



September 4, 2013

City of Kirkland
 Planning and Community Development
 Attention: Sean LeRoy
 123 – 5th Avenue
 Kirkland, WA 98033

RE/MAX
 NORTHWEST
 Courtesy of:
 T. Emmett McLaulin
 425-214-3602
 emmett@emclaulin.com

Date:
 2014.06.1
 8 12:31:05
 -07'00'

Re: Webber Property - Wetland Delineation Study

The Watershed Company Reference Number: 060701.58

Dear Sean:

Staff from The Watershed Company have assessed the Webber property, located at 12833 NE 90th Street in Kirkland (parcel no. 3888100100), for jurisdictional wetland conditions on multiple occasions. A previous wetland delineation study was completed in July 2008, but was not surveyed. The wetland findings were reviewed with Mr. Webber and Washington State Department of Ecology staff in June 2011. Ecologist Mike Foster and I updated the prior study, on August 30, 2013. This letter summarizes the findings of this study and details applicable federal, state, and local regulations.

The following attachments are included:

- Wetland Delineation Sketch
- Wetland Determination Data Forms
- City of Kirkland Wetland Rating Form
- Ecology Wetland Rating Form

Methods

Prior work on file with our office was reviewed, including past correspondence and the 2008 report. Public-domain information on the subject property was also reviewed. These sources include USDA Natural Resources Conservation Service Soil maps, U.S. Fish and Wildlife Service National Wetland Inventory maps, City of Kirkland sensitive areas map, Washington Department of Fish and Wildlife interactive mapping programs (PHS on the Web), and King County's GIS mapping website (iMAP).

Consistent with Kirkland Zoning Code Chapter 90.35 and Washington State Administrative Code 173-22-035, the subject property was evaluated in the field for wetlands using methodology from the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*

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(Regional Supplement) (US Army Corps of Engineers [Corps] April 2008). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Regional Supplement were determined to be wetland. Soil, vegetation, and hydrologic parameters were sampled at several locations on the property to make the determination. We recorded data at five of these locations. Data points are marked with yellow- and black-striped flags.

The boundary of Wetland A is marked with 16 pink- and black-striped flags. A sketch of the approximate location of these flags is enclosed. A survey of flag locations had not been conducted as of the preparation of this letter. Wetland A was classified using both *Kirkland's Wetland Field Data Form* and *Western Washington Wetland Rating System* (Ecology, Aug 2004, version 2) (Rating System). Field observations and aerial photos from King County's GIS mapping website (iMAP) were used to rate the wetland found on the subject site.

Findings

The subject property is in the Forbes Creek basin. The 1.5-acre property contains a single-family residence and slopes down moderately to the west. The west end of the property contains a wetland, referred to here as Wetland A. A ditched stream is found along the western edge of Wetland A, adjacent to 128TH Avenue NE.

Wetland A

As stated in previous communications regarding this property, Wetland A was identified on The City of Kirkland wetland and stream inventory and the National Wetland Inventory (map attached). It is also described in *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company 1998). It was also identified and partially delineated in 1998 by Ecology NW and Adolfson Associates (Now ESA Adolfson) subsequently verified that work for the city. Nick Gillen, currently an Environmental Scientist III at King County Department of Permitting and Environmental Review, also delineated a portion of this wetland in 1998 for the adjoining property owner to the south. The presence of a jurisdictional wetland at the west end of the property was also verified by staff from the Washington State Department of Ecology in June 2011.

Wetland A is a slope wetland comprised of Palustrine forested and scrub-shrub vegetation classes. Forested patches are characterized by western red cedar, red alder and mountain ash with an understory of salmonberry, lady fern, sword fern, and skunk cabbage. Hardhack spirea, twinberry, red-osier dogwood, and vine maple characterize the shrub strata. Occurrences of Himalayan blackberry, Pacific dewberry and English ivy are also present. The northeast wetland boundary includes a small hummock that contains Douglas-fir; since wetland conditions surround the hummock, it was not excluded from the wetland boundary. Sampled soils exhibit Redox Dark Surface (F6) or

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Depleted Matrix (F3) hydric soil indicators. Wetland hydrology indicators ranged from a High Water Table (A2) and Saturation (A3) to Oxidized Rhizospheres along Living Roots (C3). All three wetland parameters are met; this is a jurisdictional wetland.

Wetland A is bordered by NE 90th Street to the north and 128th Avenue NE to the west. The east and north boundary of Wetland A was delineated and marked during our August 30, 2013 field visit. The findings of this study are consistent with our 2008 wetland determination and other observations of the property.

Stream

As shown on City of Kirkland Sensitive Area mapping, the west edge of Wetland A is continuous with a ditched stream that parallels 128th Avenue NE. The wetland is the most encumbering feature, so the stream was not delineated.

Kirkland's Sensitive area map shows that the ditched stream is a tributary to a salmonid-bearing section of Forbes Creek. However, *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company, 1998) states that cutthroat trout were found in this tributary only below 124th Avenue NE. The stream was flowing on the day of our August 2013 site visit; it appears to be perennial.

Local Regulations

In Kirkland, wetlands and streams are regulated under Chapter 90, Drainage Basins, of the Kirkland Zoning Code (KZC). Buffer width determinations for wetlands (KZC 90.45) are based on both wetland type and basin category. Wetland A is located in the Forbes Creek basin, a primary basin (KZC 90.30). Wetland A scored 24 points on Kirkland's *Wetland Field Data Form* categorizing it as a Type 2 wetland. Type 2 wetlands in primary basins in the City of Kirkland require a standard 75-foot buffer (KZC 90.45).

Based on available data, the ditched stream is presumed to be a non-salmon bearing perennial stream, which makes it a Class B stream (KZC 90.30). Class B streams require a 60 foot buffer. The stream buffer ends within Wetland A. Therefore, the wetland buffer is the most encumbering feature.

In addition to the standard buffer, Kirkland requires that there be a "setback at least 10 feet from the designated or modified wetland buffer" within which no buildings or other above-ground structures may be constructed. The Planning Official may make an exception for minor improvements that do not diminish wetland buffer functions (KZC 90.45[2]).

In general, site improvements should be designed to avoid and, if unavoidable, to minimize adverse impacts to sensitive areas (KZC 90.130). According to KZC 90.60, wetland buffers may be modified under two options. First, an applicant may build

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within a buffer using a buffer averaging plan. Any buffer area lost to development must be added to the buffer elsewhere on the property, given that buffer area is of equal or better size and quality. Second, the applicant may reduce the buffer if it can be shown that an enhancement plan will improve buffer function overall despite the buffer intrusion. Enhancement typically involves removing invasive plant species, planting native vegetation, and placement of habitat features. Wetland buffers may not be reduced at any point by more than one-third of the standard buffer width (KZC 90.60). Averaging and reduction may not be used together. Any plan drafted to reduce buffer widths must be approved by the City of Kirkland through a review process.

Since other agencies regulate wetlands under a different classification system, Wetland A was also rated using the Ecology rating form. Under that rating system it scores 6 points for water quality, 16 points for hydrologic functions, and 18 points for habitat functions; the total functions score is 40 points. It is a Category III wetland.

State and Federal Regulations

Wetlands and streams are also regulated by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act. Any filling of Waters of the State, including wetlands (except isolated wetlands), would likely require notification and permits from the Corps. Wetland A would not be considered isolated as it has a clear surface water connection to both "reasonably permanent" and "traditional navigable" waters of the U.S. This connection may be verified by the Corps through the Jurisdictional Determination process. Federally permitted actions that could affect endangered species (i.e. salmon or bull trout) may also require a biological assessment study and consultation with the U.S. Department of Fish and Wildlife and/or the National Marine Fisheries Service. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology. Finally, the Corps also must find the project meets the requirements of Section 106 of the National Historic Preservation Act, which typically necessitates a cultural resources study. The state Water Pollution Control Act (Chapter 90.48 RCW) and associated water quality regulations (Chapter 173-201A WAC) make no distinction between isolated and non-isolated wetlands. All waters of the state, including isolated wetlands, are covered by state law and administered by Ecology.

Disclaimer

The information contained in this letter or report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available to us at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this

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report are subject to verification and agreement by the appropriate local, State and Federal regulatory authorities. No other warranty, expressed or implied, is made.

Please call if you have any questions or if we can provide you with any additional information.

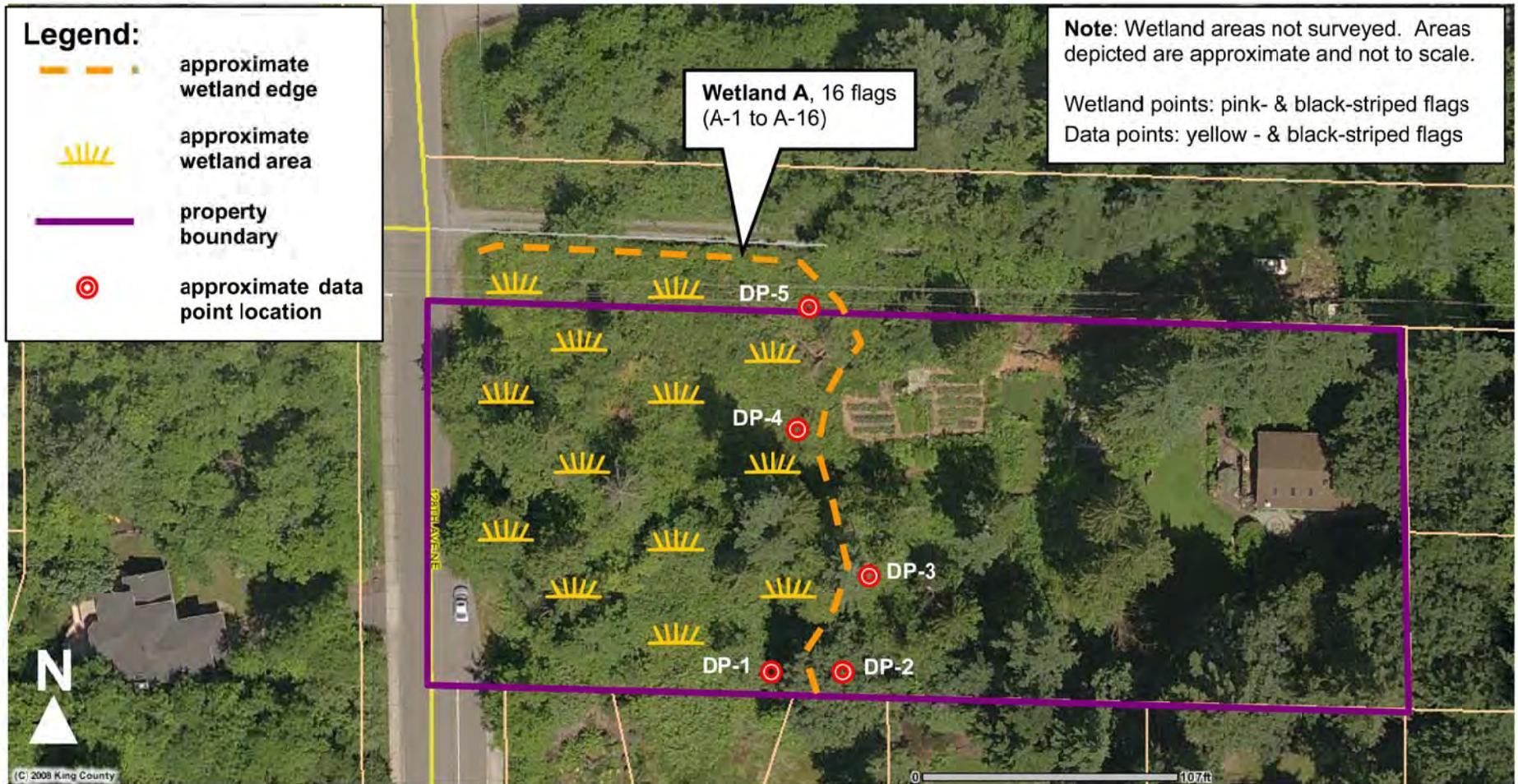
Sincerely,

A handwritten signature in blue ink that reads "Nell Lund". The signature is written in a cursive style with a large initial "N".

Nell Lund, PWS (#2203)

Ecologist

Enclosures



Wetland Delineation Sketch

Webber Property (parcel number 3888100100)
 12833 NE 90th Street
 Kirkland, Washington
 Prepared for Sean LeRoy at City of Kirkland
 TWC Ref. No. 060701.58



750 Sixth Street South | Kirkland | WA 98033
 p 425.822.5242 f 425.827.8136

Field Date: August 30, 2013

DP- 1

Project Site: 12833 NE 90th Street (parcel 3888100100)		Sampling Date: Aug. 30, 2013	
Applicant/Owner: Webber, D.		Sampling Point: DP- 1	
Investigator: N. Lund, J.M. Foster		City/County: Kirkland / King	
Sect., Township, Range: S4 T 25N R 5E		State: WA	
Landform (hillslope, terrace, etc): Hillslope	Slope (%): <5%	Local relief (concave, convex, none): none	
Subregion (LRR): A	Lat:	Long:	Datum:
Soil Map Unit Name: Indianola loamy fine sand, 4-15% slopes		NWI classification:	PFOC
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <i>Thuja plicata</i>	50	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC:	5 (A)
2. <i>Alnus rubra</i>	20	Y	FAC	Total Number of Dominant Species Across All Strata:	7 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	71 (A/B)
4.	70	= Total Cover			
Sapling/Shrub Stratum (Plot size 3m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet	
1. <i>Rubus spectabilis</i>	75	Y	FAC	Total % Cover of	
2.				OBL species	x 1 =
3.				FACW species	x 2 =
4.				FAC species	x 3 =
5.				FACU species	x 4 =
	75	= Total Cover		UPL species	x 5 =
				Column totals	(A) (B)
				Prevalence Index = B / A =	
Herb Stratum (Plot size 1m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators	
1. <i>Lysichiton americanum</i>	15	Y	OBL	yes	Dominance test is > 50%
2. <i>Equisetum telmateia</i>	5	Y	FACW		Prevalence test is ≤ 3.0 *
3. <i>Polystichum munitum</i>	5	Y	FACU		Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
4. <i>Athyrium filix-femina</i>	2	N	FAC		Wetland Non-Vascular Plants *
5.					Problematic Hydrophytic Vegetation * (explain)
6.					
7.					
8.					
9.					
10.					
11.	27	= Total Cover		* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody Vine Stratum (Plot size)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1. <i>Rubus armeniacus</i>	10	Y	FACU		
2.					
	10	= Total Cover			
% Bare Ground in Herb Stratum					
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 2/1	100					Sandy clay loam	High organic content, greasy
9-14	2.5Y 3/1	100					Loamy sand	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except 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 Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

Indicators for Problematic Hydric Soils³

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input checked="" type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/>

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

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

Hydric soil present? Yes No

Remarks: **Organic masking redox.**

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required):

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

Field Observations

Surface Water Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Depth (in):	
Water Table Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Depth (in):	9" BGS
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Depth (in):	surface

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: The following data was recorded in the same approximate location as this current data point.
07/22/2008: Water table was 21" below ground surface (BGS) and saturation was at 9" BGS
06/22/2011: Water table was 13" BGS and saturation was at 10" BGS.

Remarks:

DP- 2

Attachment 7

Project Site: 12833 NE 90th Street (parcel 3888100100)		Sampling Date: Aug. 30, 2013	
Applicant/Owner: Webber, R.		Sampling Point: DP- 2	
Investigator: N. Lund, J.M. Foster		City/County: Kirkland / King	
Sect., Township, Range: S4 T 25N R 5E		State: WA	
Landform (hillslope, terrace, etc): Hillslope	Slope (%): <5%	Local relief (concave, convex, none): none	
Subregion (LRR): A	Lat:	Long:	Datum:
Soil Map Unit Name: Indianola loamy fine sand, 4-15% slopes		NWI classification:	PFOC
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic? <input type="checkbox"/> Yes <input type="checkbox"/> No		(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet																					
1. <i>Thuja plicata</i>	90	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC: 2 (A) Total Number of Dominant Species Across All Strata: 4 (B) Percent of Dominant Species that are OBL, FACW, or FAC: 50 (A/B)																					
2. <i>Sorbus aucuparia</i>	10	N	NL																						
3.																									
4.																									
100 = Total Cover																									
Sapling/Shrub Stratum (Plot size 3m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet																					
1. <i>Prunus laurocerasus</i> ⁺	5	Y	NL	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Total % Cover of</th> <th style="text-align: center;">Multiply by</th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td></td> <td style="text-align: center;">x 1 =</td> </tr> <tr> <td>FACW species</td> <td></td> <td style="text-align: center;">x 2 =</td> </tr> <tr> <td>FAC species</td> <td></td> <td style="text-align: center;">x 3 =</td> </tr> <tr> <td>FACU species</td> <td></td> <td style="text-align: center;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td></td> <td style="text-align: center;">x 5 =</td> </tr> <tr> <td>Column totals</td> <td style="text-align: center;">(A)</td> <td style="text-align: center;">(B)</td> </tr> </tbody> </table>	Total % Cover of		Multiply by	OBL species		x 1 =	FACW species		x 2 =	FAC species		x 3 =	FACU species		x 4 =	UPL species		x 5 =	Column totals	(A)	(B)
Total % Cover of		Multiply by																							
OBL species		x 1 =																							
FACW species		x 2 =																							
FAC species		x 3 =																							
FACU species		x 4 =																							
UPL species		x 5 =																							
Column totals	(A)	(B)																							
2. <i>Oemleria cerasiformis</i>	5	Y	FACU																						
3. <i>Rubus spectabilis</i>	3	Y	FAC																						
4.																									
5.																									
13 = Total Cover																									
Herb Stratum (Plot size 1m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B / A =																					
1.				<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Hydrophytic Vegetation Indicators</th> </tr> </thead> <tbody> <tr> <td style="width: 50%;">no</td> <td style="width: 50%;">Dominance test is > 50%</td> </tr> <tr> <td></td> <td>Prevalence test is ≤ 3.0 *</td> </tr> <tr> <td></td> <td>Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)</td> </tr> <tr> <td></td> <td>Wetland Non-Vascular Plants *</td> </tr> <tr> <td></td> <td>Problematic Hydrophytic Vegetation * (explain)</td> </tr> <tr> <td colspan="2">* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</td> </tr> <tr> <td colspan="2"> Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </td> </tr> </tbody> </table>	Hydrophytic Vegetation Indicators		no	Dominance test is > 50%		Prevalence test is ≤ 3.0 *		Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)		Wetland Non-Vascular Plants *		Problematic Hydrophytic Vegetation * (explain)	* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>						
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8.																									
9.																									
10.																									
11.																									
0 = Total Cover																									
Woody Vine Stratum (Plot size)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B / A =																					
1. <i>Rubus armeniacus</i>	100	Y	FACU	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																					
2. <i>Helix hedera</i> [*]	10	N	NL																						
110 = Total Cover																									
% Bare Ground in Herb Stratum																									
Remarks: * No Indicator, omitted from dominance calculation.																									

SOIL

Sampling Point – DP-2

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 3/2	100					Sandy loam	

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

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

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

Indicators for Problematic Hydric Soils³

- 2cm Muck (A10)
- Red Parent Material (TF2)
- Other (explain in remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric soil present?

Yes

No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required):

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

Field Observations

- | | | | |
|---|------------------------------|--|-------------|
| Surface Water Present? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |
| Water Table Present? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |
| Saturation Present? (includes capillary fringe) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |

Wetland Hydrology Present?

Yes

No

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

Remarks: Powder-dry

DP- 3

Project Site: 12833 NE 90th Street (parcel 3888100100)		Sampling Date: Aug. 30, 2013	
Applicant/Owner: Webber, R.		Sampling Point: DP- 3	
Investigator: N. Lund, J.M. Foster		City/County: Kirkland / King	
Sect., Township, Range: S4 T 25N R 5E		State: WA	
Landform (hillslope, terrace, etc): Hillslope	Slope (%): <5%	Local relief (concave, convex, none): none	
Subregion (LRR): A	Lat:	Long:	Datum:
Soil Map Unit Name: Indianola loamy fine sand, 4-15% slopes		NWI classification:	PFOC
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks: Marginal area, near delineated wetland boundary.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <i>Thuja plicata</i>	100	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC:	4 (A)
2. <i>Alnus rubra</i>	15	N	FAC	Total Number of Dominant Species Across All Strata:	4 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	100 (A/B)
4.	115 = Total Cover				
Sapling/Shrub Stratum (Plot size 3m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet	
1. <i>Rubus spectabilis</i>	10	Y	FAC	Total % Cover of	
2.				OBL species	x 1 =
3.				FACW species	x 2 =
4.				FAC species	x 3 =
5.				FACU species	x 4 =
	10 = Total Cover			UPL species	x 5 =
				Column totals	(A) (B)
Herb Stratum (Plot size 1m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B / A =	
1. <i>Lamiastrum galeobdolon*</i>	5	Y	NL		
2. <i>Equisetum telmateia</i>	2	Y	FACW		
3. <i>Athyrium filix-femina</i>	2	Y	FAC		
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.	9 = Total Cover				
Woody Vine Stratum (Plot size)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators	
1. <i>Hedera helix*</i>	10	Y*	NL	yes	Dominance test is > 50%
2. <i>Convolvulus sp.*</i>	5	Y*	NL		Prevalence test is ≤ 3.0 *
	15 = Total Cover				Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
					Wetland Non-Vascular Plants *
					Problematic Hydrophytic Vegetation * (explain)
% Bare Ground in Herb Stratum				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Remarks: * No Indicator, omitted from dominance calculation.				Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sampling Point - DP-3

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 2/1	98	10YR 4/3	2	RM	M	Sandy clay loam	
10-16	10YR 3/1	93	10YR 4/6	7	C	M	Loamy sand	

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

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

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except 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 Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³

- 2cm Muck (A10)
- Red Parent Material (TF2)
- Other (explain in remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric soil present?

Yes

No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required):

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

Field Observations

- Surface Water Present? Yes No Depth (in): _____
- Water Table Present? Yes No Depth (in): _____
- Saturation Present? Yes No Depth (in): **14" BGS**

Wetland Hydrology Present?

Yes

No

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

Remarks: **Saturation depth starts below 12 inches.**

DP- 4

Project Site: 12833 NE 90th Street (parcel 3888100100)			Sampling Date: Aug. 30, 2013		
Applicant/Owner: Webber, R.			Sampling Point: DP- 4		
Investigator: N. Lund, J.M. Foster			City/County: Kirkland / King		
Sect., Township, Range: S4 T 25N R 5E			State: WA		
Landform (hillslope, terrace, etc): Hillslope		Slope (%): <5%	Local relief (concave, convex, none): Slightly concave		
Subregion (LRR): A	Lat:	Long:	Datum:		
Soil Map Unit Name: Alderwood gravelly sandy loam, 6-15% slopes			NW1 classification: PFOC		
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			(If no, explain in remarks.)		
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?					
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet																					
1.				Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)																					
2.																									
3.																									
4.																									
0 = Total Cover				Total Number of Dominant Species Across All Strata: 3 (B)																					
				Percent of Dominant Species that are OBL, FACW, or FAC: 67% (A/B)																					
Sapling/Shrub Stratum (Plot size 3m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet																					
1. Rubus spectabilis	80	Y	FAC	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">Total % Cover of</th> <th>Multiply by</th> </tr> <tr> <td>OBL species</td> <td></td> <td>x 1 =</td> </tr> <tr> <td>FACW species</td> <td></td> <td>x 2 =</td> </tr> <tr> <td>FAC species</td> <td></td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td></td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td></td> <td>x 5 =</td> </tr> <tr> <td>Column totals</td> <td>(A)</td> <td>(B)</td> </tr> </table>	Total % Cover of		Multiply by	OBL species		x 1 =	FACW species		x 2 =	FAC species		x 3 =	FACU species		x 4 =	UPL species		x 5 =	Column totals	(A)	(B)
Total % Cover of		Multiply by																							
OBL species		x 1 =																							
FACW species		x 2 =																							
FAC species		x 3 =																							
FACU species		x 4 =																							
UPL species		x 5 =																							
Column totals	(A)	(B)																							
2. Rhamnus purshiana	25	Y	FAC																						
3.																									
4.																									
5.																									
105 = Total Cover				Prevalence Index = B / A =																					
Herb Stratum (Plot size 1m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators																					
1. Polystichum munitum	5	Y	FACU	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>yes</td> <td>Dominance test is > 50%</td> </tr> <tr> <td></td> <td>Prevalence test is ≤ 3.0 *</td> </tr> <tr> <td></td> <td>Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)</td> </tr> <tr> <td></td> <td>Wetland Non-Vascular Plants *</td> </tr> <tr> <td></td> <td>Problematic Hydrophytic Vegetation * (explain)</td> </tr> </table> <p>* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</p>	yes	Dominance test is > 50%		Prevalence test is ≤ 3.0 *		Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)		Wetland Non-Vascular Plants *		Problematic Hydrophytic Vegetation * (explain)											
yes	Dominance test is > 50%																								
	Prevalence test is ≤ 3.0 *																								
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)																								
	Wetland Non-Vascular Plants *																								
	Problematic Hydrophytic Vegetation * (explain)																								
2.																									
3.																									
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									
11.																									
5 = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																					
Woody Vine Stratum (Plot size)	Absolute % Cover	Dominant Species?	Indicator Status	Remarks:																					
1. Rubus ursinus	Trace	N	FACU																						
2.																									
Trace = Total Cover																									
% Bare Ground in Herb Stratum																									
Remarks:																									

SOIL

Sampling Point – DP-4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	98	10YR 3/4	2	C	M	Sandy loam	
8-14	2.5Y 3/2	95	7.5YR 3/4	5	C	M, PL	Loamy sand	

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

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

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except 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 Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³

- 2cm Muck (A10)
- Red Parent Material (TF2)
- Other (explain in remarks)
-

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

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

Hydric soil present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required):

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

Field Observations

Surface Water Present? Yes No Depth (in): _____
 Water Table Present? Yes No Depth (in): _____
 Saturation Present? Yes No Depth (in): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks: **Moist, not saturated**

DP- 5

Project Site: 12833 NE 90th Street (parcel 3888100100)		Sampling Date: Aug. 30, 2013	
Applicant/Owner: Webber, R.		Sampling Point: DP- 5	
Investigator: N. Lund, J.M. Foster		City/County: Kirkland / King	
Sect., Township, Range: S4 T 25N R 5E		State: WA	
Landform (hillslope, terrace, etc): Hillslope	Slope (%): <5%	Local relief (concave, convex, none): none	
Subregion (LRR): A	Lat:	Long:	Datum:
Soil Map Unit Name: Alderwood gravelly sandy loam, 6-15% slopes		NWI classification:	PFOC
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet																					
1.				Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)																					
2.																									
3.																									
4.																									
0 = Total Cover				Total Number of Dominant Species Across All Strata: 3 (B)																					
Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)																									
Sapling/Shrub Stratum (Plot size 3m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet																					
1 <i>Rubus spectabilis</i>	90	Y	FAC	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">Total % Cover of</th> <th>Multiply by</th> </tr> <tr> <td>OBL species</td> <td></td> <td>x 1 =</td> </tr> <tr> <td>FACW species</td> <td></td> <td>x 2 =</td> </tr> <tr> <td>FAC species</td> <td></td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td></td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td></td> <td>x 5 =</td> </tr> <tr> <td>Column totals</td> <td>(A)</td> <td>(B)</td> </tr> </table>	Total % Cover of		Multiply by	OBL species		x 1 =	FACW species		x 2 =	FAC species		x 3 =	FACU species		x 4 =	UPL species		x 5 =	Column totals	(A)	(B)
Total % Cover of		Multiply by																							
OBL species		x 1 =																							
FACW species		x 2 =																							
FAC species		x 3 =																							
FACU species		x 4 =																							
UPL species		x 5 =																							
Column totals	(A)	(B)																							
2 <i>Lonicera involucrata</i>	25	Y	FACW																						
3.																									
4.																									
5.																									
115 = Total Cover				Prevalence Index = B / A =																					
Herb Stratum (Plot size 1m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators																					
1 <i>Athyrium filix-femina</i>	5	Y	FAC	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>yes</td> <td>Dominance test is > 50%</td> </tr> <tr> <td></td> <td>Prevalence test is ≤ 3.0 *</td> </tr> <tr> <td></td> <td>Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)</td> </tr> <tr> <td></td> <td>Wetland Non-Vascular Plants *</td> </tr> <tr> <td></td> <td>Problematic Hydrophytic Vegetation * (explain)</td> </tr> </table> <p>* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</p>	yes	Dominance test is > 50%		Prevalence test is ≤ 3.0 *		Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)		Wetland Non-Vascular Plants *		Problematic Hydrophytic Vegetation * (explain)											
yes	Dominance test is > 50%																								
	Prevalence test is ≤ 3.0 *																								
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)																								
	Wetland Non-Vascular Plants *																								
	Problematic Hydrophytic Vegetation * (explain)																								
2 <i>Equisetum telmateia</i>	Trace	N	FACW																						
3 <i>Polystichum munitum</i>	Trace	N	FACU																						
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									
11.																									
5+ = Total Cover																									
Woody Vine Stratum (Plot size)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?																					
1 <i>Rubus armeniacus</i>	Trace	N	FACU	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																					
2.																									
Trace = Total Cover																									
% Bare Ground in Herb Stratum																									
Remarks:																									

SOIL

Sampling Point - DP-5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	100					Sandy loam	
8-16	2.5Y 4/1	85	7.5YR 3/3	15	C	PL, M	Sandy clay loam	

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

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

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

Indicators for Problematic Hydric Soils³

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric soil present?

Yes

No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required):

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

Field Observations

- | | | | |
|---|------------------------------|--|-------------|
| Surface Water Present? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |
| Water Table Present? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |
| Saturation Present? (includes capillary fringe) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |

Wetland Hydrology Present?

Yes

No

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

Remarks:

**WETLAND FIELD DATA FORM – Webber property located at
12833 NE 90th Street Kirkland, WA 98033.**

Rating done on July 22, 2008 & Aug. 30, 2013 by The Watershed Company.



WETLAND FIELD DATA FORM

BEGIN BY CHECKING ANY OF THE FOLLOWING (a. – e.) THAT APPLY:

- a. The wetland is contiguous to Lake Washington;
- b. The wetland contains at least 1/4 acre of organic soils, such as peat bogs or mucky soils;
- c. The wetland is equal to or greater than 10 acres in size and having three or more wetland classes, as defined by the U.S. Fish & Wildlife Service (Cowardin et al., 1979), one of which is open water;
- d. The wetland has significant habitat value to state or federally listed threatened or endangered wildlife species; or
- e. The wetland contains state or federally listed threatened or endangered plant species.

IF ANY OF THE CRITERIA LISTED ABOVE ARE MET, THEN THE WETLAND IS CONSIDERED TO BE TYPE 1. IF THAT IS THE CASE, PLEASE CONTINUE TO COMPLETE THE ENTIRE FORM, BUT DO NOT ASSIGN POINTS.

IF THE WETLAND DOES NOT MEET THE CRITERIA LISTED ABOVE FOR TYPE 1, COMPLETE THE ENTIRE FORM, USING THE ASSIGNED POINTS TO DETERMINE IF IT IS A TYPE 2 OR TYPE 3 WETLAND.

Type 2 wetlands typically have at least two wetland vegetation classes, are at least partially surrounded by buffers of native vegetation, connected by surface water flow (perennial or intermittent) to other wetlands or streams, and contain or are associated with forested habitat.

1. Total wetland area

Estimate wetland area and score from choices	Acres	Point Value	<u>Points</u>
	>20.00	= 6	
	10-19.99	= 5	
	5-9.99	= 4	
	1-4.99	= 3	
	0.1-0.99	= 2	2
	<0.1	= 1	

(2 points)

2. Wetland classes: Determine the number of wetland classes that qualify, and score according to the table.

	# of Classes	Points
Open Water: if the area of open water is >1/3 acre or >10% of the total wetland area	1	= 1
Aquatic Beds: if the area of aquatic beds is >10% of the open water area or >1/2 acre	2	= 3
Emergent: if the area of emergent class is >1/2 acre or >10% of the total wetland area	3	= 5
Scrub-Shrub: if the area of scrub-shrub class is >1/2 acre or >10% of the total wetland area	4	= 7
Forested: if the area of forested class is >1/2 acre or >10% of the total wetland area	5	= 10

Forested portion appears to be >10%

(3 points)

3. Plant species diversity.

For all wetland classes which qualified in 2 above, count the number of different plant species and score according to the table below. You do not have to name them.

e.g., if a wetland has an aquatic bed class with 3 species, and emergent class with 4 species and a scrub-shrub class with 2 species, you would circle 2, 2, and 1 in the second column (below).

Class	# of Species	Point Value	Class	# of Species	Point Value
Aquatic Bed	1-2	= 1	Scrub-Shrub	1-2	= 1
	3	= 2		3-4	= 2
	>3	= 3		>4	= 3
Emergent	1-2	= 1	Forested	1-2	= 1
	3-4	= 2		3-4	= 2
	>4	= 3		>4	= 3

PFO:western red cedar, red alder, black twinberry, Himalayan blackberry, osoberry, lady fern, giant horsetail, skunk cabbage sword fern, glyceria spp, Pacific dewberry and others.

PSS: western red cedar, Sitka willow, black twinberry, Himalayan blackberry, red elderberry, salmonberry, vine maple, giant horsetail, Watson's willowherb, small-fruited bulrush, lady fern, skunk cabbage, American speedwell, bittercress, Pacific dewberry, curly dock, sword fern, and others.

(6 points)

4. Structural diversity.

If the wetland has a forested class, add 1 point for each of the following attributes present:

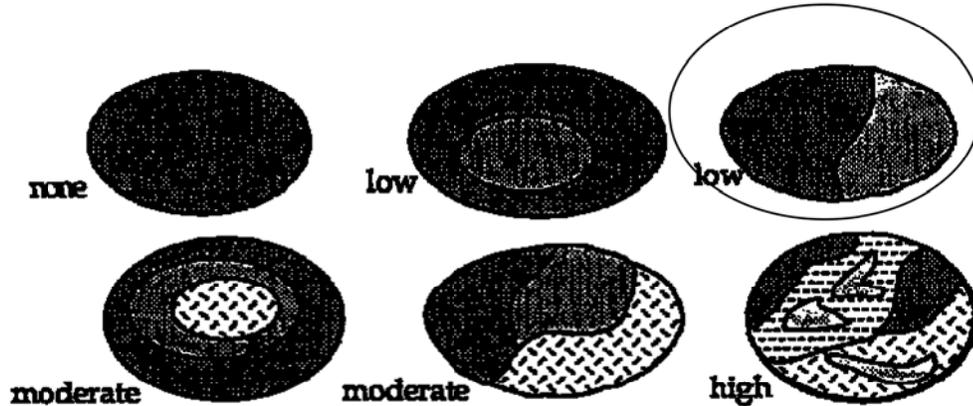
- Trees >50' tall = 1
- Trees 20' to 49' tall = 1
- shrubs = 1
- Herbaceous ground cover > 1

(4 points)

5. Interspersion between wetland classes.

Decide from the diagrams below whether interspersion between wetland classes is high, moderate, low or none

- 3 = High
- 2 = Moderate
- 1 = Low
- 0 = None



(1 point)

6. Habitat features

Add points associated with each habitat feature listed:

- Is there evidence of current use by beavers? *No* = 3
- Is a heron rookery located within 300'? *No* = 2
- Are raptor nest(s) located within 300'? *No* = 1
- Are there at least 2 standing dead trees (snags) per acre? *Yes* = 1
- Are there any other perches (wires, poles, or posts)? *No* = 1
- Are there at least 3 downed logs per acre? *Yes* = 1

(2 points)

7. Connection to streams

Is the wetland connected at any time of the year via surface water? (score one answer only)

- Is the wetland connected at any time of the year via surface water?
 - To a perennial stream or a seasonal stream *with* fish? *Yes, surface water reaches Forbes Creek, which contains fish* = 5
 - To a seasonal stream *without* fish = 3
 - Is not connected to any stream = 0

(5 points)

8. Buffers

Step 1: Estimate (to the nearest 5%) the percentage of each buffer or land-use type (below) that adjoins the wetland boundary. Then multiply these percentages by the factor(s) below and enter result in the column to the right.

	% of Buffer	Step 1	Width Factor	Step 2
Roads, buildings or parking lots	<u>50%</u>	X 0 = <u>0</u>	<u>0</u> =	<u>0</u>
Lawn, grazed pasture, vineyards or annual crops	<u>35%</u>	X 1 = <u>35</u>	<u>2</u> =	<u>70</u>
Ungrazed grassland or orchards	<u>0%</u>	X 2 = <u>0</u>	<u>0</u> =	<u>0</u>
Open water or native grasslands	<u>0%</u>	X 3 = <u>0</u>	<u>0</u> =	<u>0</u>
Forest or shrub	<u>15%</u>	X 4 = <u>60</u>	<u>3</u> =	<u>180</u>
			Add buffer total	<u>250</u>

Step 2: Multiply result(s) of step 1:

By 1 if buffer width is 25-50'

By 2 if buffer width is 50-100'

By 3 if buffer width is >100'

Enter results and add subscores

Step 3: Score points according to the following table:

Buffer Total

900-1200 = 4

600-899 = 3

300-599 = 2

100-299 = 1

(1 points)

9. Connection to other habitat areas:

Is there a riparian corridor to other wetlands within 0.25 of a mile, or a corridor >100' wide with good forest or shrub cover to any other habitat area? *No* = 5

Is there a narrow corridor <100' wide with good cover or a wide corridor >100' wide with low cover to any other habitat area? *No* = 3

Is there a narrow corridor <100' wide with low cover or a significant habitat area within 0.25 mile but no corridor? *No* = 1

Is the wetland and buffer completely isolated by development and/or cultivated agricultural land? *Yes* = 0

(0 points).

10. Scoring

Add the scores to get a total: 24

Question: Is the total greater than or equal to 22 points?

Answer:

Yes = Type 2

No = Type 3

Wetland name or number A

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): 12833 NE 90th Street, Kirkland Date of site visit: 08/30/2013
Wetland A
M. Foster
Rated by: N. Lund Trained by Ecology? Yes No Date of Training 10/2008
SEC: 4 TWNSHP: 25N RNGE: 5E Is S/T/R in Appendix D? Yes No

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I II III IV

Category I = Score ≥70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions	6
Score for Hydrologic Functions	16
Score for Habitat Functions	18
TOTAL score for functions	40

Category based on SPECIAL CHARACTERISTICS of wetland

I II Does not Apply

Final Category (choose the “highest” category from above)

III

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	
Mature Forest		Slope	X
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	X	Check if unit has multiple HGM classes present	

Wetland name or number A **Does the wetland unit being rated meet any of the criteria below?**

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X*
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X*
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X*
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

***The study area was reviewed for the presence of endangered, threatened, and priority species using WDFW online Priority Habitat and Species Data, PHS on the Web (<http://wdfw.wa.gov/mapping/phs/>).**

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number A

Classification of Wetland Units in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in Questions 1-7 apply, and go to Question 8.

1. Are the water levels in the wetland unit usually controlled by tides (i.e. except during floods)?
 NO – go to 2 **YES** – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES** – **Freshwater Tidal Fringe** **NO** – **Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).*

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit
 NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet both** of the following criteria?
 The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
 At least 30% of the open water area is deeper than 6.6 ft (2 m)?
 NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?
 The wetland is on a slope (*slope can be very gradual*),
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
 The water leaves the wetland **without being impounded?**
 NOTE: *Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than a foot deep).*
 NO – go to 5 **YES** – The wetland class is **Slope**

Wetland name or number A **5. Does the entire wetland unit meet all of the following criteria?**

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river.
- The overbank flooding occurs at least once every two years

NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

NO - go to 6

YES – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. This means that any outlet, if present, is higher than the interior of the wetland.

NO – go to 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

<i>HGM classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number A

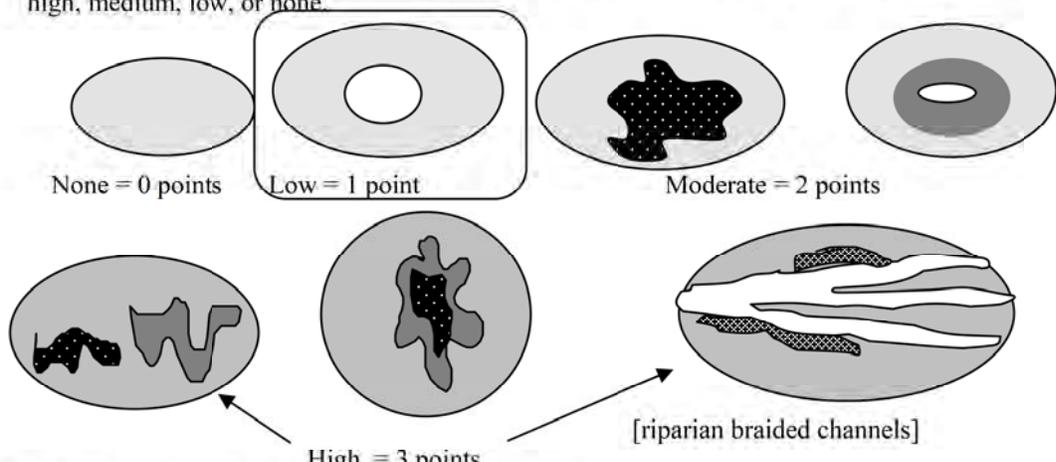
S	Slope Wetlands	Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
S 3. Does the wetland have the potential to reduce flooding and erosion?		<i>(see p. 68)</i>
S	<p>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. <i>Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows)</i></p> <p>Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. points = 6</p> <p>Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3</p> <p>Dense, uncut, rigid vegetation > 1/4 area points = 1</p> <p>More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0</p>	6
S	<p>S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area.</p> <p>YES points = 2</p> <p>NO points = 0</p>	2
S	Total for S 3 <i>Add the points in the boxes above</i>	8
S	<p>S 4. Does the wetland have the opportunity to reduce flooding and erosion? <i>(see p. 70)</i></p> <p>Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply.</i></p> <p><input checked="" type="checkbox"/> Wetland has surface runoff that drains to a river or stream that has flooding problems</p> <p><input type="checkbox"/> Other _____</p> <p><i>(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)</i></p> <p>YES multiplier is 2 NO multiplier is 1</p>	(see p. 70) multiplier <u>2</u>
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 <i>Add score to table on p. 1</i>	16

Comments

Wetland name or number A

These questions apply to wetlands of all HGM classes.									
HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat									
H 1. Does the wetland have the potential to provide habitat for many species?									
<p>H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as defined by Cowardin) if the class is ¼ acre or covers more than 10% of the area of the wetland if unit smaller than 2.5 acres.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover) <input checked="" type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon <p>Add the number of vegetation types that qualify. If you have:</p> <table style="margin-left: auto; margin-right: 0;"> <tr><td>4 structures or more</td><td>points = 4</td></tr> <tr><td><u>3 structures ...</u></td><td>points = 2</td></tr> <tr><td>2 structures</td><td>points = 1</td></tr> <tr><td>1 structure</td><td>points = 0</td></tr> </table>	4 structures or more	points = 4	<u>3 structures ...</u>	points = 2	2 structures	points = 1	1 structure	points = 0	2
4 structures or more	points = 4								
<u>3 structures ...</u>	points = 2								
2 structures	points = 1								
1 structure	points = 0								
<p>H 1.2. Hydroperiods (see p. 73) Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Permanently flooded or inundated <input type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points <table style="margin-left: auto; margin-right: 0;"> <tr><td>4 or more types present</td><td>points = 3</td></tr> <tr><td><u>3 types present ..</u></td><td>points = 2</td></tr> <tr><td><u>2 types present ..</u></td><td>points = 1</td></tr> <tr><td>1 types present</td><td>points = 0</td></tr> </table>	4 or more types present	points = 3	<u>3 types present ..</u>	points = 2	<u>2 types present ..</u>	points = 1	1 types present	points = 0	1
4 or more types present	points = 3								
<u>3 types present ..</u>	points = 2								
<u>2 types present ..</u>	points = 1								
1 types present	points = 0								
<p>H 1.3. Richness of Plant Species (see p. 75) Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</p> <p>If you counted:</p> <table style="margin-left: auto; margin-right: 0;"> <tr><td><u>> 19 species</u></td><td>points = 2</td></tr> <tr><td>5 - 19 species</td><td>points = 1</td></tr> <tr><td>< 5 species</td><td>points = 0</td></tr> </table> <p>List species below if you want to:</p> <p><i>Thuja plicata, Alnus rubra, Phammus purshiana, Tsuga heterophylla, Sorbus aucuparia, Spirea douglasii, Loinicera involucrata, Rubus spectabilis, Cornus sericea, Acer circinatum, Scirpus microcarpus, Lysichiton americanus, Athyrium filix-femina, Polystichum munitum, Epilobium ciliatum, Veronica americana, Ranunculus repens, Rubus armeniacus, Rubus ursinus, Rumex crispus, Cardamine sp., Equisetum telmateia</i></p>	<u>> 19 species</u>	points = 2	5 - 19 species	points = 1	< 5 species	points = 0	2		
<u>> 19 species</u>	points = 2								
5 - 19 species	points = 1								
< 5 species	points = 0								

Wetland name or number A

<p>H 1.4. Interspersion of habitats (see p. 76) Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p>  <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points</p> <p>[riparian braided channels]</p> <p>NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".</p>	<p>1</p>
<p>H 1.5. Special Habitat Features: (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream for at least 33 ft (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present <input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants <p><i>Note: The 20% stated in early printings of the manual on page 78 is an error.</i></p>	<p>3</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	<p>9</p>

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H 2. Does the wetland have the opportunity to provide habitat for many species?	
<p>H 2.1 Buffers (see p. 80) <i>Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</p> <p><input type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference..... Points = 4</p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... Points = 3</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference..... Points = 3</p> <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK..... Points = 2</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK..... Points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer. Points = 1</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland Points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above.....Points = 1</p>	1
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="text-align: center;">YES = 4 points (go to H 2.3) NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = 2 points (go to H 2.3) NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <p style="padding-left: 40px;">within 5 mi (8km) of a brackish or salt water estuary OR</p> <p style="padding-left: 40px;">within 3 mi of a large field or pasture (>40 acres) OR</p> <p style="padding-left: 40px;">within 1 mi of a lake greater than 20 acres?</p> <p style="text-align: center;">YES = 1 point NO = 0 points</p>	1

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<p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</u></p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland? (NOTE: the connections do not have to be relatively undisturbed)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acres). <input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full description in WDFW PHS report p. 152) <input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. <input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests.) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. <input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158.) <input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. <input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161) <input checked="" type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. <input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A.) <input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. <input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. <input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. <input checked="" type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of >51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30cm (12 in) in diameter at the largest end, and > 6m (20 ft) long. <p style="margin-left: 40px;"> <input type="checkbox"/> If wetland has 3 or more priority habitats = 4 points <input type="checkbox"/> If wetland has 2 priority habitats = 3 points <input type="checkbox"/> If wetland has 1 priority habitat = 1 point <input type="checkbox"/> No habitats = 0 points </p> <p><i>Note: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4.</i></p>	<p>4</p>
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<p>H 2.4 <u>Wetland Landscape</u> (<i>choose the one description of the landscape around the wetland that best fits</i>) <i>(see p. 84)</i></p>		
<p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development).....</p>	points = 5	3
<p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile.....</p>	points = 5	
<p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed.....</p>	points = 3	
<p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile.....</p>	points = 3	
<p>There is at least 1 wetland within ½ mile.....</p>	points = 2	
<p>There are no wetlands within ½ mile.....</p>	points = 0	
<p>H 2. TOTAL Score - opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>		9
<p>TOTAL for H1 from page 14</p>		9
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>		18

