



**Washington State
Department of Transportation**

Lynn Peterson
Secretary of Transportation

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March 30, 2015

Ms. Gail Terzi
US Army Corps of Engineers Seattle District
Regulatory Branch CENWS OD RG
PO Box 3755
Seattle, WA 98124-3755

RE: SR 20 North Campbell Lake Road Realignment and Widening (SR 20 Campbell Lake Road) Mitigation Site
USACE NWP (23) Number 95-4-01634

Dear Ms. Terzi,

The Washington State Department of Transportation completed quantitative monitoring of the site on August 4 and 5, 2014 to address final-year (2006) performance measures. Monitoring activities included vegetation observations and photo documentation. This letter is being issued for compliance with the USACE NWP (23) Number 95-4-01634 reporting requirements and to document the achievement of final-year performance standards four years in a row.

General Site Information		
USACE NWP (23) Number	95-4-01634	
Site Location	SR 20 east of Campbell Lake Rd I/C, Skagit County	
LLID Number	1226012484460	
Construction Date	1999	
Monitoring Period	Re-set to 2002-2006	
Year of Monitoring	13 of 5	
Area of Project Impact¹	0.65acre	
Type of Mitigation	Wetland Establishment	Wetland Enhancement
Area of Mitigation	0.25 acre	0.55 acres

¹ Impact and mitigation acreage are sourced from Change Memo (1997) for NORTH CAMPBELL LAKE ROAD REALIGNMENT AND WIDENING CONCEPTUAL WETLAND MITIGATION PLAN (WSDOT 1996).

Summary of Monitoring Results and Management Activities

Performance Criteria	2014 Results	Management Activities
Performance Measure		
The created and enhanced wetlands should have 50% or more of diverse scrub/shrub and/or forest vegetation in a dispersed pattern	67% cover (CI _{80%} = 59-76%) native cover	Nine separate visits for weed control in 2014
Differences in height will be observed as habitat structure changes from a single layer of vegetation to multiple layers over time as trees and shrubs mature.	Multiple layers present in the enhancement	

Site development:

This is the fourth consecutive year that the final year (Year-5) standards have been met. Although this site has been slow to develop, this site now provides a significant amount of native woody and herbaceous vegetative cover. In some areas, particularly in the northern and southern wetland enhancement portions of the site, multiple vegetation strata are present and provide quality habitat for avian and small mammal species. The upland buffer has developed a relatively dense band of native upland vegetation along the southern and eastern margins of the site. This area is dominated by snowberry (*Symphoricarpos albus*), and Douglas-fir (*Pseudotsuga menziesii*).

Invasive species have been aggressively controlled over the past two years with a total of twenty-five separate visits. The cover of invasive species has been reduced from 25 percent cover to less than one percent cover over this time frame. The majority of the invasive species are now located on the site perimeter where the restoration crew has less control over weeds encroaching from neighboring properties. Biological suppression agents stem and petiole-galling fly (*Urophora cardui*) and the Hemlock Moth (*Agonopterix alstroemeriana*) have been released in both 2013 and 2014 to further stem the reoccurrence of Canada thistle (*Cirsium arvense*) and poison hemlock (*Conium maculatum*).

Results for Performance Standard 1

(The created and enhanced wetlands should have 50% or more of diverse scrub/shrub and/or forest vegetation in a dispersed pattern):

Woody cover is estimated at 67% ($CI_{80\%} = 59-76\%$) within the established and enhanced scrub/shrub and forested wetland zones (Photo 1). Willows (*Salix* spp.), red alder (*Alnus rubra*), and twinberry honeysuckle (*Lonicera involucrata*) are the three dominant species on the site. There are a total of fourteen unique species in a dispersed pattern across the site.

Results for Performance Standard 2

(Differences in height will be observed as habitat structure changes from a single layer of vegetation to multiple layers over time as trees and shrubs mature):

Multiple canopy layers were observed in the enhanced wetland areas both along the southwest and northeast corners. In the southwest the over story is composed of willows (*Salix* spp.) with an understory of redosier dogwood (*Cornus alba*), and twinberry honeysuckle (*Lonicera involucrata*). Along the north east corner the over story is red alder (*Alnus rubra*), with a less developed understory of Indian plum (*Oemleria cerasiformis*) and Scouler's willow (*Salix scouleriana*).

We welcome your questions or comments. Please contact me at 360/570-6640 or by e-mail at busht@wsdot.wa.gov for questions about these mitigation sites.

Sincerely,

Tony Bush
Wetlands Program



Photo 1 – Native tree and shrub cover in the wetland

T.34N. R.2E W.M.

REVISED PLANTING AREA

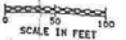
BOUNDARY TO BE STAKED BY CONTRACTING AGENCY.

REPLACE EMERGENT ZONE PLANTS WITH THE FOLLOWING PLANTS AND QUANTITIES (EST.):

- 35 PACIFIC WILLOW
- 15 WESTERN RED CEDAR
- 50 OREGON CRABAPPLE
- 100 SALMONBERRY
- 100 BLACK TWINBERRY
- 135 RED-OSIER DOGWOOD

BUFFER WIDTH 25' TYPICAL ALONG PERIMETER OF EXISTING WETLANDS.

WETLAND MITIGATION PLANTING PLAN



LEGEND

MITIGATION PLANTING

~~EMERGENT ZONE 3' O.C.~~

~~WETLAND ENHANCEMENT SCRUB - SHRUB ZONE 5' O.C.~~

200 PACIFIC WILLOW
175 SALMONBERRY
175 RED-OSIER DOGWOOD
150 BLACK TWINBERRY
150 CASPIAN

2920 S.Y. WETLAND SEEDING AND FERTILIZING BY HAND

WETLAND BUFFER, SEE NOTE 6 FOR LAYOUT

TREES, 12' O.C.	SHRUBS, 6' O.C.
85 DOUGLAS FIR	125 TALL OREGON GRAPE
50 WESTERN RED CEDAR	200 NODDIA ROSE
50 OREGON CRABAPPLE	200 INDIAN PLUM
100 RED ELDERBERRY	200 SHORBBERRY

4306 S.Y. SEEDING AND FERTILIZING BY HAND
375 C.Y. SOIL AMENDMENT

BARBLESS TWO WIRE FENCE

NOTES:

- 27 C.Y. BARK OR WOOD CHIP MULCH TO BE APPLIED IN WETLAND ENHANCEMENT SCRUB-SHRUB ZONE.
- 19 C.Y. BARK OR WOOD CHIP MULCH TO BE APPLIED IN WETLAND BUFFER.
- PROTECT AND PRESERVE EXISTING WETLANDS.
- THE WETLAND ENHANCEMENT-SCRUB SHRUB ZONE INVOLVES INTERPLANTING WITH EXISTING VEGETATION TO BE SAVED. SEE SPECIAL PROVISIONS, SECTION 8-02.363, LAYOUT OF PLANTING.
- FOR PLANT LAYOUT WITHIN WETLAND BUFFER, DOUGLAS FIR AND WESTERN RED CEDAR ARE NOT TO BE PLANTED WITHIN 75' OF THE EDGE OF PAVEMENT OF SR 20.
- IN THE WETLAND BUFFER, TREES SHALL BE LAID OUT AT 12' O.C. AFTER TREE LAYOUT THE SHRUBS SHALL BE LAID OUT AT 6' O.C. IN THE AREA BETWEEN THE TREES.

EXISTING SITE FEATURES

- EXISTING WETLANDS
- EXISTING INDEX CONTOURS
- EXISTING INTERMEDIATE CONTOURS



STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
Sally A. Anderson
SALLY A. ANDERSON
CERTIFICATE NO. 372
DATE: 3-9-98

DESIGNED BY R. LAUGHLIN					
ENTERED BY R. TOBIN					
CHECKED BY D. PETERSON					
PROJ. ENGR. C. GEORGE					
REGIONAL ADM. J. OKAMOTO					
	DATE	DATE	REVISION	BY	

FED. AID PROJ. NO.	
STATE	10 WASH
JOB NUMBER	STW035
CONTRACT NO.	

ENVIRONMENTAL AND ENGINEERING SERVICE CENTER
Washington State Department of Transportation

SR 20
VIC. CAMPBELL LAKE ROAD
WETLAND MITIGATION
WL 3
SHEET 48 OF 70

Appendix 1 – Delineation Report

WETLAND DELINEATION REPORT

SR 20 Campbell Lake Road Mitigation Site

**North Campbell Lake Road Realignment and Widening
USACE (NWP 23) 95-4-01634**

Skagit County, Washington

**Prepared by:
Tatiana Dreisbach
WSDOT Environmental Services Office
Olympia, Washington**

May 2014



Introduction

This report was prepared by the Washington State Department of Transportation (WSDOT) to describe the wetland boundary delineation for the SR 20 Campbell Lake Road mitigation site. Field work was conducted by WSDOT wetland biologists Tatiana Dreisbach and Kristen Andrews, on April 7 and 9, 2014. The delineation identifies 1.91 acres of wetland within the mitigation site boundaries.

General Information for the SR 20 Campbell Lake Road mitigation site		
Location:	T34N, R2E, S7. Skagit County. (Vicinity map, Figure 1)	
	USACE NWP 23 Number	95-4-01634
	Long./Lat. ID Number	1226012484460
	Land Resource Region (LRR)	A
	Major Land Resource Area (MLRA)	2
	Construction Date	1999
	Monitoring Period	2002 - 2006
	Year of Monitoring	13 of 5 (in 2014)
Area of Project Impact¹	0.42 acre	
Type of Mitigation	Intended Area (acres)	
Establishment ²	0.25 acre	
Enhancement ³	0.65 acre	
Total Intended Wetland Mitigation Area	0.90 acre	
Total Delineated Wetland Area	1.91 acres	

¹ Project impact numbers from the conceptual mitigation plan (WSDOT 1996).

² Establishment area the conceptual mitigation plan (WSDOT 1996).

³ Enhancement area from WSDOT memorandum (WSDOT 1997) which increases/amends enhancement acreage noted in conceptual mitigation plan.

Methods

Wetland boundaries within the SR 20 Campbell Lake Road mitigation site were delineated using routine methods described in the:

- Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987),
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010)

Wetland boundaries were delineated based on on-site observations of hydrology, soils, and plant communities, in conjunction with background information.

A Global Positioning System (GPS) Trimble GeoXT mapping grade unit was used to record the wetland boundaries and sampling point locations (Figure 2). Wetland boundary points were recorded at regular intervals and at any change in direction along the boundary.

Wetland Delineation and Study Area

Study Area

Wetlands described in this report were assessed only within the wetland mitigation site boundary (Figure 2).

Wetlands

Delineation data were collected at seven sampling points and recorded on wetland determination data forms (Appendix A). Paired wetland and upland sample points were used to define the wetland edge. Additional wetland sample points characterize various wetland vegetation communities. Data recorded on wetland determination data forms characterize typical wetland and upland conditions observed on site. Vegetation, soils, and hydrology were examined in many additional sampling locations to determine the wetland boundary. The delineation determined 1.91 acres of wetland were present within the SR 20 Campbell Lake mitigation site.

Precipitation

The Regional Delineation Supplement Version 2.0 (USACE 2010) recommends using methods described in Chapter 19 in *Engineering Field Handbook* (NRCS 1997) to determine if precipitation occurring in the three full months prior to the site visit was normal, drier than normal, or wetter than normal. Actual rainfall is compared to the normal range of the 30-year average. When considering the three prior months, wetter than normal precipitation conditions were present prior to field work. Two of the three months prior to field work were wetter than normal with the third prior month within the normal range (Appendix B-1).

Moderate precipitation was recorded in the ten days preceding field work (Appendix B-2).

Growing Season

The following evidence of the growing season was observed at the time of the delineation:

- New vegetative growth on herbaceous plants.
- Leaves on most woody species were fully emerged.

GPS Data - SR 20 Campbell Lake, 4/7/2014 & 4/9/2014

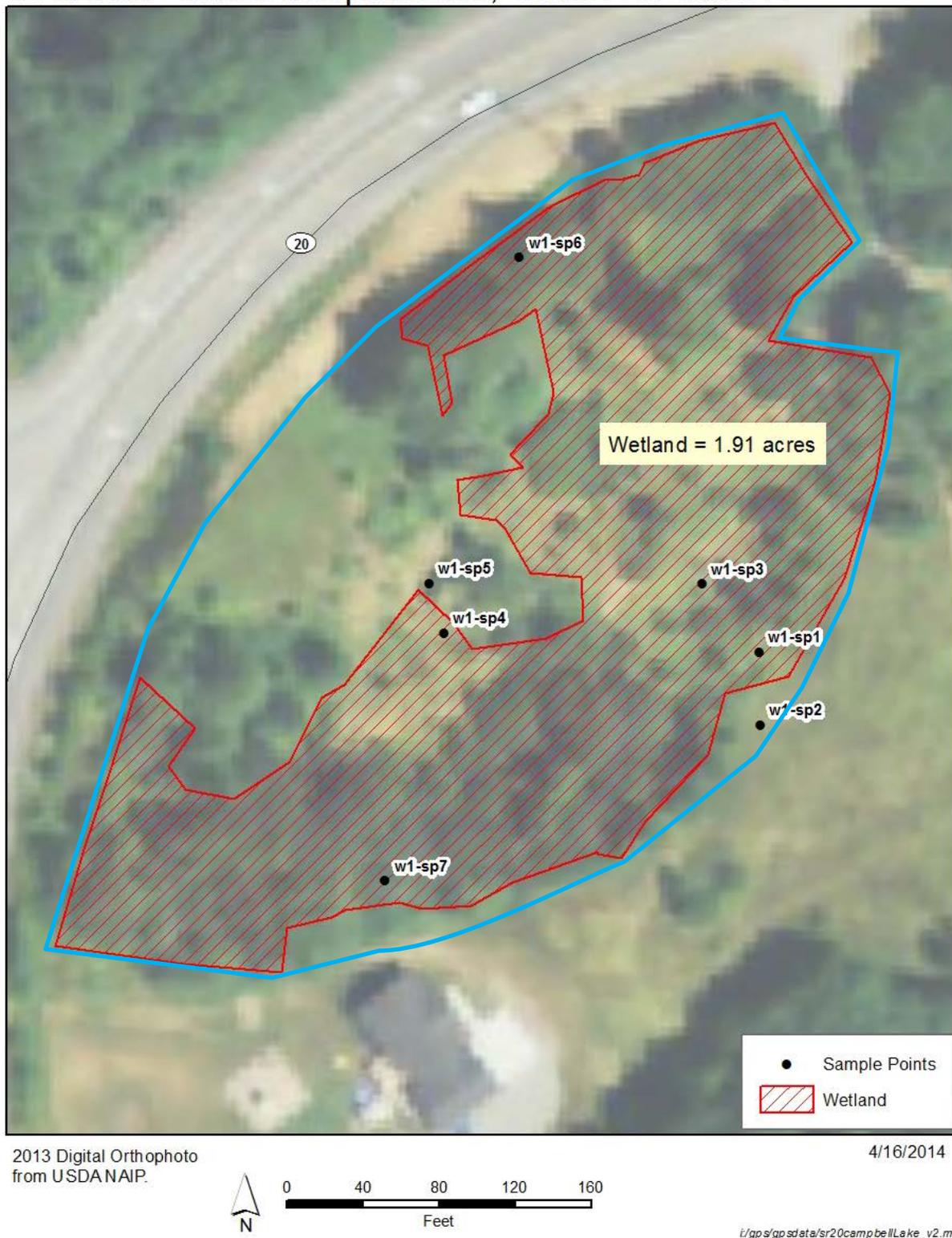


Figure 2. Study area in blue, wetland boundary in red, and sampling point locations in black.

SR 20 Campbell Lake Road Mitigation Site – Wetland Delineation Summary

Total Delineated Wetland Area		1.91 acres	
	Wetland Determination Data Form(s)	Appendix A; Sampling Point W1-SP1, W1-SP3, W1-SP4, W1-SP6, W1-SP7	
	Upland Determination Data Form(s)	Appendix A; Sampling Point W1-SP2 and W1-SP5	
	Delineator(s)	Tatiana Dreisbach, Kristen Andrews	
	Delineation Date	April 7 and 9, 2014	
Vegetation	<p>Trees – Pacific willow (<i>Salix lasiandra</i>), Sitka willow (<i>Salix sitchensis</i>), red alder (<i>Alnus rubra</i>)</p> <p>Shrubs – Nootka rose (<i>Rosa nutkana</i>), Sitka willow, twinberry honeysuckle (<i>Lonicera involucrata</i>), snowberry (<i>Symphoricarpos albus</i>), redosier dogwood (<i>Cornus alba</i>), tall oregongrape (<i>Mahonia aquifolium</i>),</p> <p>Herbs – meadow foxtail (<i>Alopecurus pratensis</i>), colonial bentgrass (<i>Agrostis capillaris</i>), largeleaf avens (<i>Geum macrophyllum</i>), little western bittercress (<i>Cardamine oligosperma</i>), fringed willowherb (<i>Epilobium ciliatum</i>), changing forget-me-not (<i>Myosotis discolor</i>), dovefoot geranium (<i>Geranium molle</i>)</p>		
Soils	<p>Soils examined to a depth of 18 inches exhibited hydric characteristics. Dark matrix colors of 10YR 2/1, 10YR 3/1, and 10YR 3/2 and depleted matrix colors of 2.5Y 4/2, 2.5Y 5/2 and 5Y 5/2 were observed. Redoximorphic concentrations and depletions were observed in some layers. Indicators Depleted Below Dark Surface (A11), Depleted Matrix (F3), and Redox Dark Surface (F6) met.</p>		
Hydrology	<p>Direct observation of water was observed throughout the wetland. Water in the observation pits ranged from 0 inches (at the soil surface) to 18 inches below the surface. Surface water, up to four inches deep was observed in some areas. Multiple hydrology sources provide inputs to the site. A slope to the east provides subsurface run-on as well as surface runoff associated with precipitation events. Water pools in flat to shallow depressions in the central area of the site. This area gently slopes to the south providing slow moving surface and subsurface water to the southern end of the site. A seasonal creek channel flowing from an off-site wetland to the north of the site provides surface flows to the northwest corner of the wetland. Precipitation also contributes to the hydrologic regime of this wetland.</p>		
Rationale for Delineation	<p>Positive indicators of all three wetland criteria are present. Placement of boundary determined by vegetation, soils, hydrology, and topographic break in some areas. Presence/absence of hydrology indicators generally correlated with a hydrophytic vegetation community in the herbaceous layer. Chroma 2 or less soils with redox features were occurring in the wetland with adjacent upland soils generally with chroma 3 also with redox features.</p>		

Limitations

This wetland delineation report documents the investigation, best professional judgment and conclusions of WSDOT based on the site conditions encountered at the time of this study. The wetland delineation was performed in compliance with accepted standards for professional wetland biologists and applicable federal, state, and local ordinances. It is correct and complete to the best of our knowledge. It should be considered a preliminary jurisdictional determination of wetlands and other waters until it has been reviewed and approved in writing by the appropriate jurisdictional authorities.

References

1. Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Vicksburg (MS): US Army Engineer Waterways Experiment Station. Technical Report Y-87-1. Available from: <http://el.ercd.usace.army.mil/elpubs/pdf/wlman87.pdf>
2. Lichvar RW, Kartesz JT. 2013. North American Digital Flora: National Wetland Plant List (US), version 3.1 [Internet]. Hanover (NH): US Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory and Chapel Hill (NC): BONAP. [cited 2014 May 13]. Available from: http://wetland_plants.usace.army.mil
3. [NRCS] Natural Resource Conservation Service. 1997. Hydrology Tools for wetland determination. Chapter 19 in Engineering Field Handbook. Fort Worth (TX): US. Department of Agriculture, NRCS. <http://www.wsdot.wa.gov/NR/rdonlyres/0685A8C8-0512-4568-BE7F-6FF6D75C15ED/0/WetDelinCh19.pdf>
4. [NRCS] Natural Resources Conservation Service [Internet]. 2014. Field Office Technical Guide. US Department of Agriculture. Climate Data for Skagit County, Station Anacortes, Washington 94202. [cited 2014 May 13]. Available at: <http://agacis.rcc-acis.org/53057/wets>
5. [NRCS] Natural Resource Conservation Service [Internet]. 2014. Web Soil Survey for Skagit County, Washington. US Department of Agriculture. [cited 2014 May 13]. Available at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
6. [USACE] US Army Corps of Engineers. 1995. Department of the Army Nationwide 23 Permit Number 95-4-01634.
7. [USACE] US Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. Wakeley JS, Lichvar RW, Noble CV, editors. Vicksburg (MS): US Army Engineer Research and Development Center. ERDC/EL TR-10-3. Available at: http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_finals_upp.pdf
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9. [WSDOT] Washington State Department of Transportation. 1997. Memorandum from C. L. George / Saeede Mohammadi to Dan Hagglund/Basha Tony. Enhancement acreage.
10. [WSDOT] Washington State Department of Transportation. 2014. Wetland Delineation and Assessment [Internet]. Olympia (WA): Environmental Services Office. [cited 2014 May 13]. Available at: <http://www.wsdot.wa.gov/Environment/Wetlands/Delineation.htm>

Appendix A —Wetland Determination Data Forms

Wetland Delineation Data Forms for:

W1-SP1

W1-SP2

W1-SP3

W1-SP4

W1-SP5

W1-SP6

W1-SP7

Wetland polygons, sampling point locations, and wetland names shown in Figure 2.

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

Project/Site: SR 20 Campbell Lake Road City/County: n/a / Skagit Sampling Date: 08-Apr-14
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP1
 Investigator(s): Kristen Andrews, Tatiana Dreisbach Section, Township, Range: S 7 T 34N R 2E
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope: 20.0 % / 11.3 °
 Subregion (LRR): LRR A Lat.: 48.446 Long.: -122.602 Datum: NADHARN83
 Soil Map Unit Name: Coveland gravelly loam, 0 to 3 percent slopes NWI classification: PSS

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Remarks:
 Slope wetland receiving hydrology from off site, up-slope, wetland on east side of site.

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
Tree Stratum (Plot size: <u>20 X 20 FEET</u>)				Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>140</u> (A) <u>450</u> (B) Prevalence Index = B/A = <u>3.214</u>
Sapling/Shrub Stratum (Plot size: <u>15 X 15 FEET</u>)				
1. <u>Symphoricarpos albus</u>	<u>40</u>	<input checked="" type="checkbox"/> 57.1%	<u>FACU</u>	
2. <u>Rosa nutkana</u>	<u>20</u>	<input checked="" type="checkbox"/> 28.6%	<u>FAC</u>	
3. <u>Salix sitchensis</u>	<u>10</u>	<input type="checkbox"/> 14.3%	<u>FACW</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
70 = Total Cover				
Herb Stratum (Plot size: <u>5 X 5 FEET</u>)				
1. <u>Alopecurus pratensis</u>	<u>60</u>	<input checked="" type="checkbox"/> 85.7%	<u>FAC</u>	
2. <u>Cardamine oligosperma</u>	<u>10</u>	<input type="checkbox"/> 14.3%	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
70 = Total Cover				
Woody Vine Stratum (Plot size: <u>5 x 5 FEET</u>)				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>30</u>				

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrologic Vegetation
 2 - Dominance Test is > 50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

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

Soil

Sampling Point: W1-SP1

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	3/1	100						Silt Loam	
7-11	10YR	3/1	90	7.5YR	4/4	10	C	M	Silt Loam	concentration is prominent
11-18	2.5Y	3/2	75	5Y	6/2	20	D	M	Silt Loam	
+mottle				10YR	5/8	5	C	M		concentration is prominent

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 in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
 Lower layer starts too low to meet F7.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" 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? (includes capillary fringe) Yes No Depth (inches):

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: SR 20 Campbell Lake Road City/County: n/a / Skagit Sampling Date: 08-Apr-14
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP2
 Investigator(s): Kristen Andrews, Tatiana Dreisbach Section, Township, Range: S 7 T 34N R 2E
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope: 20.0 % / 11.3 °
 Subregion (LRR): LRR A Lat.: 48.446 Long.: -122.602 Datum: NADHARN83
 Soil Map Unit Name: Coveland gravelly loam, 0 to 3 percent slopes 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 type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>20 X 20 FEET</u>)				
1. <u>Pseudotsuga menziesii</u>	30	<input checked="" type="checkbox"/> 75.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)
2. <u>Thuja plicata</u>	10	<input checked="" type="checkbox"/> 25.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 X 15 FEET</u>)				
1. <u>Symphoricarpos albus</u>	30	<input checked="" type="checkbox"/> 71.4%	FACU	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>92</u> x 3 = <u>276</u> FACU species <u>74</u> x 4 = <u>296</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>166</u> (A) <u>572</u> (B) Prevalence Index = B/A = <u>3.446</u>
2. <u>Mahonia aquifolium</u>	10	<input checked="" type="checkbox"/> 23.8%	FACU	
3. <u>Rosa nutkana</u>	2	<input type="checkbox"/> 4.8%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
Herb Stratum (Plot size: <u>5 X 5 FEET</u>)				
1. <u>Alopecurus pratensis</u>	70	<input checked="" type="checkbox"/> 81.4%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 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>Agrostis capillaris</u>	10	<input type="checkbox"/> 11.6%	FAC	
3. <u>Vicia spp.</u>	2	<input type="checkbox"/> 2.3%		
4. <u>Gallium aparine</u>	2	<input type="checkbox"/> 2.3%	FACU	
5. <u>Taraxacum officinale</u>	2	<input type="checkbox"/> 2.3%	FACU	
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
Woody Vine Stratum (Plot size: <u>5 x 5 FEET</u>)				
1. _____		<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____		<input type="checkbox"/> 0.0%		
= Total Cover				
% Bare Ground in Herb Stratum: <u>14</u>				

Remarks:

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

Soil

Sampling Point: W1-SP2

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	7.5YR	3/3	100					Loam	
9-18	10YR	4/3	93	10YR	3/6	2	C	M	concentration is distinct
+mottle				10YR	6/3	5	D	M	

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 in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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:
 Matric chroma too bright and too deep in the second layer to meet an indicator.

Hydrology

Wetland Hydrology Indicators:

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

Field Observations:

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

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

Remarks:

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

Project/Site: SR 20 Campbell Lake Road City/County: n/a / Skagit Sampling Date: 08-Apr-14
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP3
 Investigator(s): Kristen Andrews, Tatiana Dreisbach Section, Township, Range: S 7 T 34N R 2E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °
 Subregion (LRR): LRR A Lat.: 48.446 Long.: -122.602 Datum: NADHARN83
 Soil Map Unit Name: Coveland gravelly loam, 0 to 3 percent slopes NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Remarks:
 Gently sloping wetland area sloping towards the south.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Rel.Strat. Cover	Indicator Status		
Tree Stratum (Plot size: <u>20 X 20 FEET</u>)					
1. _____	_____	<input type="checkbox"/> 0.0%	_____	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>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)	
2. _____	_____	<input type="checkbox"/> 0.0%	_____		
3. _____	_____	<input type="checkbox"/> 0.0%	_____		
4. _____	_____	<input type="checkbox"/> 0.0%	_____		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 X 15 FEET</u>)					
1. <u>Lonicera involucrata</u>	5	<input checked="" type="checkbox"/> 50.0%	FAC	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>8</u> x 2 = <u>16</u> FAC species <u>87</u> x 3 = <u>261</u> FACU species <u>2</u> x 4 = <u>8</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>97</u> (A) <u>285</u> (B) Prevalence Index = B/A = <u>2.938</u>	
2. <u>Salix sitchensis</u>	3	<input checked="" type="checkbox"/> 30.0%	FACW		
3. <u>Symphoricarpos albus</u>	2	<input checked="" type="checkbox"/> 20.0%	FACU		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
	10	= Total Cover			
Herb Stratum (Plot size: <u>5 X 5 FEET</u>)					
1. <u>Alopecurus pratensis</u>	80	<input checked="" type="checkbox"/> 92.0%	FAC		
2. <u>Epilobium ciliatum</u>	5	<input type="checkbox"/> 5.7%	FACW		
3. <u>Myosotis discolor</u>	2	<input type="checkbox"/> 2.3%	FAC		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
	87	= Total Cover			
Woody Vine Stratum (Plot size: <u>5 x 5 FEET</u>)					
1. _____	_____	<input type="checkbox"/> 0.0%	_____		
2. _____	_____	<input type="checkbox"/> 0.0%	_____		
	0	= Total Cover			
% Bare Ground in Herb Stratum: <u>13</u>					

Remarks:
 Not enough cover by shrubs to meet PSS NWI class.

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

Soil

Sampling Point: W1-SP3

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	97	10YR	3/4	3	C	M	Silt Loam	concentration is distinct
9-11	10YR	3/1	60	7.5YR	3/4	15	C	M	Silt Loam	concentration is prominent
+mottle			25	7.5YR	6/2		D	M		
11-18	2.5Y	5/2	75	10YR	4/6	25	C	M		concentration is prominent

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 in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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:
 Second layer starts too deep to meet F6. Third layer starts too deep to meet F3

Hydrology

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="4"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>	

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

Remarks:

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

Project/Site: SR 20 Campbell Lake Road City/County: n/a / Skagit Sampling Date: 08-Apr-14
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP4
 Investigator(s): Kristen Andrews, Tatiana Dreisbach Section, Township, Range: S 7 T 34N R 2E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °
 Subregion (LRR): LRR A Lat.: 48.446 Long.: -122.602 Datum: NADHARN83
 Soil Map Unit Name: Coveland gravelly loam, 0 to 3 percent slopes NWI classification: PSS

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Remarks:
 gently sloping wetland area sloping towards the south.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
Tree Stratum (Plot size: <u>20 X 20 FEET</u>)				Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. _____		<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
3. _____		<input type="checkbox"/> 0.0%		
4. _____		<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 X 15 FEET</u>)				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>97</u> x 3 = <u>291</u> FACU species <u>36</u> x 4 = <u>144</u> UPL species <u>14</u> x 5 = <u>70</u> Column Totals: <u>152</u> (A) <u>515</u> (B) Prevalence Index = B/A = <u>3.388</u>
1. <u>Lonicera involucrata</u>	20	<input checked="" type="checkbox"/> 32.3%	FAC	
2. <u>Symphoricarpos albus</u>	30	<input checked="" type="checkbox"/> 48.4%	FACU	
3. <u>Salix sitchensis</u>	5	<input type="checkbox"/> 8.1%	FACW	
4. <u>Mahonia aquifolium</u>	2	<input type="checkbox"/> 3.2%	FACU	
5. <u>Rosa nutkana</u>	5	<input type="checkbox"/> 8.1%	FAC	
	62	= Total Cover		
Herb Stratum (Plot size: <u>5 X 5 FEET</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 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>Alopecurus pratensis</u>	60	<input checked="" type="checkbox"/> 60.0%	FAC	
2. <u>Cirsium arvense</u>	2	<input type="checkbox"/> 2.0%	FAC	
3. <u>Vicia spp.</u>	10	<input type="checkbox"/> 10.0%		
4. <u>Cardamine oligosperma</u>	2	<input type="checkbox"/> 2.0%	FAC	
5. <u>Geranium molle</u>	10	<input type="checkbox"/> 10.0%	UPL	
6. <u>Myosotis discolor</u>	6	<input type="checkbox"/> 6.0%	FAC	
7. <u>Plantago lanceolata</u>	2	<input type="checkbox"/> 2.0%	FACU	
8. <u>Taraxacum officinale</u>	2	<input type="checkbox"/> 2.0%	FACU	
9. <u>Trifolium arvense</u>	2	<input type="checkbox"/> 2.0%	UPL	
10. <u>Rumex crispus</u>	2	<input type="checkbox"/> 2.0%	FAC	
11. <u>Lamium purpureum</u>	2	<input type="checkbox"/> 2.0%	UPL	
	100	= Total Cover		
Woody Vine Stratum (Plot size: <u>5 x 5 FEET</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____		<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				

Remarks:

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

Soil

Sampling Point: W1-SP4

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	98	2.5Y	5/2	2	D	M	Silt Loam
4-20	5Y	5/2	70	10Y	6/1	20	D	M	Sandy Loam
+mottle				10YR	5/6	10	C	M/PL	concentrations are prominent

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 in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="14"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="9"/>	

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

Remarks:

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

Project/Site: SR 20 Campbell Lake Road City/County: n/a / Skagit Sampling Date: 08-Apr-14
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP5
 Investigator(s): Kristen Andrews, Tatiana Dreisbach Section, Township, Range: S 7 T 34N R 2E
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °
 Subregion (LRR): LRR A Lat.: 48.446 Long.: -122.602 Datum: NADHARN83
 Soil Map Unit Name: Coveland gravelly loam, 0 to 3 percent slopes 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 type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Remarks:
 Hydrology indicators define the line here. Soils and vegetation are the same in wetland and upland. Hydric soils with Alopecurus pratensis dominant throughout, however, no hydrology indicators in upland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>20 X 20 FEET</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 X 15 FEET</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>42</u> x 4 = <u>168</u> UPL species <u>7</u> x 5 = <u>35</u> Column Total s: <u>99</u> (A) <u>348</u> (B) Prevalence Index = B/A = <u>3.515</u>
1. <u>Symphoricarpos albus</u>	<u>30</u>	<input checked="" type="checkbox"/> 66.7%	<u>FACU</u>	
2. <u>Mahonia aquifolium</u>	<u>10</u>	<input checked="" type="checkbox"/> 22.2%	<u>FACU</u>	
3. <u>Rosa nutkana</u>	<u>5</u>	<input type="checkbox"/> 11.1%	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
45 = Total Cover				
Herb Stratum (Plot size: <u>5 X 5 FEET</u>)				
1. <u>Alopecurus pratensis</u>	<u>40</u>	<input checked="" type="checkbox"/> 62.5%	<u>FAC</u>	
2. <u>Vicia spp.</u>	<u>5</u>	<input type="checkbox"/> 7.8%	_____	
3. <u>Epilobium ciliatum</u>	<u>5</u>	<input type="checkbox"/> 7.8%	<u>FACW</u>	
4. <u>Geranium molle</u>	<u>5</u>	<input type="checkbox"/> 7.8%	<u>UPL</u>	
5. <u>Veronica spp.</u>	<u>5</u>	<input type="checkbox"/> 7.8%	_____	
6. <u>Plantago lanceolata</u>	<u>2</u>	<input type="checkbox"/> 3.1%	<u>FACU</u>	
7. <u>Lamium purpureum</u>	<u>2</u>	<input type="checkbox"/> 3.1%	<u>UPL</u>	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
64 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>0</u>				

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrologic Vegetation
 2 - Dominance Test is > 50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

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

Soil

Sampling Point: W1-SP5

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			
0-10	10YR	3/2	85	10YR	5/6	5	C	M	Sandy Loam	concentration is prominent
+mottle				10YR	5/2	10	D	M		
10-18	2.5Y	4/2	50	10YR	4/6	20	C	M	Sandy Loam	concentration is prominent
+mottle				5G	5/1	30	D	M		

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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:
 Not enough percentage of the depleted matrix color to meet A11 or F3 (matrix would need to be 60% instead of 50%).

Hydrology

Wetland Hydrology Indicators:

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

Field Observations:

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

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

Remarks:

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

Project/Site: SR 20 Campbell Lake Road City/County: n/a / Skagit Sampling Date: 08-Apr-14
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP6
 Investigator(s): Kristen Andrews, Tatiana Dreisbach Section, Township, Range: S 7 T 34N R 2E
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope: 10.0 % / 5.7 °
 Subregion (LRR): LRR A Lat.: 48.446 Long.: -122.602 Datum: NADHARN83
 Soil Map Unit Name: Coveland gravelly loam, 0 to 3 percent slopes NWI classification: PFO

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

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

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

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>20 X 20 FEET</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>100.0%</u> (A/B)
1. <u>Alnus rubra</u>	20	<input checked="" type="checkbox"/> 62.5%	FAC	
2. <u>Salix X pendulina</u>	10	<input checked="" type="checkbox"/> 31.3%	FAC	
3. <u>Picea sitchensis</u>	2	<input type="checkbox"/> 6.3%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
32				
Sapling/Shrub Stratum (Plot size: <u>15 X 15 FEET</u>)				
1. <u>Lonicera involucrata</u>	5	<input type="checkbox"/> 18.5%	FAC	
2. <u>Rubus spectabilis</u>	5	<input type="checkbox"/> 18.5%	FAC	
3. <u>Rosa nutkana</u>	15	<input checked="" type="checkbox"/> 55.6%	FAC	
4. <u>Thuja plicata</u>	2	<input type="checkbox"/> 7.4%	FAC	
5. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
27				
Herb Stratum (Plot size: <u>20 X 10 FEET</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>17</u> x 2 = <u>34</u> FAC species <u>156</u> x 3 = <u>468</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>193</u> (A) <u>522</u> (B) Prevalence Index = B/A = <u>2.705</u>
1. <u>Ranunculus repens</u>	90	<input checked="" type="checkbox"/> 60.8%	FAC	
2. <u>Equisetum fluviatile</u>	20	<input type="checkbox"/> 13.5%	OBL	
3. <u>Juncus effusus</u>	10	<input type="checkbox"/> 6.8%	FACW	
4. _____	10	<input type="checkbox"/> 6.8%		
5. <u>Phalaris arundinacea</u>	5	<input type="checkbox"/> 3.4%	FACW	
6. <u>Juncus spp.</u>	2	<input type="checkbox"/> 1.4%		
7. <u>Carex spp.</u>	2	<input type="checkbox"/> 1.4%		
8. <u>Urtica dioica</u>	2	<input type="checkbox"/> 1.4%	FAC	
9. <u>Geum macrophyllum</u>	5	<input type="checkbox"/> 3.4%	FAC	
10. <u>Epilobium ciliatum</u>	2	<input type="checkbox"/> 1.4%	FACW	
11. _____	0	<input type="checkbox"/> 0.0%		
= Total Cover				
148				
Woody Vine Stratum (Plot size: <u>5 x 5 FEET</u>)				
1. _____		<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
= Total Cover				
0				
% Bare Ground in Herb Stratum: <u>0</u>				

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrologic Vegetation
 2 - Dominance Test is > 50%
 3 - Prevalence Index is ≤ 3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:
 Unnamed herb in row 4 is a FACW or OBL composite. No inflorescence to identify. Growing in standing, slow-slowing water. Juncus and Carex species also FACW or OBL and growing in the same hydrologic conditions.

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

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

Project/Site: SR 20 Campbell Lake Road City/County: n/a / Skagit Sampling Date: 08-Apr-14
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP7
 Investigator(s): Kristen Andrews, Tatiana Dreisbach Section, Township, Range: S 7 T 34N R 2E
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope: 10.0 % / 5.7 °
 Subregion (LRR): LRR A Lat.: 48.446 Long.: -122.602 Datum: NADHARN83
 Soil Map Unit Name: Coveland gravelly loam, 0 to 3 percent slopes NWI classification: PFO

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

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

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

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>20 X 20 FEET</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>6</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>100.0%</u> (A/B)
1. <u>Salix lasiandra</u>	50	<input checked="" type="checkbox"/> 50.0%	FACW	
2. <u>Alnus rubra</u>	30	<input checked="" type="checkbox"/> 30.0%	FAC	
3. <u>Salix sitchensis</u>	20	<input checked="" type="checkbox"/> 20.0%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%		
	100	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 X 15 FEET</u>)				
1. <u>Cornus alba</u>	20	<input checked="" type="checkbox"/> 57.1%	FACW	
2. <u>Salix sitchensis</u>	10	<input checked="" type="checkbox"/> 28.6%	FACW	
3. <u>Lonicera involucrata</u>	5	<input type="checkbox"/> 14.3%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	35	= Total Cover		
Herb Stratum (Plot size: <u>5 X 5 FEET</u>)				
1. <u>Agrostis capillaris</u>	20	<input checked="" type="checkbox"/> 69.0%	FAC	
2. <u>Geum macrophyllum</u>	5	<input type="checkbox"/> 17.2%	FAC	
3. <u>Rumex crispus</u>	2	<input type="checkbox"/> 6.9%	FAC	
4. <u>Epilobium ciliatum</u>	2	<input type="checkbox"/> 6.9%	FACW	
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	29	= Total Cover		
Woody Vine Stratum (Plot size: <u>5 x 5 FEET</u>)				
1. _____		<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>71</u>				
Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>102</u> x 2 = <u>204</u> FAC species <u>62</u> x 3 = <u>186</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>164</u> (A) <u>390</u> (B) Prevalence Index = B/A = <u>2.378</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 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="radio"/> No <input type="radio"/>				
Remarks:				

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

Soil

Sampling Point: W1-SP7

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			
0-11	10YR	2/1	100						Silt Loam	
11-18	10YR	2/1	30	7.5YR	4/6	10	C	M	Silty Clay Loam	concentration is prominent when compared to both matrices
11-18	2.5Y	4/2	40	2.5Y	4/2	20	D	M		

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 in MLRA 1)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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:
 Would meet A11 if the 2.5Y 4/2 matrix color in the layer starting at 11 inches was 60% instead of 40%. Meets definition of a hydric soil due to prolonged inundation.

Hydrology

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="16"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="6"/>	

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

Remarks:

Appendix B — Precipitation Data

Appendix B-1. Comparison of Observed and Normal Precipitation (NRCS 1997)

Monthly precipitation data for Anacortes, Washington.

		Long-term rainfall records ^a							
	Month	3 yrs. in 10 less than	Average	3 yrs. in 10 more than	Rain fall ^a	Condition dry, wet, normal ^b	Condition Value	Month weight value	Product of previous two columns
1 st prior month	Mar	1.67	2.21	2.58	3.86	W	3	3	9
2 nd prior month	Feb	1.75	2.49	2.95	3.36	W	3	2	6
3 rd prior month	Jan	2.49	3.69	4.40	3.65	N	2	1	2
								Sum	17

^aNRCS 2014

^bConditions are considered normal if they fall within the low and high range around the average.

Note: If sum is

- 6 - 9 then prior period has been drier than normal
- 10 - 14 then period has been normal
- 15 - 18 then period has been wetter than normal

Condition value:

- Dry (D) =1
- Normal (N) =2
- Wet (W) =3

Conclusions: Wetter than normal precipitation conditions were present prior to the field visit.

Appendix B-2. Daily Precipitation 10 to 12 days preceding field work, Anacortes, Washington

Date (2014)	Daily Precipitation (inches) ^a
Apr 8	0.03
Apr 7	0.25
Apr 6	0.00
Apr 5	0.00
Apr 4	0.00
Apr 3	0.00
Apr 2	0.00
Apr 1	0.00
Mar 31	0.10
Mar 30	0.12
Mar 29	0.07
Mar 28	0.00

^aNOAA 2014