

December 12, 2019

Maya & Pierre Nader  
5472 West Mercer Way  
Mercer Island, WA 98040  
c/o Patricia Brennan Architects  
via email: office@patriciabrennanarchitects.com

## Re: Nader Property, Wetland & Stream Delineation Report

The Watershed Company Reference Number: 191044

Dear Maya and Pierre:

On November 11, 2019, Ecologists Logan Dougherty and Peter Heltzel visited the property comprised of two parcels located at the address above (parcels 294890-0050 and -0051) in Mercer Island, Washington, to delineate jurisdictional wetlands and streams. This letter summarizes the findings of the study and details applicable federal, state, and local regulations. The following documents are enclosed:

- Delineation Sketch
- Wetland Determination Data Forms
- Wetland Rating Forms and Figures

### Findings Summary

One stream (Stream A) and one wetland (Wetland A) are located in the study area. Stream A is classified as a fish-bearing stream (Type F). Buffer widths and setbacks under the current and prior City Code are summarized in the table below.

Feature	Current City Code			Prior City Code		
	Classification	Buffer	Setback	Classification	Buffer	Setback
Wetland A	Category III	110 ft	10 ft	Category II	75 ft	10 ft
Stream A	Type F	120 ft	10 ft	Type 1	75 ft	10 ft

## Study Area

The study area for this project is defined as King County parcels 294890-0050 and -0051, totaling 2.97 acres.

## Methods

Public-domain information on the subject properties was reviewed for this delineation study. Resources and review findings are presented in Table 1 of the “Findings” section of this letter.

The study area was evaluated for wetlands using methodology from the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (U.S. Army Corps of Engineers 2010). Presence or absence of wetlands was determined on the basis of an examination of vegetation, soils and hydrology. These parameters were sampled at several locations along the wetland boundary to determine the wetland edge. Wetlands were classified using the Department of Ecology’s 2014 rating system (Hruby 2014).

Characterization of climatic conditions for precipitation in the Wetland Determination Data Forms were determined using the WETS table methodology (USDA, NRCS 2015). The “Seattle Tacoma Intl AP” station from 1981-2010 was used as a source for precipitation data (<http://agacis.rcc-acis.org/>). The WETS table methodology uses climate data from the three months prior to the site visit month to determine if normal conditions are present in the study area region.

The study area was evaluated for streams based on the presence or absence of an ordinary high water mark (OHWM) as defined by Section 404 of the Clean Water Act, the Washington Administrative Code (WAC) 220-660-030, and the Revised Code of Washington (RCW) 90.58.030.

## Findings

The study area is within in the Mercer Island sub-basin of the Cedar - Sammamish Watershed (WRIA 8); Section 24 of Township 24 North, Range 04 East of the Public Land Survey System. A large ravine extends northwest from the southeast corner of the study area, exiting the study area at its northern boundary. Stream A and Wetland A are located within this ravine.

The study area totals 2.97 acres in size. Parcel 2948900050 (north) is undeveloped. The east side of this parcel contains steep slopes and the aforementioned ravine, while the western half contains a terrace lawn and additional steep slopes that extend west to West Mercer Way. Parcel

2948900051 (south) is developed and contains a single-family home, cottage, and associated driveway and parking areas. This parcel previously contained a detached shed south of the main residence, which was recently destroyed by a fire.

Reviewed public-domain information for the site is summarized below (Table 1).


Table 1. Summary of online mapping and inventory resources.

Resource	Summary
USDA NRCS: Web Soil Survey	<i>Kitsap silt loam, 2 to 8 percent slopes (west), Alderwood and Kitsap soils, very steep (middle), Alderwood gravelly sandy loam, 15 to 30 percent slopes (east).</i>
USFWS: NWI Wetland Mapper	<i>No NWI features mapped on or within 500 feet of study area.</i>
WDFW: PHS on the Web	<i>No streams or wetlands mapped on or within 500 feet of subject parcel. Island Crest Park (adjacent to SE corner of study area) mapped as "biodiversity areas and corridor."</i>
WDFW: SalmonScape	<i>No stream features mapped on or within 500 feet of study area.</i>
WA-DNR: Forest Practices Activity Mapping Tool	<i>No features mapped on or within 500 feet of study area.</i>
King County iMap:	<i>No aquatic Environmentally Sensitive Areas mapped on or within 500 feet of study area. Parcel mapped within erosion hazard area.</i>
City of Mercer Island GIS Mapping Tool:	<i>Perennial watercourse mapped within ravine in study area. Seasonal watercourse mapped within swale south of main residence, meeting perennial channel northeast of main residence.</i>
WETS Climatic Condition	<i>Wetter than normal.</i>

### Wetlands

One wetland (Wetland A) was delineated and flagged in the study area. Wetland A is summarized in Table 2.

Table 2. Wetland A assessment summary.

WETLAND A – Assessment Summary										
Location:	King County parcels 2948900050, 932010TR-B									
WRIA / Sub-basin:	WRIA 8 / Mercer Island sub-basin									
	2014 Western WA Ecology Rating:	Category III								
	Buffer Width:	110 feet*								
	Buffer Setback:	10 feet								
	Wetland Size:	Approx. 1.4 acres								
	Cowardin Classifications:	Palustrine Scrub-Shrub, Palustrine Emergent								
	HGM Classification:	Riverine								
	Wetland Data Sheet:	DP-1								
	Upland Data Sheets:	DP-2, DP-3								
	Flag Color:	Pink- and black-striped								
Flag Numbers:	A-1 to A-20, AA-1 to AA-22									
Vegetation	Tree stratum:	Red alder, western red cedar								
	Shrub stratum:	Salmonberry, Himalayan blackberry, Devil's club								
	Herb stratum:	Lady fern, skunk cabbage, wood fern, giant horsetail								
Soils	Soil survey:	Alderwood and Kitsap soils, very steep; Alderwood gravelly sandy loam, 15 to 30 percent slopes								
	Field data:	Hydrogen Sulfide (A4), Loamy Gleyed Matrix (F2)								
Hydrology	Source:	High groundwater table, hillslope runoff, Stream A								
	Field data:	Saturation (A3), Geomorphic position (D2), FAC-Neutral Test (D5)								
Wetland Functions										
	Water Quality			Hydrologic			Habitat			
Site Potential	H	<u>M</u>	L	<u>H</u>	M	L	H	<u>M</u>	L	
Landscape Potential	<u>H</u>	M	L	<u>H</u>	M	L	H	M	<u>L</u>	
Value	H	M	<u>L</u>	H	M	<u>L</u>	<u>H</u>	M	L	
Score Based on Ratings	6			7			6			<b>TOTAL</b> 19
Description and Comments										
Wetland A is a slope and riverine wetland associated with Stream A, and is located in a ravine that flows northwest through the study area.										

\*Noted buffer widths reflect current City code.

## Watercourses

Stream A meanders through Wetland A, averaging three to four feet in width and flowing on an average gradient of less than five percent. The substrate is dominated by sand with intermittent sections of cobble. Stream A flows into a mapped Type F watercourse approximately a quarter mile downstream (DNR). Based on King County and City of Mercer Island maps' topography layers, it appears that there are not any natural fish passage barriers along this connecting channel, and therefore it is presumed that the on-site segment of Stream A contains suitable fish habitat.



Figure 1. Stream A.

A seasonal stream is mapped by Mercer Island GIS maps, originating in the swale south of the primary residence and flowing north toward Stream A. This swale and the neighborhood upslope were screened from publicly accessible areas for both watercourses and slope wetlands that may generate seasonal runoff. No channels were present in the swale, and no intake structures that would carry the water under the driveway were present. No slope wetlands were identified; the vegetation is characterized by a distinctly non-wetland plant community dominated by cherry laurel and English ivy. One tightline pipe, presumably from the house upslope to the southwest, discharges into the swale. No erosion or channel features are present at the point of discharge. A data point (DP-3) was recorded in the center of the swale to document the lack of wetland vegetation, soil, and hydrology.



Figure 2. Looking into swale where seasonal stream is mapped. Area contains driveway and vegetated area dominated by cherry laurel and English ivy. No channel feature present within swale.

### Non-wetlands

The western portion of the study area contains a single-family house, an additional dwelling unit, driveway, lawn, landscaped areas, and the foundation of a recently incinerated shed. These areas do not exhibit wetland soils or hydrology.

The eastern portion of the study area is contains steep forested slopes vegetated by bigleaf maple, Douglas-fir, western hemlock, beaked hazelnut, sword fern, and English ivy. This area does not exhibit wetland vegetation, soils or hydrology.

## Local Regulations

The project architect indicated that the shed reconstruction project is vested to old City Code. For completeness, current and prior city code for wetland and stream regulations are summarized below.

### Current City Code

The City of Mercer Island regulates critical areas under Mercer Island City Code (MICC) 19.07 *Environment*. Wetlands are regulated under MICC 19.07.190 *Wetlands*. Wetland buffers are assigned based on a combination of the wetland category and habitat score. Wetland A, a

Category III wetland with a habitat score of 6, requires a standard buffer of 110 feet. Within wetlands and wetland buffers, the following activities are prohibited unless the modification is exempt or authorized pursuant to MICC 19.07.120 and 130: removal, excavation, grading, or dredging of material; draining flooding or disturbing the wetland, water level or water table; construction, reconstruction, demolition, or expansion of any structure (MICC 19.07.190.C.3).

Watercourses are regulated under Mercer Island City Code 19.07.180 *Watercourses*. Stream A, a Type F watercourse, requires a buffer of 120 feet, measured from the ordinary high water mark.

The City of Mercer Island defines a watercourse as (MICC 19.16.010):

*Watercourses: A course or route, formed by nature and generally consisting of a channel with a bed, banks, or sides throughout substantially all its length, along which surface waters, with some regularity (annually in the rainy season), naturally and normally flow in draining from higher to lower lands. This definition does not include irrigation and drainage ditches, grass-lined swales, canals, storm water runoff devices, or other courses unless they are used by fish or to convey waters that were naturally occurring prior to construction.*

The definition describes piped watercourses as follows:

*5. Piped watercourses, which are pipes or other conveyances through which surface waters, with some regularity (annually in the rainy season), naturally and normally flow in draining from higher to lower lands. This definition does not include irrigation and drainage ditches, grass-lined swales, canals, storm water runoff devices, or other courses unless they are used by fish or to convey waters that were naturally occurring prior to construction.*

The City-mapped seasonal watercourse is depicted originating in the swale south of the existing residence, flowing across the driveway area, then meeting Stream A northeast of the residence (see Figure 3).



Figure 3. Mercer Island GIS maps (“watercourses” layer turned on).

No aboveground channel features were present within the swale or downslope of the driveway. If the stream existed, then, it would be piped under the driveway. No wetlands or other natural sources of hydrology are present in or upslope of the swale, however, and no pipe intake structures or openings were identified in the swale that would carry flow under the driveway. No pipes or outfall structures were identified downslope of the driveway or discharging into the left bank of Stream A. It is therefore presumed that the mapped seasonal stream does not exist.

Table 3. Summary of wetland and watercourse rating scores, classification, and standard buffer widths per MICC 19.07.190 and MICC 19.07.180).

	Water Quality	Hydrologic	Habitat	Total	Category	Standard Buffer Width	Building Setback
Wetland A	6	7	6	19	III	110 ft.	10 ft.
Stream A	-	-	-	-	Type F	120 ft.	10 ft.

The City of Mercer Island requires that buildings and other structures be set back 10 feet from the edge of a critical area buffer. Within this building setback, the following uses are allowed: landscaping, uncovered decks less than 30 inches above existing or finished grade, building



overhangs less than 18 inches, hardscape and driveways, split-rail fences, trails, and subgrade components of foundations (MICC 19.07.190.C.8).

### New Development

The study area is divided into two legal parcels. Future development of parcel 2948900050 may be proposed. Due to steep slopes on much of the parcel, the existing lawn area appears to be the most feasible location for a new structure. This area appears to be partially encumbered by the critical area buffers and building setbacks associated with Wetland A and Stream A.

MICC provides provisions for modifying critical area buffers. Buffer averaging may be allowed, which allows the buffer to be reduced in one area and enlarged in another, as long as the total area of on-site buffer is not reduced and the buffer width is not reduced more than 75 percent of the standard buffer width at any point. MICC 19.07.180.C.4 provides an illustrated example of buffer averaging (Figure 4). It appears that there may not be unencumbered areas in which to enlarge the critical area buffers in another location on the property; this can be confirmed upon receipt of the site survey.

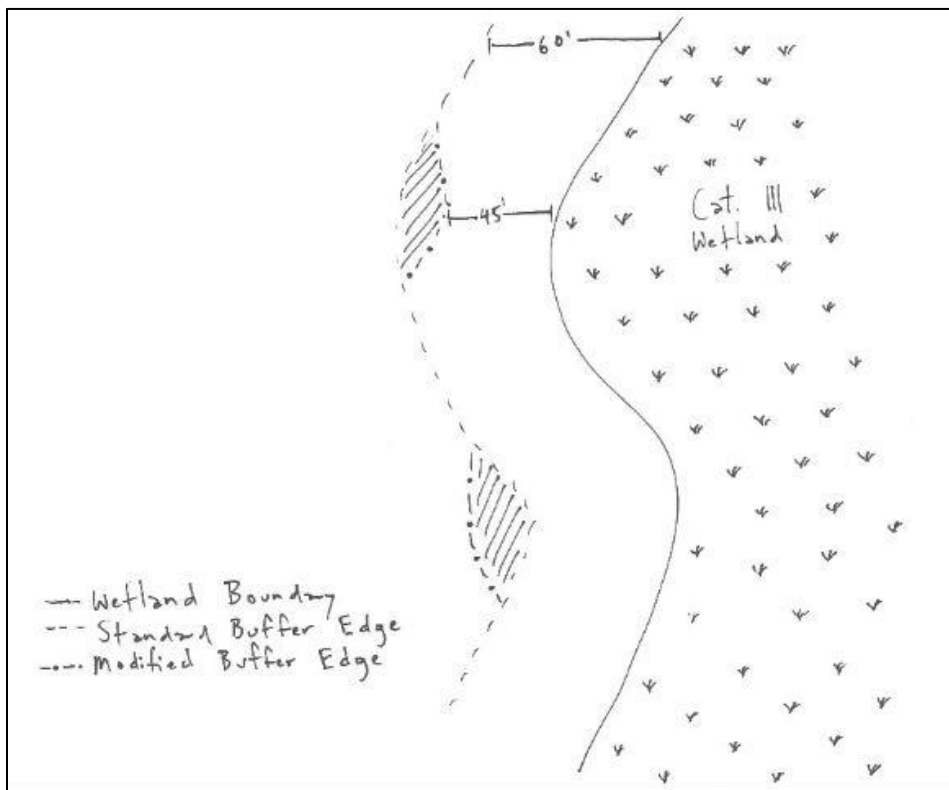


Figure 4. Buffer averaging example figure provided by MICC 19.07.180.C.4.

If buffer averaging would not feasibly allow development, buffer reduction may be allowed (MICC 19.07.180.C.5). Impacts must be minimized and avoidance must be addressed consistent with mitigation sequencing requirements. The proposed buffer width may not be less than 75 percent of the standard buffer width at any point, and compensatory mitigation must be provided for all proposed impacts, resulting in no net loss of ecological function. Mitigation commonly entails invasive plant removal and native plant establishment.

If application of buffer averaging and buffer reduction measures still are unable to create a developable area, the applicant may pursue a reasonable use exception (MICC 19.07.140). The hearing examiner may approve the application for a reasonable use exception provided the development proposal meets all of the following criteria: the application of the critical areas ordinance would deny all reasonable use of the property; there is no other reasonable use with less impact on the critical area; any alteration to the critical area and/or buffer is the minimum necessary; the proposal does not pose a threat to public health, safety, or welfare; the proposal is consistent with the rest of the critical area ordinance and public interest; and the inability of the applicant to derive reasonable use of the property is not the result of actions by the current or prior property owner. A reasonable use application typically enables a property owner to construct one single-family residence and associated driveway access.

## Prior City Code

Per information received from the applicant, because an application to reconstruct the garage was originally submitted to the City prior to the summer 2019 MICC update, the garage reconstruction project is vested to the previously-existing version of the City Code. The definition of “watercourse” has remained unchanged in MICC 19.16 – *Definitions*, and therefore the conclusion of a lack of seasonal stream in the swale near the garage footprint still stands.

Per the pre-existing version of MICC, Stream A would be classified as a Type 1 watercourse (MICC 19.07.070.A). The previous City code requires that Wetland A be rated using the 2004 wetland Rating System for Western Washington (MICC 19.16.010). Under the 2004 rating system, Wetland A would be classified as a Category II wetland. The buffers associated with Wetland A and Stream A are outlined in Table 4, below. Based on approximate measurements taken using the King County iMap measurement tool, it does not appear that these buffers will encumber the garage reconstruction area.

Table 4. Summary of wetland and watercourse rating scores, classification, and standard buffer widths per previously-existing code (MICC 19.07.170 and MICC 19.07.080).

	Water Quality	Hydrologic	Habitat	Total	Category	Standard Buffer Width	Building Setback
Wetland A	16	26	18	60	II	75 ft.	10 ft.
Stream A	-	-	-	-	Type 1	75 ft.	10 ft.

If the footprint of the recently-destroyed shed was located within the buffer of Stream A and/or Wetland A, it is considered a legal nonconforming structure. Per MICC 19.01.050.D.1 (bold emphasis added):

*Any legally nonconforming detached single-family dwelling and/or accessory building or structure that suffers a catastrophic loss shall not lose its legal nonconforming status. Such dwelling or accessory building or structure may be reconstructed regardless of the extent of damage or reconstruction cost, to re-establish the previous legal nonconformity or otherwise, as long as there is no expansion of any existing nonconformity, the reconstruction creates no new nonconformance, and a complete building permit for reconstruction is submitted to the city within 12 months of the date of the loss.*

## State and Federal Regulations

### Federal Agencies

Most wetlands and streams are regulated by the Corps under Section 404 of the Clean Water Act. Any proposed filling or other direct impacts to Waters of the U.S., including wetlands (except isolated wetlands), would require notification and permits from the Corps. Wetland A would not be considered isolated. Unavoidable impacts to jurisdictional wetlands are typically required to be compensated through implementation of an approved mitigation plan. If activities requiring a Corps permits are proposed, a Joint Aquatic Resource Permit Application (JARPA) could be submitted to obtain authorization.

Federally permitted actions that could affect endangered species may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. Compliance with the Endangered Species Act must be demonstrated for activities within jurisdictional wetlands and the 100-year floodplain. Application for Corps

permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology and a cultural resource study in accordance with Section 106 of the National Historic Preservation Act.

### **Washington Department of Ecology (Ecology)**

Similar to the Corps, Ecology, under Section 401 of the Clean Water Act, is charged with reviewing, conditioning, and approving or denying certain federally permitted actions that result in discharges to state waters. However, Ecology review under the Clean Water Act would only become necessary if a Section 404 permit from the Corps was issued. However, Ecology also regulates wetlands, including isolated wetlands, under the Washington Pollution Prevention and Control Act, but only if direct wetland impacts are proposed. Therefore, if filling activities are avoided, authorization from Ecology would not be needed.

If filling is proposed, a JARPA may be also be submitted to Ecology in order to obtain a Section 401 Water Quality Certification and Coastal Zone Management Consistency Determination. Ecology permits are either issued concurrently with the Corps permit or within 90 days following the Corps permit.

In general, neither the Corps nor Ecology regulates wetland and stream buffers, unless direct impacts are proposed. When direct impacts are proposed, mitigated wetlands and streams may be required to employ buffers based on Corps and Ecology joint regulatory guidance.

### **Washington Department of Fish and Wildlife (WDFW)**

Chapter 77.55 of the RCW (the Hydraulic Code) gives WDFW the authority to review, condition, and approve or deny “any construction activity that will use, divert, obstruct, or change the bed or flow of state waters.” This provision includes any in-water work, installation of bridges, docks and other overwater structures and can sometimes include stormwater discharge to state waters. If a project meets regulatory requirements, WDFW will issue a Hydraulic Project Approval (HPA).

Through issuance of an HPA, WDFW can also restrict activities to a particular timeframe. Work is typically restricted to late summer and early fall. However, WDFW has in the past allowed crossings that don’t involve in-stream work to occur at any time during the year.


## **Disclaimer**

The information contained in this letter is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria referenced above. All discussions, conclusions and recommendations reflect the best

professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this 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 black ink that reads "Logan Dougherty". The signature is written in a cursive, flowing style.

Logan Dougherty  
Ecologist

*Enclosures*

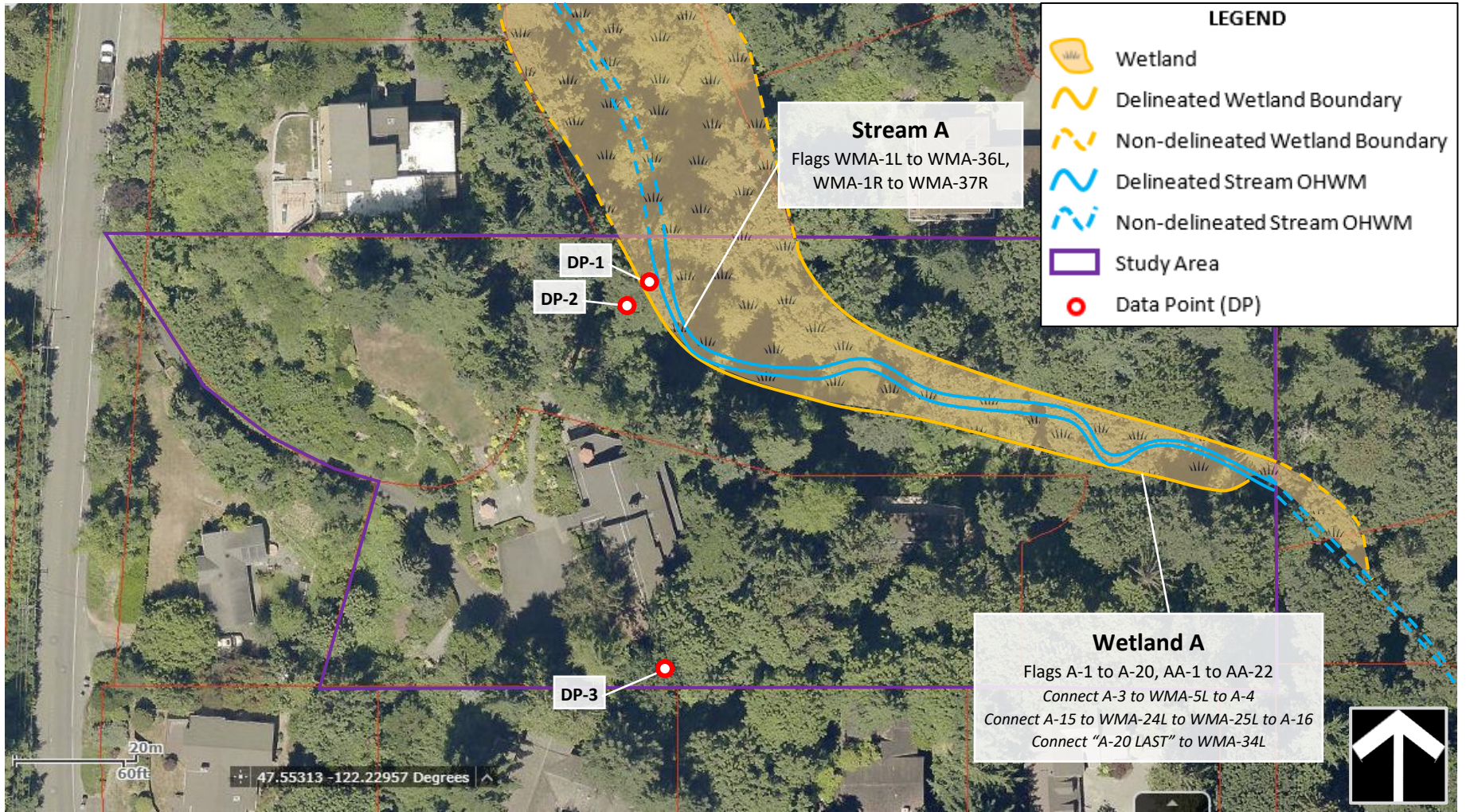
## References

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<https://fortress.wa.gov/ecy/publications/parts/1606001part1.pdf>.
- Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Hruby, T. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.
- Lichvar, R.W. and S. M. McColley. 2008. A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States. ERDC/CRREL TR-14-13. Hanover, NH: U.S. Army Engineer Research and Development Center.
- U.S. 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. J. S. Wakely, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2015. National Engineering Handbook, Part 650 Engineering Field Handbook, Chapter 19 Hydrology Tools for Wetland Identification and Analysis. ed. R. A. Weber. 210-VI-NEH, Amend. 75. Washington, DC.

**Stream & Wetland Delineation Sketch – Nader Property**

Site Address: 5472 W Mercer Way, Mercer Island, WA  
Parcel Number: 2948900051, 2948900050  
Site Visit Date: 11/11/19

Prepared for: Maya & Pierre Nader  
TWC Ref. No.: 191044



**Note:** Field sketch only. Features depicted are approximate and not to scale. Wetland boundary is marked with pink- and black-striped flags. Stream OHWM is marked with blue- and white-striped flags. Data points are marked with yellow- and black-striped flags.

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Project/Site: 5472 W. Mercer Way, Mercer Island; parcel 2948900050 City/County: Mercer Island Sampling date: 11/11/19  
 Applicant/Owner: Maya & Pierre Nader State: WA Sampling Point: DP-1  
 Investigator(s): L. Dougherty, P. Heltzel Section, Township, Range: 24, 24N, 04E  
 Landform (hillslope, terrace, etc): Terrace Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): A Lat: - Long: - Datum: -  
 Soil Map Unit Name: Alderwood and Kitsap soils, very steep NWI classification: None

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 on the site?  Yes  No  
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soils Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <b>Wetland A in-pit.</b>  Climatic conditions considered "wetter than normal" per WETS table methodology.	

**VEGETATION** – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Notes	
<b>Tree Stratum</b> (Plot size: 5-m diameter)					
1. <i>Pseudotsuga menziesii</i> (rooted outside of WL)	40	-	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100</u> (A/B)	
2. _____					
3. _____					
4. _____					
<u>40</u> = Total Cover				<b>Prevalence Index worksheet:</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) _____ Prevalence Index = B/A = _____	
<b>Sapling/Shrub Stratum</b> (Plot size: 3-m diameter)					
1. <i>Corylus cornuta</i> (rooted outside of WL)	70	-	FACU		
2. <i>Oplopanax horridus</i>	10	N	FAC		
3. <i>Rubus armeniacus</i>	15	N	FAC		
4. _____					
5. _____					
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 – Dominance Test is > 50% <input type="checkbox"/> 3 – Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 – Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 – Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Herb Stratum</b> (Plot size: 1-m diameter)					
1. <i>Lysichiton americanus</i>	60	Y	OBL		
2. <i>Polystichum munitum</i> (rooted outside of WL)	25	-	FACU		
3. <i>Urtica dioica</i>	20	N	FAC		
4. <i>Equisetum telmateia</i>	15	N	FACW		
5. <i>Hedera helix</i>	2	N	FACU		
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>122</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<b>Woody Vine Stratum</b> (Plot size: 3-m diameter)					
1. _____					
2. _____					
<u>0</u> = Total Cover					
% Bare Ground in Herb Stratum: <u>0</u>					
Remarks:					

**SOIL**

Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-11	10YR 2/1	95	7.5YR ¾	5	C	PL	Mucky silt loam	
11-18	10Y 3/1	95	7.5YR ¾	5	C	PL	Sandy loam	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.						<sup>2</sup> Loc: PL=Pore Lining, M=Matrix.		
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>					<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>			
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2cm Muck (A10)						
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)						
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)						
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)						
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.						
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)							
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)							
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)							
<b>Restrictive Layer (if present):</b>					<b>Hydric soil present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Type: _____								
Depth (inches): _____								
Remarks:								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> <del>Water-Stained Leaves (except MLRA 1, 2, 4A &amp; 4B) (B9)</del>	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 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 along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (explain in remarks)	<input type="checkbox"/> Frost-Heave Hummocks	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (in): _____	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (in): <u>13 in.</u>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (in): <u>7 in.</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Project/Site: 5472 W. Mercer Way, Mercer Island; parcel 2948900050 City/County: Mercer Island Sampling date: 11/11/19  
 Applicant/Owner: Maya & Pierre Nader State: WA Sampling Point: DP-2  
 Investigator(s): L. Dougherty, P. Heltzel Section, Township, Range: 24, 24N, 04E  
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): None Slope (%): 20  
 Subregion (LRR): A Lat: - Long: - Datum: -  
 Soil Map Unit Name: Alderwood and Kitsap soils, very steep NWI classification: None

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 on the site?  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="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Remarks: <b>Wetland A out-pit.</b>					
Climatic conditions considered "wetter than normal" per WETS table methodology.					

**VEGETATION** – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Notes	
<b>Tree Stratum</b> (Plot size: 5-m diameter)					
1. <i>Pseudotsuga menziesii</i>	30	Y	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>4</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A/B)	
2. _____					
3. _____					
4. _____					
<u>30</u> = Total Cover				<b>Prevalence Index worksheet:</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) _____ Prevalence Index = B/A = _____	
<b>Sapling/Shrub Stratum</b> (Plot size: 3-m diameter)					
1. <i>Corylus cornuta</i>	80	Y	FACU		
2. <i>Oplopanax horridus</i>	5	N	FAC		
3. <i>Rubus armeniacus</i>	5	N	FAC		
4. <i>Vaccinium parvifolium</i>	5	N	FACU		
5. _____					
<u>95</u> = Total Cover					
<b>Herb Stratum</b> (Plot size: 1-m diameter)					
1. <i>Polystichum munitum</i>	40	Y	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 – Dominance Test is > 50% <input type="checkbox"/> 3 – Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 – Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 – Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <i>Pteridium aquilinum</i>	30	Y	FACU		
3. <i>Hedera helix</i>	5	N	FACU		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>75</u> = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: 3-m diameter)					
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
2. _____					
<u>0</u> = Total Cover					
% Bare Ground in Herb Stratum: <u>25</u>					
Remarks:					

**SOIL**

Sampling Point: DP-2

<b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b>									
Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
	Color (moist)	%	Color (moist)	%					
0-12	2.5Y 3/3	100					Silt loam		
12-16	2.5Y 4/4	98	7.5YR 4/6	2	C	M	Silt loam		
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Loc: PL=Pore Lining, M=Matrix.									
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>					<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>				
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy 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)					<input type="checkbox"/> 2cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)				
					<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.				
<b>Restrictive Layer (if present):</b>					<b>Hydric soil present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Type: _____ Depth (inches): _____									
Remarks:									

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>				
Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> <del>Water-Stained Leaves (except MLRA 1, 2, 4A &amp; 4B) (B9)</del> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> ) <input type="checkbox"/> Other (explain in remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2, 4A &amp; 4B</b> ) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> ) <input type="checkbox"/> Frost-Heave Hummocks		
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			Depth (in): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			Depth (in): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (in): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks:    Dry to 16"				

Project/Site: 5472 W. Mercer Way, Mercer Island; parcel 2948900051 City/County: Mercer Island Sampling date: 11/11/19  
 Applicant/Owner: Maya & Pierre Nader State: WA Sampling Point: DP-3  
 Investigator(s): L. Dougherty, P. Heltzel Section, Township, Range: 24, 24N, 04E  
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): Concave Slope (%): 7  
 Subregion (LRR): A Lat: - Long: - Datum: -  
 Soil Map Unit Name: Alderwood and Kitsap soils, very steep NWI classification: None

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 on the site?  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="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <b>Recorded in swale where Mercer Island GIS maps a seasonal stream.</b> Climatic conditions considered "wetter than normal" per WETS table methodology.	

**VEGETATION** – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: 5-m diameter)				
1. <u><i>Acer macrophyllum</i></u>	30	Y	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>4</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A/B)
2. <u><i>Pseudotsuga menziesii</i></u>	15	Y	FACU	
3. _____				
4. _____				
<u>45</u> = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: 3-m diameter)				
1. <u><i>Prunus laurocerasus L.</i></u>	95	Y	NI	<b>Prevalence Index worksheet:</b> Total % Cover of: <u>95</u> Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: (A) _____ (B) _____ Prevalence Index = B/A = _____
2. _____				
3. _____				
4. _____				
5. _____				
<u>95</u> = Total Cover				
<b>Herb Stratum</b> (Plot size: 1-m diameter)				
1. <u><del>HEHE</del><i>Helix hedera</i></u>	20	Y	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 – Dominance Test is > 50% <input type="checkbox"/> 3 – Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 – Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 – Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>20</u> = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: 3-m diameter)				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____				
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum: <u>80</u>				
Remarks:				

**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		Color (moist)	Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%		%	%				
0-3	10YR 3/1	100						Silt loam	
3-16	2.5Y 4/4	100						Loamy sand	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Loc: PL=Pore Lining, M=Matrix.									
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>			<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>						
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy 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)								
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.									
<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____					<b>Hydric soil present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks:									

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> <del>Water-Stained Leaves (except MLRA 1, 2, 4A &amp; 4B) (B9)</del>	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (explain in remarks)	<input type="checkbox"/> Frost-Heave Hummocks	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (in): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Depth (in): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Depth (in): _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:    Dry to 16"			

Wetland name or number: Wetland A

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A

Date of site visit: 11/11/2019

Rated by: L. Dougherty, P. Heltzel Trained by Ecology?  Y  N

Date of training: 10/2018

HGM Class used for rating: Riverine

Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map: Google Earth

## OVERALL WETLAND CATEGORY (based on functions or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 23 - 27
- Category II – Total score = 20 - 22
- Category III – Total score = 16 - 19
- Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	<u>H</u> M L	H <u>M</u> L	
Landscape Potential	<u>H</u> M L	<u>H</u> M L	H M <u>L</u>	
Value	H M <u>L</u>	H M <u>L</u>	<u>H</u> M L	<b>TOTAL</b>
Score Based on Ratings	6	7	6	19

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	<input checked="" type="checkbox"/>

Wetland name or number: Wetland A

## Maps and figures required to answer questions correctly for Western Washington

### Riverine Wetlands

<b>Map of:</b>	<b>To answer questions:</b>	<b>Figure #</b>
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	3
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	2
Map of the contributing basin	R 2.2, R 2.3, R 5.2	4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	6
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	7



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 entire unit usually controlled by tides except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO – Saltwater Tidal Fringe (Estuarine)**

**YES – Freshwater Tidal Fringe**

*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 an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the 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 all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (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**.

NO – go to 5

YES – The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

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 2 years.

Wetland name or number: Wetland A

NO – go to 6

YES – The wetland class is **Riverine**

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

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 the wetland unit being scored.

**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 HGM 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.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number: Wetland A

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**

**Water Quality Functions - Indicators that the site functions to improve water quality**

<b>R 1.0. Does the site have the potential to improve water quality?</b>		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
<input type="checkbox"/> Depressions cover $\geq$ 3/4 area of wetland	points = 8	2
<input type="checkbox"/> Depressions cover > 1/2 area of wetland	points = 4	
<input checked="" type="checkbox"/> Depressions present but cover < 1/2 area of wetland	points = 2	
<input type="checkbox"/> No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, <b>not</b> Cowardin classes)		
<input type="checkbox"/> Trees or shrubs > 2/3 area of the wetland	points = 8	6
<input checked="" type="checkbox"/> Trees or shrubs > 1/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 2/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 1/3 area of the wetland	points = 3	
<input type="checkbox"/> Trees, shrubs, and ungrazed herbaceous < 1/3 area of the wetland	points = 0	
<b>Total for R 1</b>	<b>Add the points in the boxes above</b>	<b>8</b>

**Rating of Site Potential** If score is:  12-16 = H  6-11 = M  0-5 = L

*Record the rating on the first page*

<b>R 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
R 2.1. Is the wetland within an incorporated city or within its UGA?	<input checked="" type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources: <a href="#">Click here to enter text.</a>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for R 2</b>	<b>Add the points in the boxes above</b>	<b>4</b>

**Rating of Landscape Potential** If score is:  3-6 = H  1 or 2 = M  0 = L

*Record the rating on the first page*

<b>R 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer <b>YES</b> if there is a TMDL for the drainage in which the unit is found)	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for R 3</b>	<b>Add the points in the boxes above</b>	<b>0</b>

**Rating of Value** If score is:  2-4 = H  1 = M  0 = L

*Record the rating on the first page*

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**

**Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion**

R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i>	<input type="checkbox"/> If the ratio is more than 20 points = 9 <input checked="" type="checkbox"/> If the ratio is 10-20 points = 6 <input type="checkbox"/> If the ratio is 5-<10 points = 4 <input type="checkbox"/> If the ratio is 1-<5 points = 2 <input type="checkbox"/> If the ratio is < 1 points = 1	6
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt;90% cover at person height. These are NOT Cowardin classes).</i>	<input checked="" type="checkbox"/> Forest or shrub for > 1/3 area OR emergent plants > 2/3 area points = 7 <input type="checkbox"/> Forest or shrub for > 1/10 area OR emergent plants > 1/3 area points = 4 <input type="checkbox"/> Plants do not meet above criteria points = 0	7
Total for R 4	Add the points in the boxes above	13

**Rating of Site Potential** If score is:  12-16 = H  6-11 = M  0-5 = L

Record the rating on the first page

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	<input type="checkbox"/> Yes = 0 <input checked="" type="checkbox"/> No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	<input type="checkbox"/> Yes = 0 <input checked="" type="checkbox"/> No = 1	1
Total for R 5	Add the points in the boxes above	3

**Rating of Landscape Potential** If score is:  3 = H  1 or 2 = M  0 = L

Record the rating on the first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i>	<input type="checkbox"/> The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient points = 1 <input checked="" type="checkbox"/> No flooding problems anywhere downstream points = 0	0
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
Total for R 6	Add the points in the boxes above	0

**Rating of Value** If score is:  2-4 = H  1 = M  0 = L

Record the rating on the first page

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- Aquatic bed 4 structures or more: points = 4
  - Emergent 3 structures: points = 2
  - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
  - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

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 ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland *\*Not 10% of unit*
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

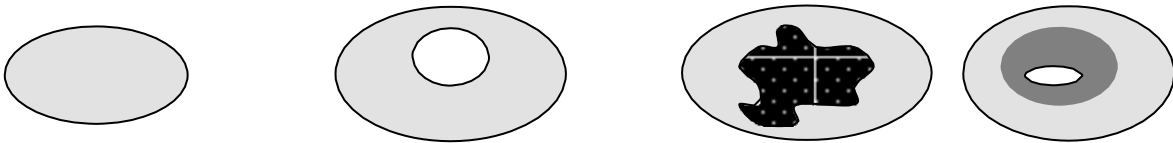
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

- If you counted:
- > 19 species points = 2
  - 5 - 19 species points = 1
  - < 5 species points = 0

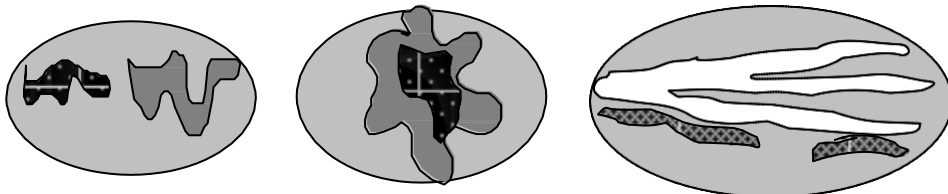
2

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



- None** = 0 points
- Low** = 1 point
- Moderate** = 2 points



All three diagrams in this row are

- HIGH** = 3points

2

Wetland name or number: Wetland A

<p>H 1.5. Special habitat features:          Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li><input checked="" type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland.</li> <li><input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>AND/OR</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m).</li> <li><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) <b>OR</b> signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>).</li> <li><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>).</li> <li><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>).</li> </ul>	3
<p>Total for H 1 <span style="float: right;">Add the points in the boxes above</span></p>	9

**Rating of Site Potential** If score is:  15-18 = H  7-14 = M  0-6 = L *Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 0% + (3.7%/2) = 1.9%</i></p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input checked="" type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 3% + (30%/2) = 18%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	-2
<p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span></p>	-1

**Rating of Landscape Potential** If score is:  4-6 = H  1-3 = M  < 1 = L *Record the rating on the first page*

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</li> <li><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</li> <li><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</li> </ul> <p><input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	2

**Rating of Value** If score is:  2 = H  1 = M  0 = L *Record the rating on the first page*

Wetland name or number: Wetland A

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- 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 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; 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.
- Oregon White Oak:** Woodland 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 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- 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 – see web link above*).
- 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.
- 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 – see web link on previous page*).
- 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.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number: Wetland A

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes –Go to <b>SC 1.1</b> <input checked="" type="checkbox"/> No= <b>Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No - Go to <b>SC 1.2</b>	<b>Cat. I</b>
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No= <b>Category II</b>	<b>Cat. I</b>  <b>Cat. II</b>
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b> <input type="checkbox"/> No – Go to <b>SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <input type="checkbox"/> Yes = <b>Category I</b> <input checked="" type="checkbox"/> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a> <input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <input type="checkbox"/> No = <b>Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No = <b>Not a WHCV</b>	<b>Cat. I</b>
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes – Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No – Go to <b>SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes – Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No = <b>Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No – Go to <b>SC 3.4</b> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No = <b>Is not a bog</b>	<b>Cat. I</b>



<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <p><input type="checkbox"/> <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input checked="" type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes – Go to <b>SC 5.1</b>    <input checked="" type="checkbox"/> No = <b>Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1.</b> Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</p> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes – Go to <b>SC 6.1</b>    <input checked="" type="checkbox"/> No = <b>not an interdunal wetland for rating</b></p> <p><b>SC 6.1.</b> Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No – Go to <b>SC 6.2</b></p> <p><b>SC 6.2.</b> Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = <b>Category II</b>    <input type="checkbox"/> No – Go to <b>SC 6.3</b></p> <p><b>SC 6.3.</b> Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = <b>Category III</b>    <input type="checkbox"/> No = <b>Category IV</b></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p>N/A</p>

Wetland name or number \_\_\_\_\_

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# 2014 Ecology Wetland Rating Form Figures

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# WETLAND A (RIVERINE)

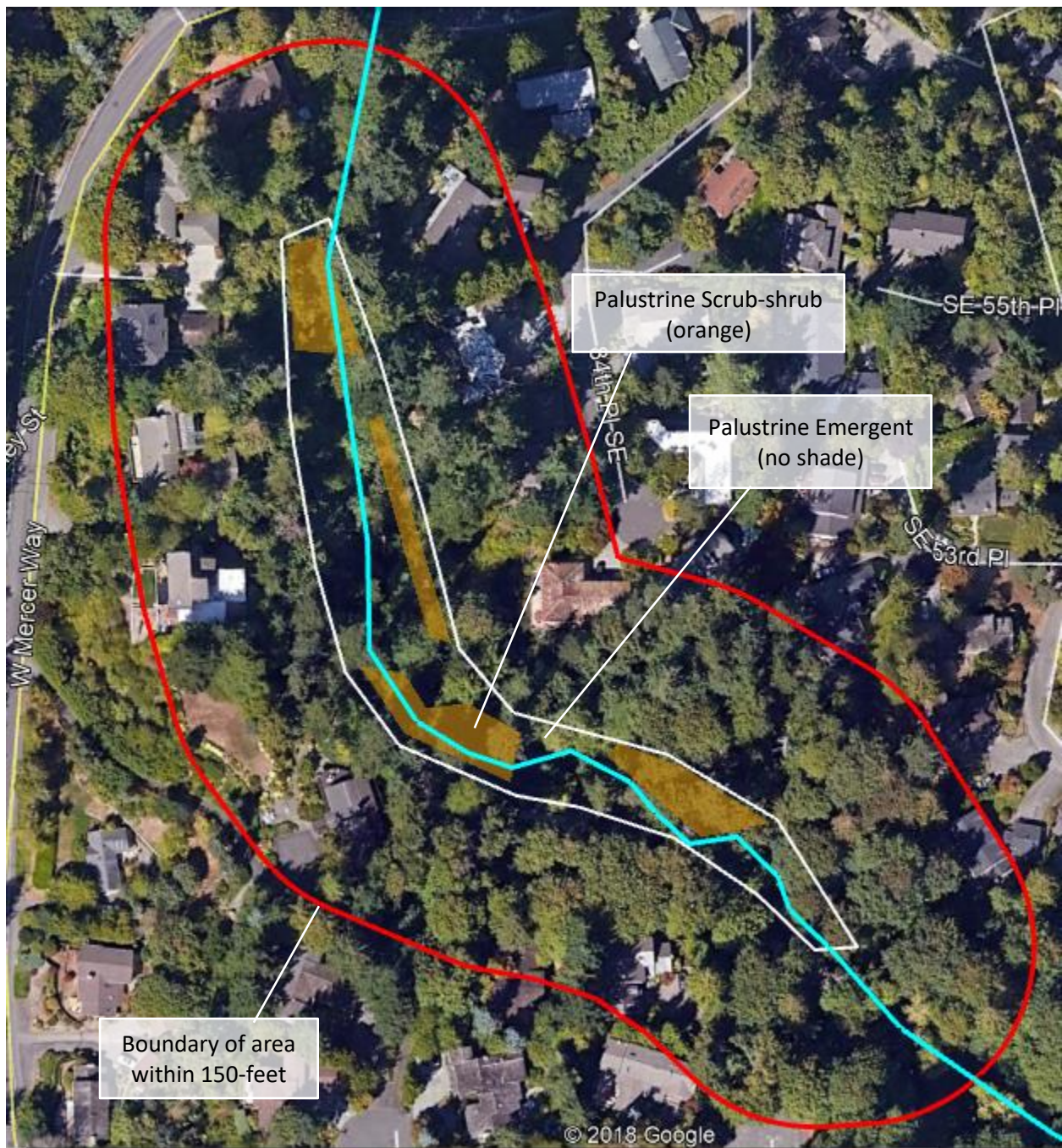


Figure 1. Cowardin plant classes and 150-ft area – H1.1, H1.4, R2.4

Features depicted are not to scale. Sketches are based on available data and best professional judgment.



Figure 2. Hydroperiods, ponded depressions, and wetland-width-to-stream-width ratio – H1.2, R1.1, R4.1

Note: small ponded depressions present throughout unit.

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

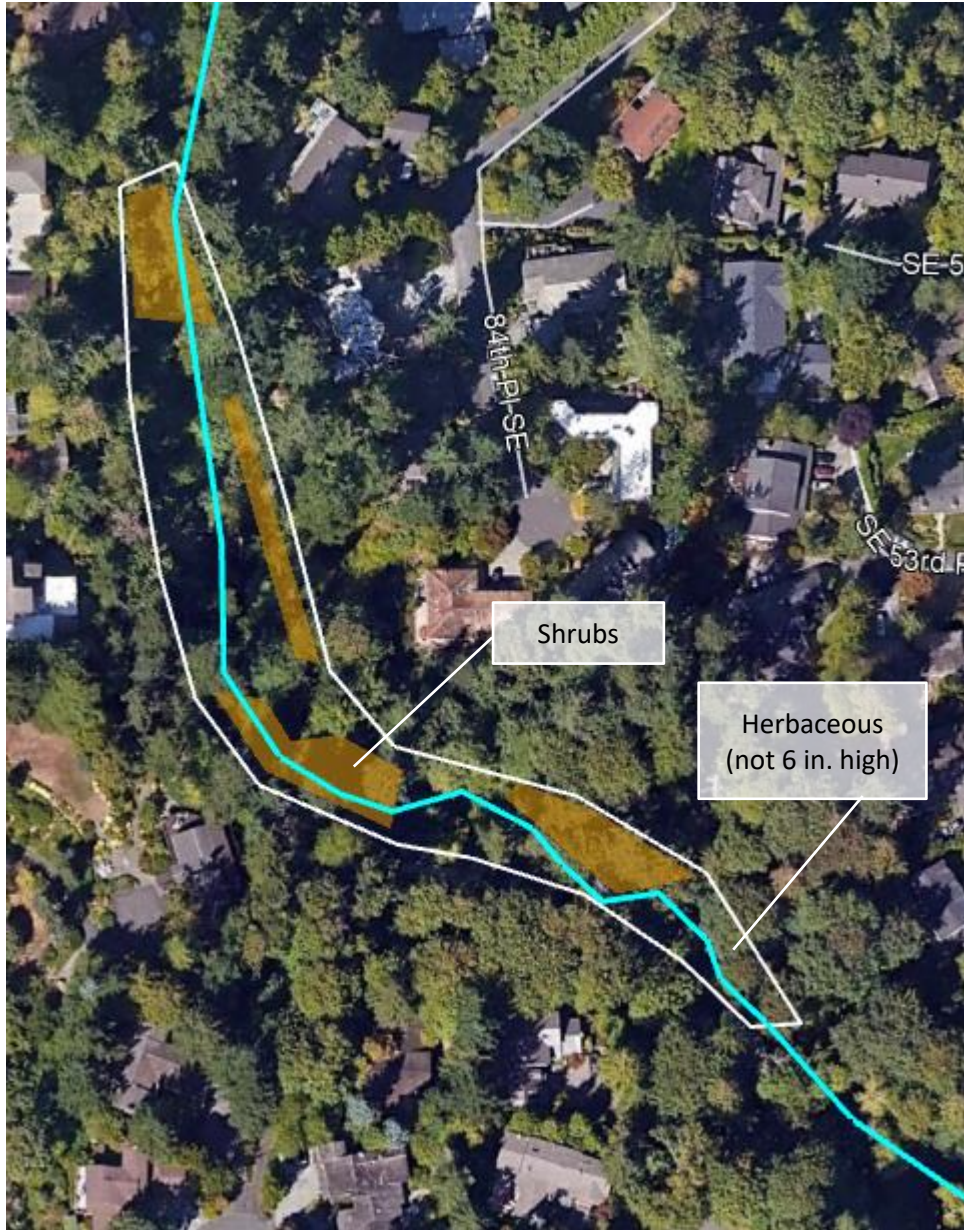


Figure 3. Plant cover of trees, shrubs, and herbaceous plants (not Cowardin) – R1.2, R4.2

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

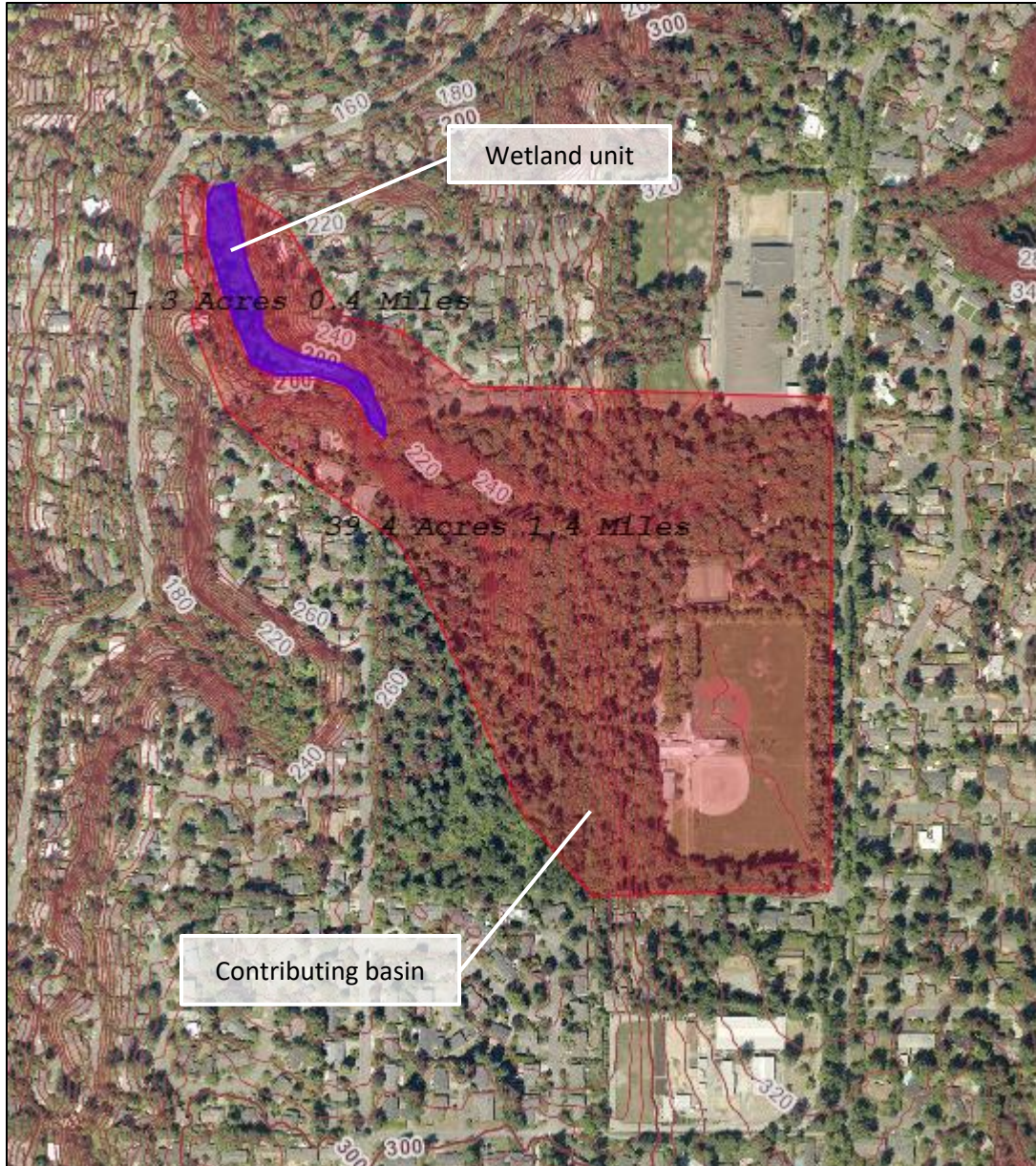


Figure 4. Map of the contributing basin – R2.2, R2.3, R5.2

Features depicted are not to scale. Sketches are based on available data and best professional judgment.





Figure 5. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2.2, H2.3

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

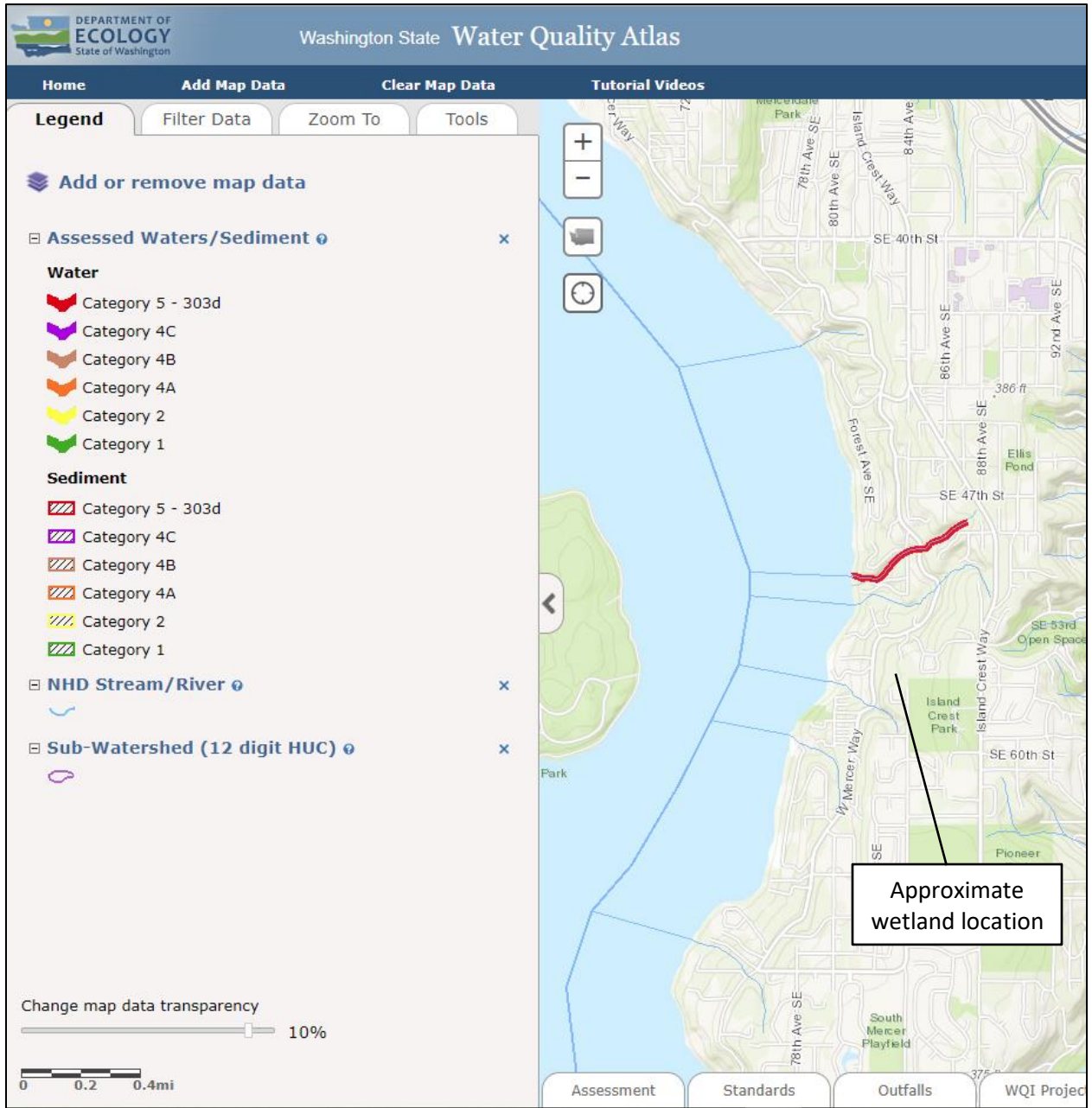


Figure 6. Screen-capture of 303(d) listed waters in basin – R3.1

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

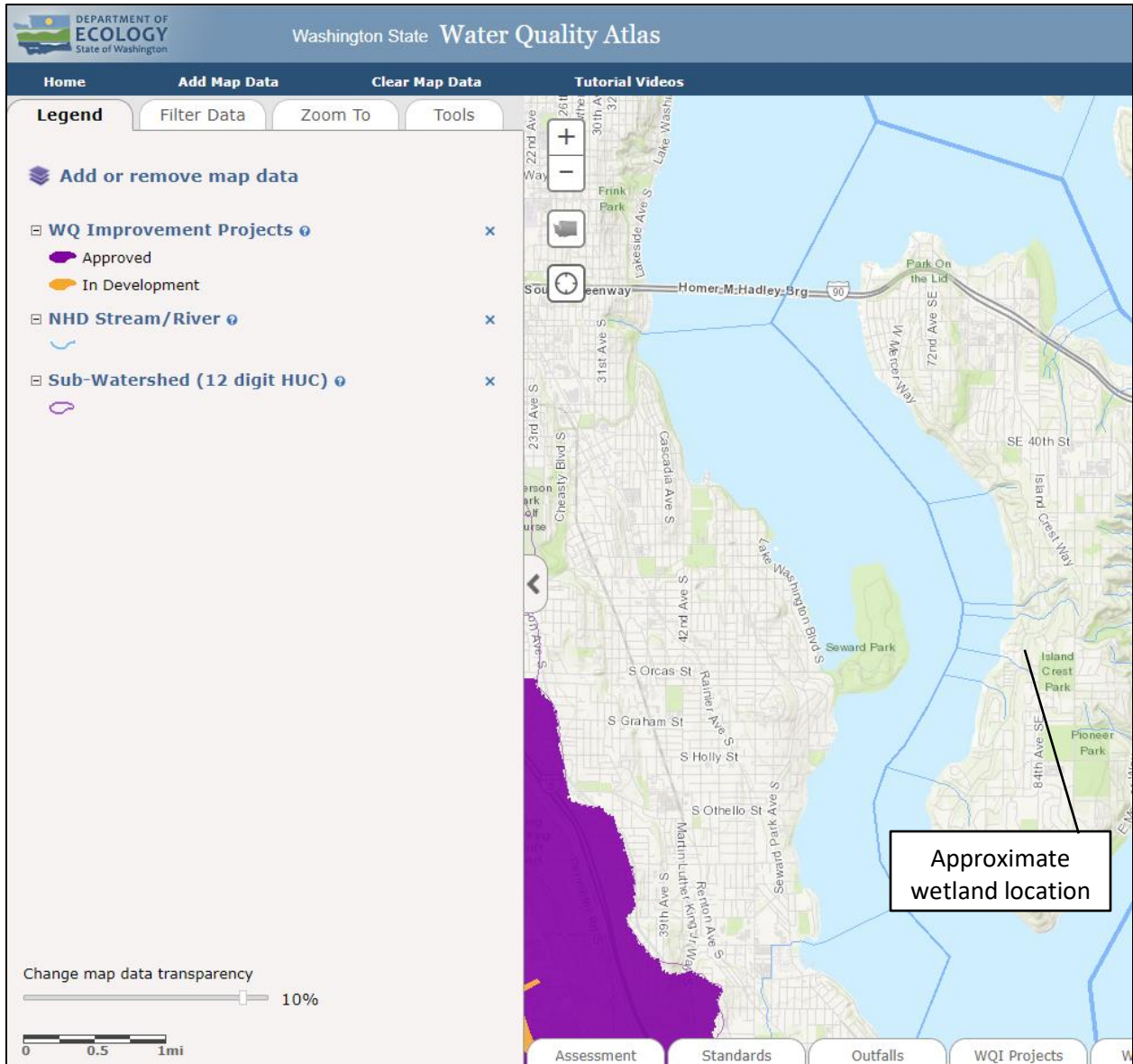


Figure 7. Screen-capture of WQ improvement projects list for sub-basin in which unit is found – R3.2, R3.3

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

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Wetland name or number: **Wetland 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: Mercer Island Nader

Date of Site visit: 12/9/19

Rated by: L. Dougherty, P. Heltzel

Trained by Ecology? Yes  No

Date of Training: 10/2018

SEC: 24 TWNSHP: 24N RNGE: 04E

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 $\geq 70$ Category II = Score 51-69 Category III = Score 30-50 Category IV = Score $< 30$
---

Score for Water Quality Functions	16
Score for Hydrologic Functions	26
Score for Habitat Functions	18
<b>TOTAL score for functions</b>	<b>60</b>

**Category based on SPECIAL CHARACTERISTICS of wetland**

I  II  Does not Apply

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

<b>II</b>
-----------

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine	<input type="checkbox"/>	Depressional	<input type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine	<input checked="" type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe	<input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats	<input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal	<input type="checkbox"/>
Interdunal	<input type="checkbox"/>		
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>

Wetland name or number: **Wetland 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 <b>animal</b> or <b>plant</b> 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 <b>animal</b> 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.

## 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: **Wetland 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: **Wetland A**

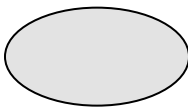
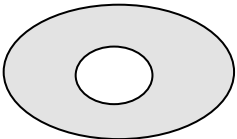
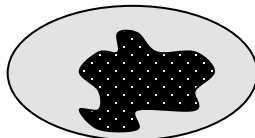
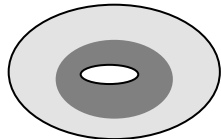
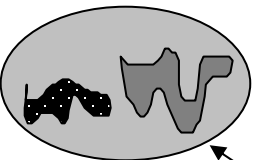
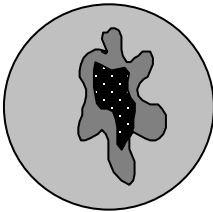
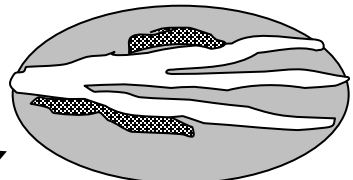
<b>R</b>	<b>Riverine and Freshwater Tidal Fringe Wetlands</b>	<b>Points</b>
<b>WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality</b>		
<b>R</b>	<b>R 1. Does the wetland have the potential to improve water quality?</b>	<i>(see p. 52)</i>
<b>R</b>	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland.....points = 8 Depressions cover > 1/2 area of wetland.....points = 4 Depressions present but cover < 1/2 area of wetland .....points = 2 No depressions present.....points = 0	2
<b>R</b>	R 1.2 Characteristics of the vegetation in the wetland (areas with > 90% cover at person height): Forest or shrub > 2/3 the area of the wetland .....points = 8 Forest or shrub > 1/3 area of the wetland .....points = 6 Ungrazed, emergent plants > 2/3 area of wetland .....points = 6 Ungrazed emergent plants > 1/3 area of wetland .....points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland .....points = 0	6
<b>R</b>	<b>Total for R 1</b> <i>Add the points in the boxes above</i>	<b>8</b>
<b>R</b>	<b>R 2. Does the wetland have the opportunity to improve water quality? (see p. 53)</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality <input type="checkbox"/> Other _____ <b>YES multiplier is 2      NO multiplier is 1</b>	multiplier <u>2</u>
<b>R</b>	<b>TOTAL - Water Quality Functions</b> Multiply the score from R 1 by R 2 <i>Add score to table on p. 1</i>	<b>16</b>

**Comments**

Wetland name or number: **Wetland A**

<b>R Riverine and Freshwater Tidal Fringe Wetlands</b>		
<b>HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion</b>		
	<b>R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	<i>(see p. 54)</i>
<b>R</b>	<p>R 3.1 Characteristics of the overbank storage the wetland provides:  <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).</i>                      If the ratio is more than 20.....points = 9                      If the ratio is between 10 – 20 .....points = 6                      If the ratio is 5- &lt;10 .....points = 4                      If the ratio is 1- &lt;5 .....points = 2                      If the ratio is &lt; 1 .....points = 1</p>	6
<b>R</b>	<p>R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.</i>                      (polygons need to have &gt;90% cover at person height NOT Cowardin classes)                      Forest or shrub for &gt;1/3 area OR Emergent plants &gt; 2/3 area .....points = 7                      Forest or shrub for &gt; 1/10 area OR Emergent plants &gt; 1/3 area .....points = 4                      Vegetation does not meet above criteria.....points = 0</p>	7
<b>R</b>	<b>Total for R 3</b> <i>Add the points in the boxes above</i>	<b>13</b>
<b>R</b>	<p><b>R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 57)</b>                      Answer YES if the wetland is in a location in the watershed where the flood storage, or 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 type="checkbox"/> There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding.</p> <p><input type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding</p> <p><input checked="" 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>  <b>YES multiplier is 2      NO multiplier is 1</b></p>	<p><i>(see p. 57)</i></p> <p>multiplier</p> <p><u>2</u></p>
<b>R</b>	<b>TOTAL - Hydrologic Functions</b> Multiply the score from R 3 by R 4 <i>Add score to table on p. 1</i>	<b>26</b>

<b>These questions apply to wetlands of all HGM classes.</b>	
<b>HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat</b>	
<b>H 1. Does the wetland have the potential to provide habitat for many species?</b>	
<p><b>H 1.1 <u>Vegetation structure</u> (see p. 72)</b>  <i>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.</i></p> <p> <input type="checkbox"/> Aquatic bed  <input checked="" type="checkbox"/> Emergent plants  <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt;30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt;30% cover)  <input 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> <p><i>Add the number of vegetation types that qualify. If you have:</i></p> <p style="text-align: right;">                     4 structures or more.....points = 4                      3 structures .....points = 2                      2 structures .....points = 1                      1 structure.....points = 0                 </p>	1
<p><b>H 1.2. <u>Hydroperiods</u> (see p. 73)</b>  <i>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)</i></p> <p> <input type="checkbox"/> Permanently flooded or inundated                      4 or more types present .....points = 3  <input type="checkbox"/> Seasonally flooded or inundated                      3 types present.....points = 2  <input checked="" type="checkbox"/> Occasionally flooded or inundated                      2 types present .....points = 1  <input checked="" type="checkbox"/> Saturated only                      1 types present.....points = 0  <input 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"/> <b>Lake-fringe wetland = 2 points</b>  <input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b> </p>	1
<p><b>H 1.3. <u>Richness of Plant Species</u> (see p. 75)</b>  <i>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. (different patches of the same species can be combined to meet the size threshold)</i>  <i>You do not have to name the species.</i>  <i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</i>                      If you counted:                      &gt; 19 species.....points = 2                      List species below if you want to:                      5 - 19 species.....points = 1  <span style="margin-left: 100px;">&lt; 5 species .....points = 0</span> </p>	2

<p><b>H 1.4. Interspersion of habitats (see p. 76)</b> 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> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p style="text-align: center; margin-top: 10px;"><b>High = 3 points</b></p> <p><b>NOTE:</b> If you have four or more vegetation types or three vegetation types and open water the rating is always “high”.</p>	2
<p><b>H 1.5. Special Habitat Features: (see p. 77)</b> <i>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.</i></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt;4in. diameter and 6 ft long).</li> <li><input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland</li> <li><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)</li> <li><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt;30degree slope) OR signs of recent beaver activity are present</li> <li><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)</li> <li><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</li> </ul> <p style="text-align: center;"><i>Note: The 20% stated in early printings of the manual on page 78 is an error.</i></p>	3
<p><b>H 1. TOTAL</b> Score - potential for providing habitat <i>Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</i></p>	9

H 2. Does the wetland have the opportunity to provide habitat for many species?	
<p>H 2.1 <u>Buffers</u> (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 &gt;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 &gt; 50% circumference. .... Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. .... Points = 4</p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference ..... Points = 3</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference..... Points = 3</p> <p style="text-align: center;"><b>If buffer does not meet any of the criteria above</b></p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 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 &gt;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 &lt;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 <u>Corridors and Connections</u> (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="padding-left: 40px;">YES = <b>4 points</b> (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? <b>OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</b></p> <p style="padding-left: 40px;">YES = <b>2 points</b> (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  within 3 mi of a large field or pasture (&gt;40 acres) OR  within 1 mi of a lake greater than 20 acres?</p> <p style="padding-left: 40px;">YES = <b>1 point</b>      NO = <b>0 points</b></p>	1

<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 <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a>)</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"> <li><input type="checkbox"/> <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acres).</li> <li><input type="checkbox"/> <b>Biodiversity Areas and Corridors:</b> Areas of habitat that are relatively important to various species of native fish and wildlife (full description in WDFW PHS report p. 152)</li> <li><input type="checkbox"/> <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</li> <li><input type="checkbox"/> <b>Old-growth/Mature forests:</b> (<u>Old-growth west of Cascade crest</u>) 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) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (<u>Mature forests.</u>) 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.</li> <li><input type="checkbox"/> <b>Oregon white Oak:</b> 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.)</li> <li><input checked="" type="checkbox"/> <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</li> <li><input type="checkbox"/> <b>Westside Prairies:</b> 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)</li> <li><input checked="" type="checkbox"/> <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</li> <li><input type="checkbox"/> <b>Nearshore:</b> 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.)</li> <li><input type="checkbox"/> <b>Caves:</b> 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.</li> <li><input type="checkbox"/> <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</li> <li><input type="checkbox"/> <b>Talus:</b> 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.</li> <li><input checked="" type="checkbox"/> <b>Snags and Logs:</b> 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 &gt;51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30cm (12 in) in diameter at the largest end, and &gt; 6m (20 ft) long.  <ul style="list-style-type: none"> <li>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b></li> <li>If wetland has <b>2</b> priority habitats = <b>3 points</b></li> <li>If wetland has <b>1</b> priority habitat = <b>1 point</b></li> <li>No habitats = <b>0 points</b></li> </ul> </li> </ul> <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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Wetland name or number: **Wetland A**

<p><b>H 2.4 Wetland Landscape</b> (<i>choose the <b>one</b> 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).....points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile.....points = 5</p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed.....points = 3</p> <p>The wetland is Lake-fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetland within ½ mile.....points = 3</p> <p>There is at least 1 wetland within ½ mile. ....points = 2</p> <p>There are no wetlands within ½ mile. ....points = 0</p>	3
<p><b>H 2. TOTAL Score</b> - 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><b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1</p>	18

Wetland name or number: **Wetland A**

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

*Please determine if the wetland meets the attributes described below and circle the appropriate Category.*

<b>Wetland Type</b> <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	<b>Category</b>
<p><b>SC 1.0 Estuarine wetlands (see p. 86)</b></p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p>YES = Go to SC 1.1                      NO <input type="checkbox"/></p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-151?</p> <p><input type="checkbox"/> YES = Category I                      <input type="checkbox"/> NO = go to SC 1.2</p>	<p><b>Cat. I</b></p>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> YES = Category I                      <input type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II) The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed wetland.</p> <p><input type="checkbox"/> The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Dual rating I/II</b></p>



<p><b>SC 2.0 Natural Heritage Wetlands</b> (<i>see p. 87</i>)</p> <p>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)  S/T/R information from Appendix D <input checked="" type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/></p> <p>YES <input type="checkbox"/> – contact WNHP/DNR (see p. 79) and go to SC 2.2      NO <input type="checkbox"/>  <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a></p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?  YES = Category I      NO <input type="checkbox"/> Not a Heritage Wetland</p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0 Bogs</b> (<i>see p. 87</i>)</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes, you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> <li>1. Does the wetland have organic soils horizons (i.e. layers of organic soil), either peats or mucks, that compose 16” or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils.)  Yes - go to Q.3      NO - go to Q.2</li> <li>2. Does the wetland have organic soils, either peats or mucks, that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?  Yes - go to Q.3      NO <input type="checkbox"/> is not a bog for purpose of rating</li> <li>3. Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists species in Table 3)?  Yes – Is a bog for purpose of rating      NO - go to Q.4  <i>NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</i></li> <li>4. Is the wetland forested (&gt;30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt;30% coverage of the total shrub/herbaceous cover)?  YES = Category I      NO <input type="checkbox"/> is not a bog for purpose of rating</li> </ol>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Forested Wetlands (see p. 90)</b></p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. <i>Note: The criterion for dbh is based on measurements for upland forests. Two hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</i></p> <p><input type="checkbox"/> Mature forests: (west of the Cascade crest) Stands where the largest trees are 80-200 years old OR have average diameters (dbh) exceeding 21 in (53 cm); 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</p> <p>YES = Category 1    NO <input type="checkbox"/> not a forested wetland with special characteristics</p>	<b>Cat. I</b>
<p><b>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</p> <p>YES – Go to SC 5.1                    NO <input type="checkbox"/> not a wetland in a coastal lagoon</p> <p><b>SC 5.1</b> Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)</p> <p>YES = Category I                    NO = Category II</p>	<b>Cat. I</b>  <b>Cat. II</b>

Wetland name or number: **Wetland A**

<p><b>SC 6.0 Interdunal Wetlands (see p. 93)</b>          Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?          YES – go to SC 6.1                      NO <input type="checkbox"/> not an Interdunal wetland for rating  <i>If you answer yes you will still need to rate the wetland based on its functions.</i>          In practical terms that means the following geographic areas:              – Long Beach Peninsula – lands west of SR 103              – Grayland-Westport – lands west of SR 105              – Ocean Shores-Copalis – lands west of SR 115 and SR 109          SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger?              YES = Category II                      NO – go to SC 6.2          SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?              YES = Category III</p>	<p><b>Cat. II</b></p> <p><b>Cat. III</b></p>
<p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the “highest” rating if wetland falls into several categories, and record on p. 1..</i>          If you answered NO for all types enter “Not Applicable” on p.1.</p>	