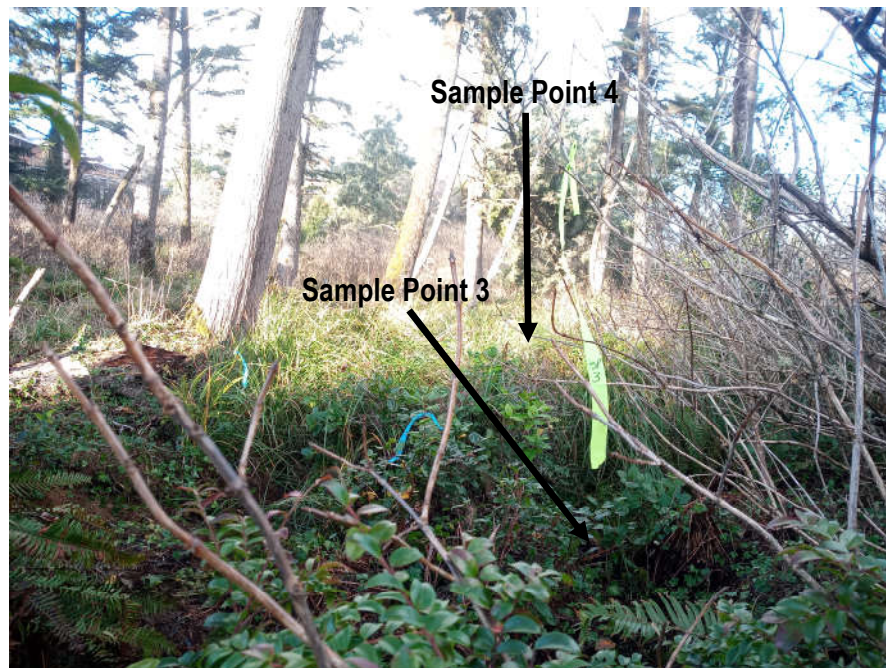


Photo A

Looking northeast at Sample Points 1 and 2 in the southwestern portion of Wetland A.

Photo B

Looking north at Sample Points 3 and 4 in the southeastern portion of Wetland A.



#6978

3/19/2021



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
Tax Lot 4100, Cannon Beach, Oregon
Both photos taken on December 9, 2020

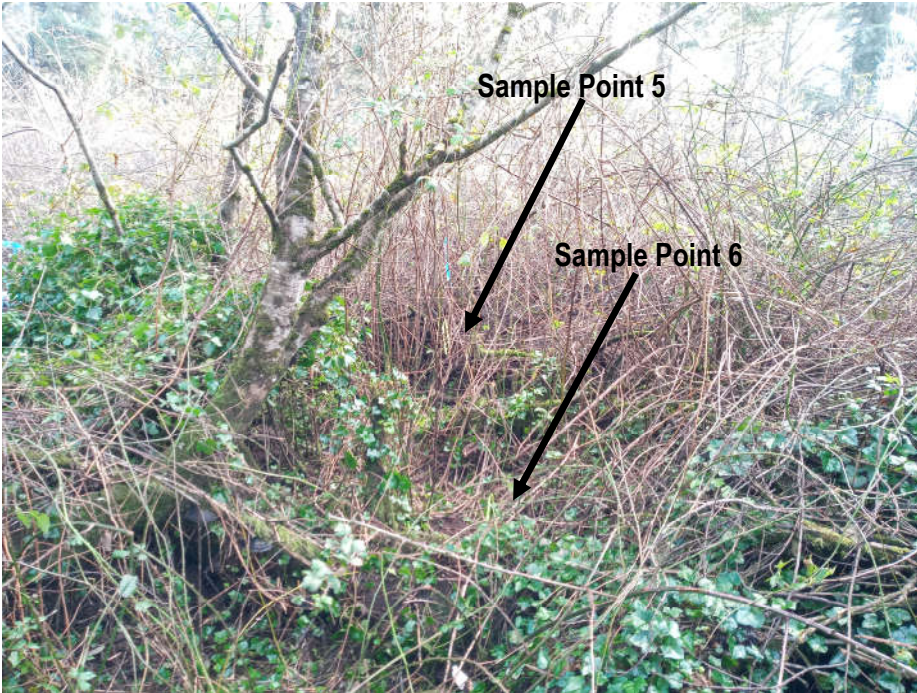
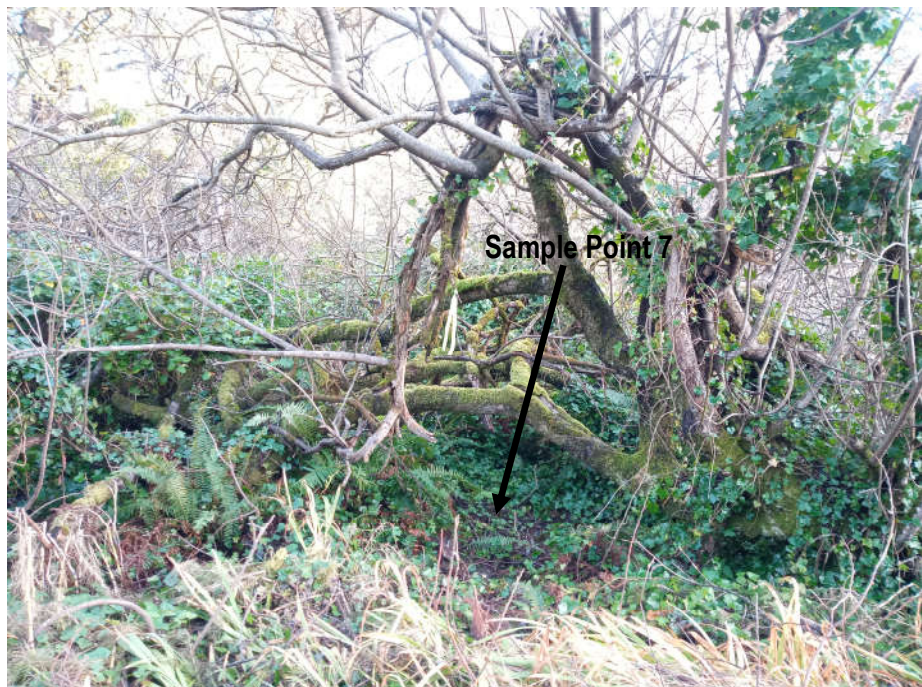


Photo C

Looking southeast at Sample Points 5 and 6 in the northwestern portion of Wetland A.

Photo D

Looking east at Sample Point 7, to the west of the southwestern portion of Wetland A.



#6978

3/19/2021



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
Tax Lot 4100, Cannon Beach, Oregon
Both photos taken on December 9, 2020



Photo E

Looking north at the southwestern portion of Wetland A, where the house to the south drains stormwater onto the site.

#6978
3/19/2021



Pacific Habitat
Services, Inc.
9450 SW Commerce

Photodocumentation
Tax Lot 4100, Cannon Beach, Oregon
Photo taken on December 9, 2020

Appendix D

Wetland Definitions, Methodology



WATERS OF THE STATE AND WETLAND DEFINITION AND CRITERIA

Regulatory Jurisdiction

Wetlands and water resources in Oregon are regulated by the Oregon Department of State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990) and by the U.S. Army Corps of Engineers (COE) through Section 404 of the Clean Water Act.

The primary source documents for wetland delineations within Oregon is the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers, 2010), which are required by both DSL and COE.

Waters of The State and Wetland Definition

Waters of The State are defined as “all natural waterways, tidal and non-tidal bays, intermittent streams, constantly flowing streams, lakes, wetlands, that portion of the Pacific Ocean that is in the boundaries of this state, all other navigable and non-navigable bodies of water in this state and those portions of the ocean shore ...” (DSL, 2009).

Wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (DSL 2009).

Wetland Criteria

Based on the above definition, three major factors characterize a wetland: hydrology, substrate, and biota.

Wetland Hydrology

Wetland hydrology is related to duration of saturation, frequency of saturation, and critical depth of saturation. The 1987 manual defines wetland hydrology as inundation or saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The wetland hydrology criterion can be met, however, if saturation within the major portion of the root zone is present for only 5% of the growing season, depending on other evidence.

The growing season is defined as the portion of the year when soil temperatures at 12.0 inches below the soil surface are higher than biological zero (41 degrees Fahrenheit, 5 degrees Celsius), but also allows approximation from frost free days, based on air temperature. The growing season for any given site or location is determined from US Natural Resources Conservation Service, (formerly Soil Conservation Service) data and information.

Wetland hydrologic indicators include the following: visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, and/or oxidized rhizospheres with living roots. Oxidized rhizospheres are defined as yellowish-red zones around the roots and rhizomes of some plants that grow in frequently saturated soils. Other indicators of hydrology, including algal mats or crust, iron deposits, surface soil cracks, sparsely vegetated concave surface, salt crust, aquatic invertebrates, hydrogen sulfide odor, reduced iron, iron reduction in tilled soils, and stunted or stressed plants can also be used to determine the presence of wetland hydrology.

Wetland Substrate (Soils)

Most wetlands are characterized by hydric soils. Hydric soils are those that are ponded, flooded, or saturated for long enough during the growing season to develop anaerobic conditions. Periodic saturation of soils causes alternation of reduced and oxidized conditions, which leads to the formation of redoximorphic features (gleying and mottling). Mineral hydric soils will be either gleyed or will have bright mottles and/or low matrix chroma. The redoximorphic feature known as gley is a result of greatly reduced soil conditions, which result in a characteristic grayish, bluish or greenish soil color. The term mottling is used to describe areas of contrasting color within a soil matrix. The soil matrix is the portion of the soil layer that has the predominant color. Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table.

Hydric soil indicators include: organic content of greater than 50% by volume, and/or presence of redoximorphic features and dark soil matrix, as determined by the use of a Munsell Soil Color Chart. This chart establishes the chroma, value and hue of soils based on comparison with color chips. Mineral hydric soil must meet one of the 16 definitions for hydric soil indicators, or be classified as a “problem soil” in the Regional Supplement.

Wetland Biota (Vegetation)

Wetland biota is defined as hydrophytic vegetation. A hydrophyte is a plant species that is capable of growing in substrates that are periodically deficient in oxygen as a result of saturated soil conditions. The U.S. Fish and Wildlife Service, in the *National List of Plant Species that Occur in Wetlands*, has established five basic groups of vegetation based on their frequency of occurrence in wetlands. These categories, referred to as the "wetland indicator status", are as follows: obligate wetland plants (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and obligate upland (UPL). Table 1 gives a definition of the plant indicator codes.

Table 1. Description of Wetland Plant Indicator Status Codes

Indicator Code	Status
OBL	Obligate wetland. Plants that always occur in standing water or in saturated soils.
FACW	Facultative wetland. Plants that nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may, on rare occasions, occur in non-wetlands.
FAC	Facultative. Plants that occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but commonly occur in standing water or saturated soils.
FACU	Facultative upland. Plants that typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils.
UPL	Obligate upland. Plants that rarely occur in water or saturated soils.

Observations of hydrology, soils, and vegetation, were made using the "Routine On-site" delineation method as defined in the 1987 manual and the Regional Supplement for areas that were not currently in agricultural production. One-foot diameter soil pits were excavated to 20 inches and soil profiles were examined for hydric soil and wetland hydrology field indicators. In addition, a visual absolute-cover estimate of the dominant species of the plant community was performed using soil pit locations as a center of reference. Dominant plant species are based on estimates of absolute cover for herbaceous, and shrub species within a 5 foot radius of the sample point, and basal area cover for tree and woody vine species within a 30 foot radius of the sample point. Plant species in each vegetative layer, which are estimated at less than 20% of the total cover, are not considered to be dominant. The wetland indicator status is then used to determine if there is an overall dominance (greater than 50%) of wetland or upland plant species. If less than 50% of the dominant species are hydrophytic, then the prevalence index may be used to determine if the subdominant species are hydrophytic. If the prevalence index is less than or equal to 3, hydrophytic vegetation criterion is met.

During data collection, the soil profiles were examined for hydric soil and wetland hydrology field indicators. Plant species and cover were recorded. Data was recorded on standard data sheets which contain the information specified in the 1987 Corps Manual and the Regional Supplement.