

Exhibit C - Critical Areas Report



Sewall Wetland Consulting, Inc.

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Fall City, WA 98024

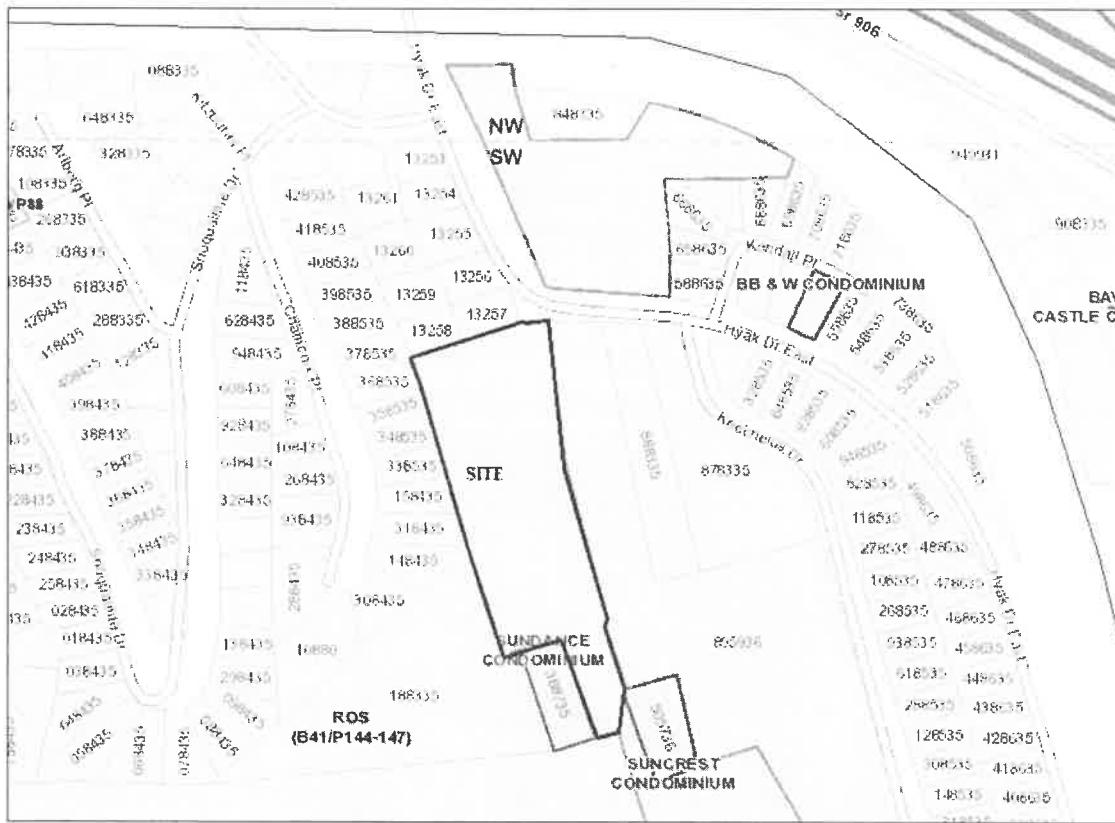
Phone: 253-859-0515

March 15, 2022

East Peak Development LLC
3621 Stone Way N, Suite E
Seattle, WA 98103

RE: Critical Area Report – Tract B of Parcel #961450
Kittitas County, Washington
SWC Job #21-149

This report describes our observations of any jurisdictional wetlands, streams and buffers on the area referred to as Tract B of Parcel #961450, located off Hyak Drive in the Snoqualmie Pass area of unincorporated Kittitas County, Washington.



Above: Vicinity Map of the site.

The site is an irregular shaped parcel 3.9 acres in size and located within SE ¼ of Section 15, Township 22 North, Range 11 East of the W.M.

The site consists of a shrub and forested bench on the west located above an existing gravel parking lot area on the east used by the Summit East Ski Area.



Above: Kittitas Taxisifter aerial photograph of study area.

METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site on June 18, 2021.

The site was reviewed using methodology described in the ***Corps of Engineers Wetlands Delineation Manual*** (Environmental Laboratory, 1987), and the ***Western Mountains, Valleys and Coast region Supplement*** (Version 2.0) dated June 24, 2010, as required by the US Army Corps of Engineers and Kittitas County for this portion of the county. Soil colors were identified using the 1990 Edited and Revised Edition of the Munsell Soil Color Charts (Kollmorgen Instruments Corp. 1990).

The wetland was located with a hand held Garmin gps device. The stream was only approximated. These flags will be surveyed in the future and added to the site plan.

OBSERVATIONS

Existing Site Documentation.

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the Kittitas County Taxsifter website, National Wetland Inventory Map and the NRCS Soil Survey online mapping and Data.

Kittitas County Taxsifter website

The Kittitas County Taxsifter website with wetland and DNR water types listed depicts no wetlands or streams on the site (see aerial photograph page 2 of this report).

National Wetlands Inventory (NWI)

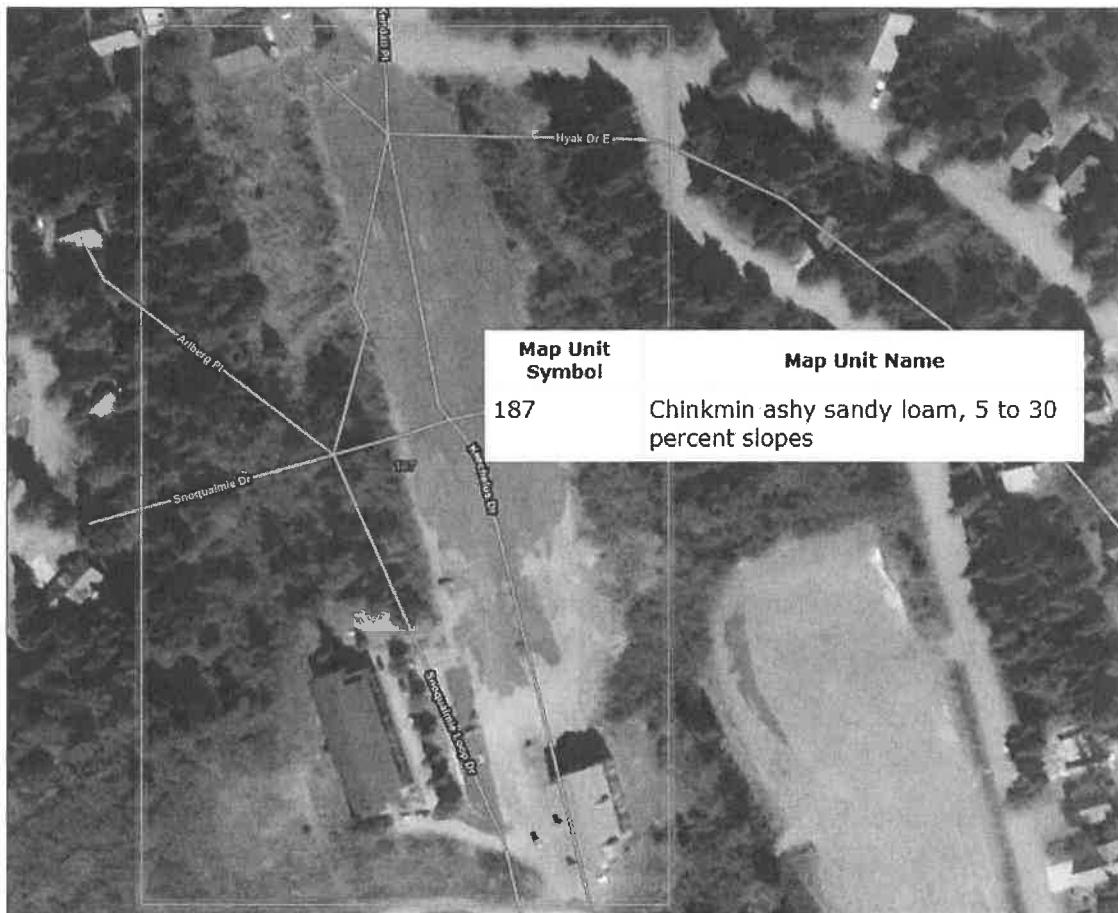
The NWI map depicts no wetlands or streams on or near the site.



Above: NWI map of the area of the site

Soil Survey

According to the NRCS Soil Mapper website, the site is mapped as Chinkmin ashy sandy loams 5%-30% slopes. This soil series is well drained and formed in lateral moraines in volcanic ash and pumice over basal till. Pacific silver fir is the main vegetative cover. This soil series is not considered a "hydric" soils according to the publication *Hydric Soils of the United States* (USDA NTCHS Pub No.1491, 1991).



Above: NRCS soil map of the site.

WADNR Fpars Stream Mapping

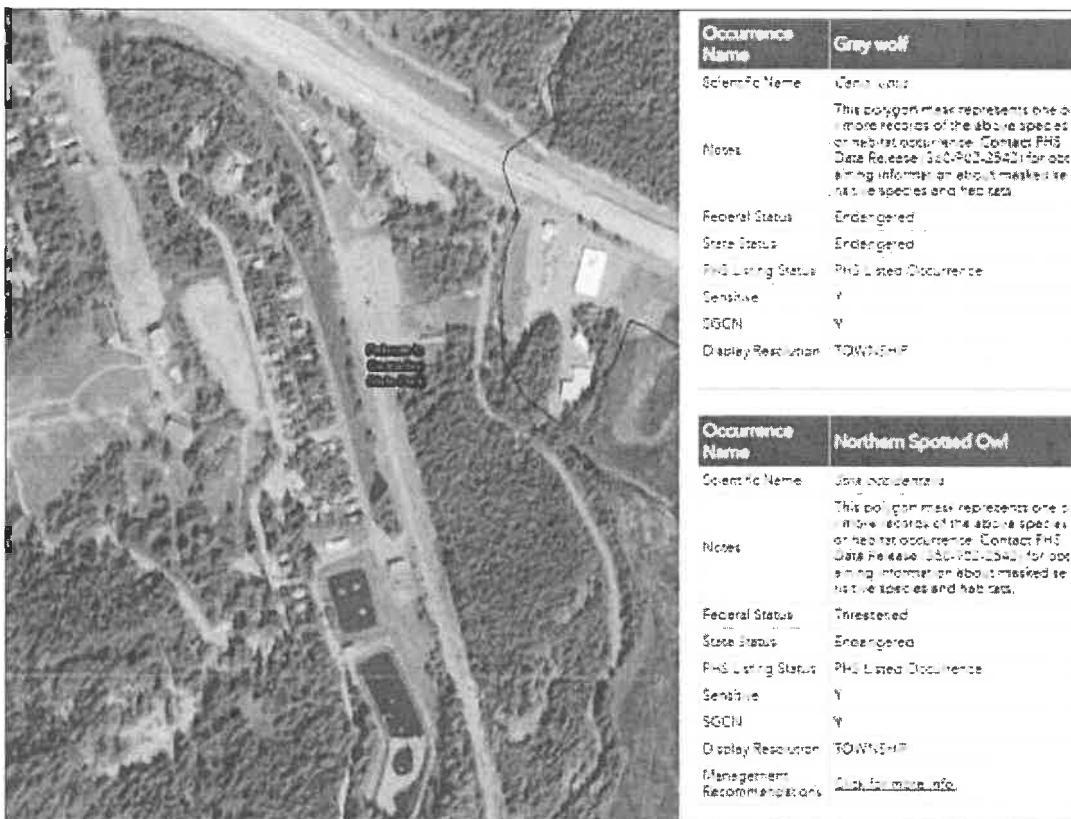
The Washington Department of Natural Resources Fpars stream type mapping website depicts no streams on or near the site.

WDFW Priority Habitats

According to the WDFW Priority Habitats mapping website, site contains wetlands (pink shading) and the entire site is located within the Township where the Northern Spotted Owl and gray wolf are thought to be present. These species are Federally listed as endangered species.



Above: WDNR Fpars stream mapping for the area of the site.



Occurrence Name	Gray wolf
Scientific Name	<i>Canis lupus</i>
Notes	This polygon mask represents one or more records of the above species or their habitat presence. Contact FWS Data Release 310-901-0942 for additional information about masked rare species and hot spots.
Federal Status	Endangered
State Status	Endangered
FWS Listing Status	FWS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP

Occurrence Name	Northern Spotted Owl
Scientific Name	<i>Strix occidentalis</i>
Notes	This polygon mask represents one or more records of the above species or their habitat presence. Contact FWS Data Release 310-901-0942 for additional information about masked rare species and hot spots.
Federal Status	Threatened
State Status	Endangered
FWS Listing Status	FWS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
Management Recommendations	Click for more info

Above: WDFW Priority Habitats mapping of site.

Field observations

As previously described, the site contains a forested and shrub covered bench on the west sitting 8'-12' higher than the gravel parking lot portion on the east. A large portion of the bench on the west has a layer of gravel and debris that has been sprayed by ski area snow blowers clearing the ski area lots in winter. Most of this area has a sparse coverage of immature cottonwood saplings. The western edge grades up into less disturbed forest area of silver fir, mountain hemlock, douglas fir and black cottonwood. Understory species include vine maple, huckleberry, and slide alder.

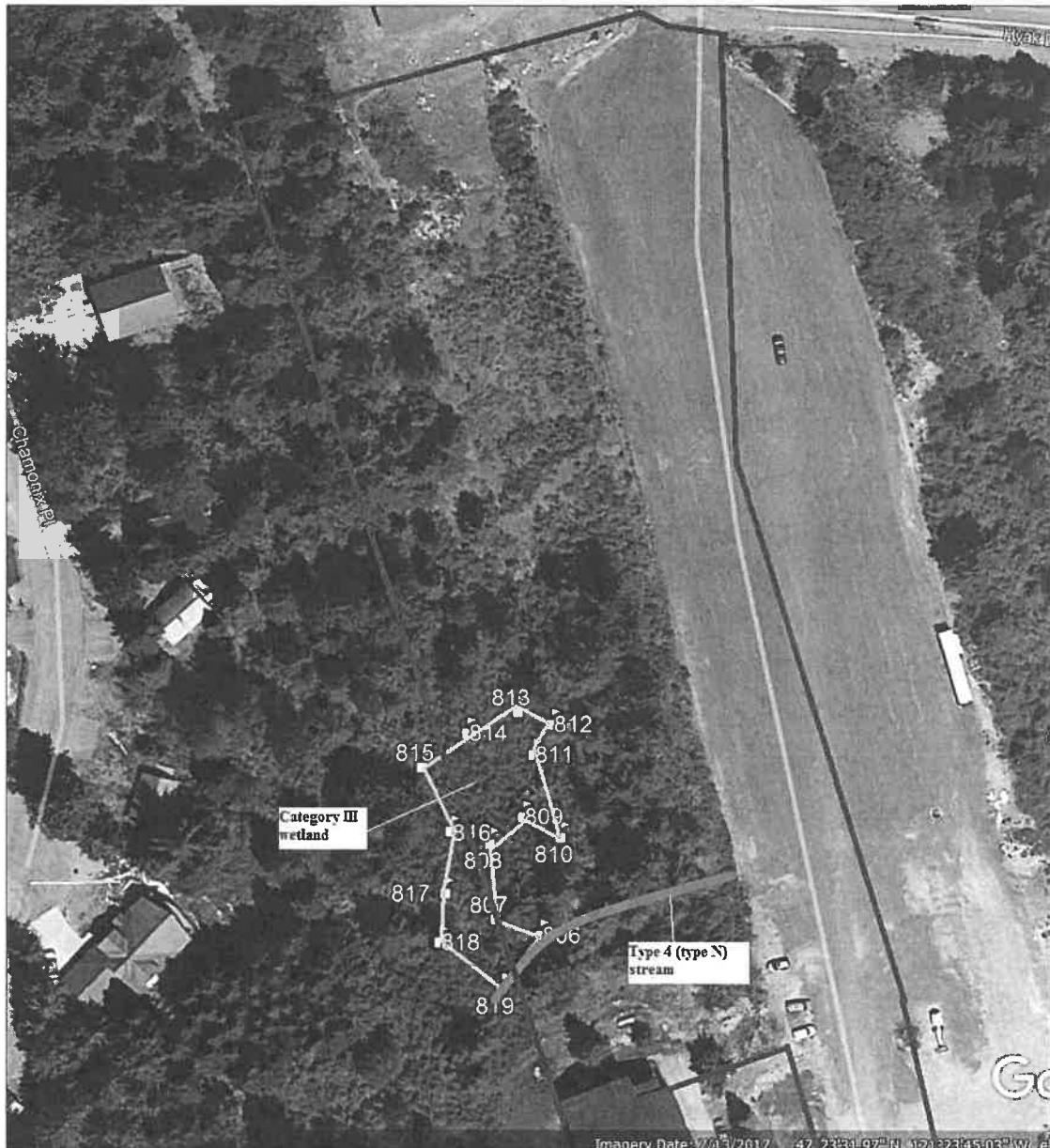
Soil pits excavated within the upland areas throughout the site include dry, gravelly high chroma soils with colors of 10YR 3/3 & 3/4.

Wetlands and Streams

The south end of the site contains a small stream channel as well as an abutting wetland. Below is a description of these features;

Stream A

A small, steeply sloping stream (>16% slope) drains from west to east along the south side of the site. The OHWM of the channel was flagged with blue flags labeled S1-S7 and N1-N7. This channel is a mix of cobble and gravel bottom, and is somewhat ditched, and carries snow melt in the spring as well as some residual drainage in the summer. The stream passes through the site and then steeply slopes in a series of cascades down to a ditch in the parking lot. At this point it passes approximately 350' under the upper parking lot of the Summit East Ski area to a discharge point within a ditch along the west side of the lower parking lot. The channel width varies but is generally around 4' in width between OHWM.



Above: GPS mapping of wetland flag locations

This stream appears to meet the criteria of a Type Ns due to lack of fish use and seasonal flow. According to Kittitas County Municipal Code 17.A.04.030-4, Type Ns streams in the Cascade Ecoregion have a 50' buffer measured from the OHWM of the stream. In addition, a 15' Building Setback line is required from the edge of the buffer.

Table 17A.04.030-4 Standard RMZ Widths
Kittitas County Nonshoreline Rivers, Streams, Lakes and Ponds
(does not include building setback [KCC 17A.01.090.5])

Stream Type	Riparian Management Zone Widths ^{1,2}	
	Cascade Ecoregion (feet)	Columbia Plateau Ecoregion (feet)
Type S (Shoreline)	See the SMP	See the SMP
Type F	150	100
Type Np	100	65
Type Ns	50	40

Wetland A

Wetland A is a scrub-shrub, depressional wetland that was flagged with pink flagging labeled A1-A14 (gps points 806-819). This wetland drains off to the south into the abutting Type 4 stream to the south. The stream does not appear to be flooded by the stream but is a depression that overflows to the stream.

This wetland is vegetated with a mix of sitka willow, slide alder, vine maple, twinberry, skunk cabbage, hedge nettle, and an unidentified sedge.

Soil pits excavated within the wetland revealed a mucky gravelly loam in the wetter areas and a gravelly loam on the drier with redox features and soils saturated to the surface and evidence of shallow standing water in the early spring.

Wetland A was rated using the 2014 *Washington State Department of Ecology Washington State Wetland Rating System for Western Washington*. This wetland was rated as a depressional wetland and scored a total of 18 points with 5 points for habitat indicating a Category III wetland.

According to Kittitas County Municipal Code Chapter 17A.07.030, Category III wetlands have a buffer range of 75'-150' depending upon land use intensity. Assuming a high intensity land use (>1 unit per acre) for the site would result in a 150' buffer from the wetland edge. In addition, a 15' Building Setback line is required from the edge of the buffer.

Table 17A.07.030: Standard Buffer Widths

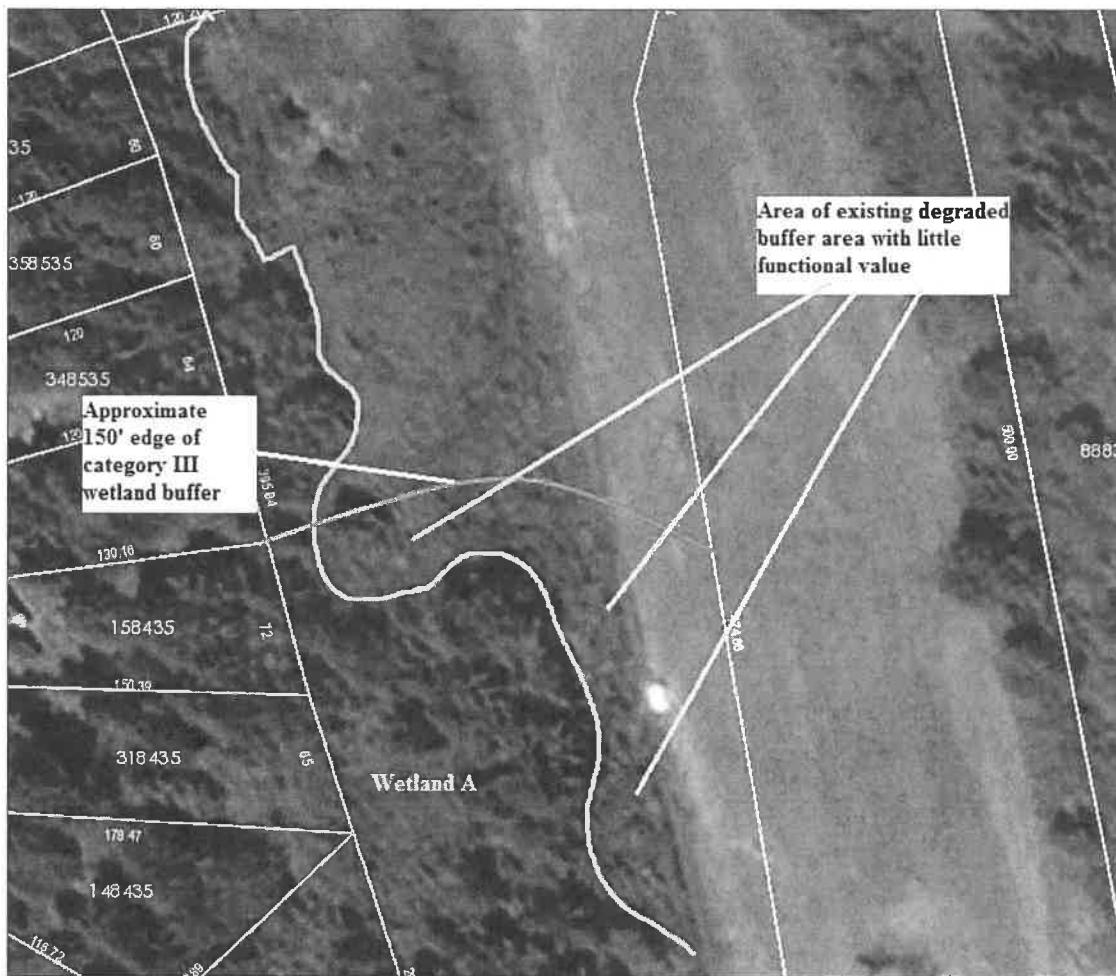
Category of Wetland	Land Use with Low Impact ¹	Land Use with Moderate Impact ²	Land Use with High Impact ³
I	125 ft	190 ft	250 ft
II	100 ft	150 ft	200 ft
III	75 ft	110 ft	150 ft
IV	25 ft	40 ft	50 ft

Proposed Project

The proposed project is the construction of a single condominium structure on the north, and 7 "rowhomes" on the south, as well as associated paved driveway, parking areas and infrastructure.

The stream, wetland and the associated 150' buffer of the Category III wetland encompass more than 50% of the parcel.

Per KCC 17A.07.030.11, buffer averaging is allowed but this would allow a maximum reduction to the buffer of 25%, or to a width of 112.5'. This still leaves a large amount of area which although buffer, is non-functional. The buffer of Wetland A is a highly degraded area of non-functional buffer as it has been historically filled, graded, and is yearly covered with gravel from the parking lot snow clearing operations for Summit East. The buffer area contains scattered cottonwood saplings growing in a gravel/dirt substrate with little functional value to the wetland itself. In addition, the small area of trees within the buffer is also degraded from past grading and gravel deposition as well.



Above: Aerial photograph showing the large area of existing non-functional buffer and upland. This area has a thick layer of gravel that is deposited yearly on the site from the ski area parking lot snow clearing operations. The only vegetation is weedy species and scattered cottonwood saplings.

Proposed Reduced and enhanced buffer

As depicted on the Sewall Wetland Consulting, Inc. "Wetland Buffer Enhancement Plan - Hyak PUD Parcel B" dated 3-8-22", a total of 17,176sf of the existing degraded buffer will be enhanced through removal of trash and gravel, and replanting with a mix of native vegetation. Although this is a reduced buffer, the improvements in the function of the buffer through the removal of the gravel debris and restoration of a native forested buffer plant community will provide greater protection to the wetland, and the associated Type N stream to

the east, than is currently provided by the 150' buffer that is undeveloped.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com .

Sincerely,
Sewall Wetland Consulting, Inc.



Ed Sewall
Senior Wetlands Ecologist PWS #212

Attached: Data sheets
Rating Form & exhibits

REFERENCES

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Kittitas County Municipal Code Chapter 17A

Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1

DRAFT

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

Project Site: Hig. Trout B Sampling Date: C-18-2/
 County: Clay State: _____ Sampling Point: DP #
 Applicant/Owner: 2d Street

Investigator(s):
 Subregion (LRR):
 Soil Map Unit Name:

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

SUMMARY OF FINDINGS - Attach site maps showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u> </u>
Hydric Soil Present?	Yes <u> </u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u> </u>			

Remarks:

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute Dominant Indicator	Dominance Test worksheet:
	Total Cover	1
	% Cover. Species? Status?	Number of Dominant Species That Are OBL, FACN, or FAC:
		(A) <u> </u>
		(B) <u> </u>
		Percent of Dominant Species That Are OBL, FACN, or FAC:
	= Total Cover	<u>✓</u> <u>✓</u> <u>✓</u> (AB)

Sandstone Shrub Stratum (Plot size: _____)

Shrub Stratum (Plot size: _____)	Absolute Dominant Indicator	Dominance Test worksheet:
	Total Cover	30
	% Cover	FRT
		Total % Cover of: <u> </u> Multiple Strata
	OBL species	x 1 = <u> </u>
	FACW species	x 2 = <u> </u>
	FAC species	x 3 = <u> </u>
		= Total Cover <u> </u>
	UPL species	x 4 = <u> </u>
	Column Totals	<u> </u> <u> </u> <u> </u> (A) <u> </u> (B)

Prevalence Index = B/A =

Dominance Test is >50%
 Prevalence Index is >50%

Morphological Adaptations (Provides supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants

Hydrophytic Vegetation Indicators:
 Problematic Hydrophytic Vegetation (Explain)
 Indicators of hydric soil and wetland hydrology must be present; unless disturbed or problematic.

Field Observations:
 Surface Water Present? Yes No Depth (inches):
 Water Table Present? Yes No Depth (inches):
 Saturation Present? Yes No Depth (inches):

Wetland Hydrology Present? Yes No
 Describe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if available:
 Remarks:

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)					
Depth (inches):	Metric:	Color (inches):	% Color (most):	Type:	Texture:
<u>7</u>	<u>mixed</u>	<u>2 mm</u>	<u> </u>	<u>Loam</u>	<u>75-25</u>
Remarks:					
<u>7 1/2</u>					
Location: PL = Pure Living Material. Indicators for Problematic Hydric Soils: Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					
<ul style="list-style-type: none"> — Histosol (A1) — Shallow Matrix (S1) — Black Histic (A3) — Leamy Glayed Matrix (F4) (except MILRA 1) — Hydronutrient Surface (A4) — Depressed Matrix (F2) — Thick Dark Surface (A11) — Radon Dark Surface (F6) — Sandy Mucky Alluvial (S1) — Radon Depressions (F7) 					
Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					
no indistinct					
Hydric Soil Present? Yes <u> </u> No <u> </u>					
Type: _____ Depth (inches): _____ Remarks: _____					
HYDROLOGY					
Wetland Hydrology Indicators: Primary Indicators (minimum of one required, check at least one):					
<ul style="list-style-type: none"> — Water-Stained Leaves (B9) (except MILRA 1, 2, 4, and 4B) — Salt Crust (B11) — Aquatic Invertebrates (B13) — Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres along Living Roots (C3) — Presence of Reduced Iron (C4) — Recent Iron Reduction in Tilled Soils (C9) — Stunted or Stressed Plants (D1) (LRR A) — Other (Explain in Remarks) 					
Secondary Indicators (2 or more required):					
<ul style="list-style-type: none"> — Water-Stained Leaves (B9) (except MILRA 1, 2, 4, and 4B) — Drainage Patterns (B10) — Dry/Searched Water Table (C2) — Saturation Visible on Aerial Imagery (C5) — Shadowed Auroland (D3) — FAC-Neutral Test (D5) — Raised Amy Mounds (D8) (LRR A) — Frost-Heave Hummocks (D7) 					
Field Observations:					
Surface Water Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u>					
Water Table Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u>					
Saturation Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u>					
(includes crevices, vines)					
Describe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if available: Remarks:					
<u>no indistinct</u>					

just north
of wetland

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

Project/Site:	Hole Tract B	City/Country:	Leavenworth, KS	Sampling Date:	6-18-21
Applicant/Owner:		State:	Kansas	Sampling Point:	DP2
Investigator(s):	JD Sand	Section, Township, Range:			
Landform (Hillslope, terrace, etc.):	Slope (%):	Local relief (concave, convex, none):			
Soil Map Unit Name:	Long:	Lat:	NNN classification:		
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _____ No _____	(If no, explain in Remarks.)				
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed?	Are 'Normal Circumstances' present? Yes _____ No _____				
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?	(If needed, explain any answers in Remarks.)				

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

Hydrophytic Vegetation Present?	Yes _____ No _____	In the Sampled Area within a Wetland?	Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____		
Wetland Hydrology Present?	Yes _____ No _____		
Remarks:			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 15m x 15m)	Absolute % Cover	Dominant Indicator Species?	Status	Dominance Test worksheet:
1. Amelanchier alnifolia	30	FAC	✓	Number of Dominant Species That Are OBL, FACW, or FAC: 1
2. Amelanchier alnifolia	30	FAC	✓	Total Number of Dominant Species Across All Strata: 1
3. Amelanchier alnifolia	30	FAC	✓	Percent of Dominant Species That Are OBL, FACW, or FAC: 100%
4. Amelanchier alnifolia	30	FAC	✓	Total Cover = 100%
Shrub/Small Stratum (Plot size: 1m x 1m)				Prevalence Index worksheet:
1. Amelanchier alnifolia	30	FAC	✓	Total % Cover of: 100%
2. Amelanchier alnifolia	30	FAC	✓	OBL species x 1 = 30
3. Amelanchier alnifolia	30	FAC	✓	FACW species x 2 = 60
4. Amelanchier alnifolia	30	FAC	✓	FAC species x 4 = 120
5. Amelanchier alnifolia	30	FAC	✓	UPL species x 5 = 150
6. Amelanchier alnifolia	30	FAC	✓	Column Total: (A) 150
7. Amelanchier alnifolia	30	FAC	✓	Total Cover = 150
8. Amelanchier alnifolia	30	FAC	✓	Prevalence Index = B/A = 1.00
9. Amelanchier alnifolia	30	FAC	✓	Dominance Test is >50%
10. Amelanchier alnifolia	30	FAC	✓	Prevalence Index is >3.0
11. Amelanchier alnifolia	30	FAC	✓	Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet):
Woodland/Vine/Scrub Stratum (Plot size: 1m x 1m)				Wetland Non-Vascular Plants
1. Amelanchier alnifolia	30	FAC	✓	Problematic Hydrophytic Vegetation 1 (Explain)
2. Amelanchier alnifolia	30	FAC	✓	Indication of hydroic and wetland hydrology must be present, unless disturbed or problematic.
Remarks:				

SOIL	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)	Sampling Point: DP2
Depth (inches):	2	Matrix: <u>Soil</u>
Depth (inches):	14	Color (moist): <u>Dark Brown</u>
Texture Type:	74	Roots/Features: <u>None</u>
Animals:		
Indicators for Problematic Hydroic Soils:		
1) (e.g., Creep Concentration, Dilatometer, BHR=Reduced Matrix, CS=Covered or Coated Sand Grains, Location: Pt=Pore Linings, M=Matric, 2) (e.g., Pore Linings, Matric)		
Hydroic Soil Indicators: (Applicable to all LMRs, unless otherwise noted.)		
Hatched (A1) Sandy Radar (SS) 2 cm Mud (A10)		
Hatched (A2) Shredded Matric (S9) Red Painted Matric (T12)		
Black Basic (A3) Laundry Mucky Material (F1) (except MLRA 1) Other (Explain in Remarks)		
Hydrogen Sulfide (A4) Laundry Glayed Matrix (F2)		
Depleted Below Dark Surface (A11) Depleted Matrix (F3)		
Thick Dark Surface (A12) Radar Dark Surface (F6)		
Sandy Mucky Material (S1) Depleted Dark Surface (F7)		
Sandy Glayed Matrix (S4) Radar Depressions (F8)		
Restrictive Layer (if present): _____		
Type:		Hydric Soil Present? Yes _____ No _____
Depth (inches):		Remarks:
HYDROLOGY		
Wetland Hydrology Indicators:		
Estuary Indicators (minimum of one required; check all that apply)		
Water-Stained Leaves (B9) (except MLRA 1A, 4A, and 4B)		
Surface Water (A1) 1, 2, 4A, and 4B)		
High Water Table (A2) Drainage Patterns (B10)		
Saturation (A3) Dry-Season Water Table (C2)		
Water Marks (B1) Saturation Vehicle on Aerial Imagery (C6)		
Sediment Deposits (B2) Oxidized Rootosphere along Living Roots (C3)		
Delt. Deposits (B3) Presence of Reduced Iron (Ca)		
Algal Mats or Crusts (B4) Recent Iron Reduction in Tilled Soils (C8)		
Iron Deposits (B5) Burnt or Bleached Plants (D1) (LSR A)		
Surface Soil Cracks (B6) Inundation Vehicle on Aerial Imagery (B7)		
Inundation Vehicle on Aerial Imagery (B7) Other (Explain in Remarks)		
Sparse Vegetated Concave Surface (B8) Sparse Observations:		
Surface Water Present? Yes _____ No _____ Depth (inches): _____		
Water Table Present? Yes _____ No _____ Depth (inches): _____		
Saturation Present? Yes _____ No _____ Depth (inches): _____		
Remarks:		
Describe Recorded Data (depth gauge, monitoring well, aerial photos, previous inspections), if available:		
<i>No indications</i>		

wetland

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

Project Site:	<u>12 Mile Point B</u>	City/County:	<u>Kittitas</u>	Sampling Date:	<u>C-18-71</u>
Applicant/Downer:		State:	<u>WA</u>	Sampling Point:	<u>D102S</u>
Investigator(s):	<u>EJ Sandell</u>	Section, Township, Range:		Slope (%):	
Landform (Hillock, terrace, etc.):		Lat.:		Long.:	
Soil Map Unit Name:		Local relief (convex, concave, none):		Altitude:	
Are offsite hydrologic conditions on the site typical for this time of year? Yes _____ No _____		NW classification:		(If no, explain in Remarks.)	
Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed?		Are "Normal Circumstances" present? Yes _____ No _____		(If needed, explain any answers in Remarks.)	
Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic?					

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present?	Yes _____	No _____	Is the Sampled Area within a Wetland?		
Hydric Soil Present?	Yes _____	No _____	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No _____			
Remarks:					

VEGETATION - Use scientific names of plants.					
Tree Stratum (Plot size: _____)	Absolute Dominant Indicator:	Dominance Test worksheet:	Dominance Test worksheet:		
1. <u>Salal</u>	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u>	(A)	
2. <u>Ash</u>	_____	Total Number of Dominant Species Across All Strata:	<u>2</u>	(B)	
3. <u>Red Alder</u>	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>1/2</u>	(AB)	
4. <u>Salal</u>	_____	Total Cover	<u>1/2</u>	(AB)	

Soil Stratum (Plot size: _____)					
1. <u>Loamy Silvicultural</u>	2. <u>Loamy Silvicultural</u>	3. <u>Loamy Silvicultural</u>	4. <u>Loamy Silvicultural</u>	5. <u>Loamy Silvicultural</u>	6. <u>Loamy Silvicultural</u>

SOIL						
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)						Sampling Point: _____
Depth (inches)	Matrix:	Rock Features:	Type:	Loc:	Texture:	
12	Color (most):	%				Remarks: _____
12	<u>10A-21-2</u>	<u>2</u>	<u>red</u>	<u>loc</u>	<u>9.5%</u>	
<p>Type: C=Concentration, D=Deposition, R=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRAs unless otherwise noted.) — Sandy Redox (SS) — Sandy Redox (A1) — Red Parent Material (TF2) — Black & Mottic (A2) — Hydrogen Sulfide (A4) — Depressed Below Dark Surface (A11) — Thick Dark Surface (A12) — Sandy Clayey Material (S1) — Sandy Clayey Material (S2) — Shiny Clayey Matrix (F1) — Depressed Dark Surface (F9) — Depressed Dark Surface (F7) — Redox Depressions (F6) Restrictive Layer (if present): Type: _____ Depth (inches): _____ Remarks: _____</p>						Location: PL=Pore Linings, MC=Meltin.
						Indicators for Problematic Hydric Soils: — 2 cm Muck (A10) — Other (Explain in Remarks)
						Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

HYDROLOGY						
Wetland Hydrology Indicators:						Remarks: _____
Primary Indicators (minimum of one required; check all that apply):						
Surficial Water (A1)	<u>White Stained Leaves (BS) (except MLRA 1, 2, 4A, and 4B)</u>					
High Water Table (A2)						
Saturation (A3)	<u>Salt Crust (BS1)</u>					
Water Mats (B1)	<u>Aquatic Invertebrates (BS1)</u>					
Sediment Deposits (B2)	<u>Hydrogen Sulfide Odor (C1)</u>					
Drift Deposits (B3)	<u>Oxidized Rhizosphere along Living Roots (C3)</u>					
Algal Mat or Crust (B4)	<u>Presence of Reduced Iron (C4)</u>					
Iron Deposits (B5)	<u>Recent Iron Reduction in Tilled Soils (C5)</u>					
Surface Soil Cracks (B6)	<u>Raised Am Mounds (D8) (LRR A)</u>					
Inundation Visible on Aerial Imagery (B7)	<u>Fresh-Harve Hummocks (D7)</u>					
Sparsely Vegetated Concave Surface (B8)	<u>Other (Explain in Remarks)</u>					

Field Observations:					
Surface Water Present?	Yes _____	No _____	Depth (inches): _____		
Water Table Present?	Yes _____	No _____	Depth (inches): _____		
Saturation Present? (includes saturation front):	Yes _____	No _____	Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if available:					
Remarks:					

Wetland name or number Wetland A

RATING SUMMARY - Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 2-1-15 - Z

Rated by Sel Seward Trained by Ecology? Yes No Date of training _____

HGM Class used for rating Dystrand 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 _____

OVERALL WETLAND CATEGORY II (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	Hydrologic	Habitat	Score for each function based on three ratings (order of ratings is not important)		
				Water Quality	Hydrologic	Habitat
Site Potential	H	M	L	H	M	L
Landscape Potential	H	M	L	H	M	L
Value	H	M	L	H	M	L
Score Based on Ratings	<u>7</u>	<u>6</u>	<u>5</u>	<u>5</u>	<u>18</u>	

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I
Wetland of High Conservation Value	II
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I
Intertidal	III
None of the above	IV

Wetland name or number Wetland A

Maps and figures required to answer questions correctly for Western Washington

Degradational Wetlands

Map off:	To answer questions:	Figure #
Cowardin plant classes		D 1.3, H 1.1, H 1.4
Hydroperiods		D 1.4, H 1.2
Location of outlet (can be added to map of hydroperiods)		D 1.1, D 4.1
Boundary of area within 150 ft of the wetland (can be added to another figure)		D 2.2, D 5.2
Map of the contributing basin		D 4.3, D 5.3
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
Screen capture of map of 303(d) listed waters in basin (from Ecology website)		D 3.1, D 3.2
Screen capture of list of TnDIs for WRAs in which unit is found (from web)		D 3.3

Riverine Wetlands

Map off:	To answer questions:	Figure #
Cowardin plant classes		H 1.1, H 1.4
Hydroperiods		H 1.2
Ponded depressions		R 1.1
Boundary of area within 150 ft of the wetland (can be added to another figure)		R 2.4
Plant cover of trees, shrubs, and herbaceous plants		R 1.2, R 4.2
Width of unit vs. width of stream (can be added to another figure)		R 4.1
Map of the contributing basin		R 2.2, R 2.3, R 5.2
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
Screen capture of map of 303(d) listed waters in basin (from Ecology website)		R 3.1
Screen capture of list of TnDIs for WRAs in which unit is found (from web)		R 3.2, R 3.3

Lake Fringe Wetlands

Map off:	To answer questions:	Figure #
Cowardin plant classes		I 1.1, I 4.1, H 1.1, H 1.4
Plant cover of trees, shrubs, and herbaceous plants		I 1.2
Boundary of area within 150 ft of the wetland (can be added to another figure)		H 2.1, H 2.2, H 2.3
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
Screen capture of map of 303(d) listed waters in basin (from Ecology website)		I 3.1, I 3.2
Screen capture of list of TnDIs for WRAs in which unit is found (from web)		I 3.3

Map off:	To answer questions:	Figure #
Cowardin plant classes		H 1.1, H 1.4
Hydroperiods		H 1.2
Plant cover of dense trees, shrubs, and herbaceous plants		S 1.3
Plant cover of dense, tall trees, shrubs, and herbaceous plants (can be added to figure above)		S 4.1
Boundary of 150 ft buffer (can be added to another figure)		S 2.1, S 5.1
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
Screen capture of map of 303(d) listed waters in basin (from Ecology website)		S 3.1, S 3.2
Screen capture of list of TnDIs for WRAs in which unit is found (from web)		S 3.3

Wetland name or number _____

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 specific 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)

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

YES - Freshwater Tidal Fringe

If your wetland can be classified as a Freshwater Tidal Fringe, use the form 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 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 2)

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 2)

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 _____

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)

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 classes to use for 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 A

DEPRESSIONAL AND FLATS WETLANDS	
D 1.1. Water Quality Functions	Indicators that the site functions to improve water quality
D 1.0. Does the site have the potential to improve water quality?	
Wetland has an unconfined, or slightly constricted, surface outlet that is permanently flowing stream or ditch, OR highly constricted permanently flowing outlet.	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	
Wetland has an unconfined, or slightly constricted, surface outlet that is a permanently flowing ditch.	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	
D 1.2. The soil 2 in below the surface (or ditch layer) is true daylor or true organic (use NRCS definitions). Yes = 4 No = 0	
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):	
Wetland has persistent, ungrazed plants > 95% of area	
Wetland has persistent, ungrazed plants > ½ of area	
Wetland has persistent, ungrazed plants < ¼ of area	
Wetland has persistent, ungrazed plants < 1/10 of area	
D 1.4. Characteristics of seasonal ponding or inundation:	
This is the area that is ponded for at least 2 months. See description in manual.	
Area seasonally ponded is < ½ total area of wetland	
Area seasonally ponded is > total area of wetland	
Area seasonally ponded is < X total area of wetland	
Total for D 1	7
Rating of Site Potential	If score is: <u>12-16 = H</u> <u>6-11 = M</u> <u>0-5 = L</u>
Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS	
D 2.1. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?	Source _____
Total for D 2	2
Rating of Landscape Potential	If score is: <u>3 = H</u> <u>1 or 2 = M</u> <u>0 = L</u>
Record the rating on the first page	

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?

D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?

Total for D 3

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

Record the rating on the first page

HYDROLOGIC FUNCTIONS	
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing ditch	
Wetland has an unconfined, or slightly constricted, surface outlet that is permanently flowing with no outlet	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or dry, the deepest part.	
Marks of ponding are 3 ft or more above the surface or bottom of outlet	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	
The wetland is a "Headwater" wetland	
Wetland is flat but has small depressions on the surface that trap water	
Marks of ponding less than 0.5 ft (6 in)	
Total for D 4	5
Add the points in the boxes above	
Record the rating on the first page	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.	
The area of the basin is less than 10 times the area of the unit	
The area of the basin is 10 to 100 times the area of the unit	
The area of the basin is more than 100 times the area of the unit	
Entire a wetland is in the Flats class	
Total for D 4	5
Add the points in the boxes above	
Record the rating on the first page	
D 4.4. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0
Total for D 5	1
Rating of Landscape Potential	If score is: <u>3 = H</u> <u>1 or 2 = M</u> <u>0 = L</u>
Record the rating on the first page	
D 6.1. Are the hydrologic functions provided by the site valuable to society?	
The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met:	
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):	
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	
• Surface flooding problems are in a sub-basin farther down-gradient.	
Flooding from groundwater is an issue in the sub-basin.	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____	
There are no problems with flooding downstream of the wetland.	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0
Total for D 6	0
Rating of Value	If score is: <u>2-4 = H</u> <u>1 = M</u> <u>0 = L</u>
Record the rating on the first page	

Wetland name or number

<p>HABITAT FUNCTIONS – Indicators that site functions to provide habitat?</p> <p>H 1.0. Does the site have the potential to provide habitat?</p> <p>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 1% ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent <input type="checkbox"/> Scrub-shrub [areas where shrubs have > 30% cover] <input type="checkbox"/> Forested [areas where trees have > 30% cover] <input checked="" type="checkbox"/> If the unit has a Forested class, check if: <input type="checkbox"/> 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 <p>H 1.2. Hydroperiods</p> <p>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ½ ac to count (see text for descriptions of hydroperiods).</p> <ul style="list-style-type: none"> <input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake Fringe wetland <input type="checkbox"/> Freshwater tidal wetland <p>H 1.3. Richness of plant species</p> <p>Count the number of plant species in the wetland that cover at least 10 ft².</p> <p>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 <i>Eurotia lanata</i>, <i>reed canarygrass</i>, <i>purple loosestrife</i>, <i>Canadian thistle</i></p> <p>If you counted: > 19 species 5 - 19 species < 5 species</p> <p>H 1.4. Interspersion of habitats</p> <p>Decide from the diagrams below whether interspersion among Cowardin plant 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.</p> <p>All three diagrams in this row are HIGH = 3 points</p>	
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Wetland name or number

<p>H 1.5. Special habitat features:</p> <p><input checked="" type="checkbox"/> habitat Features that are present in the wetland. The number of checks is the number of points.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undecked banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 3.3 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) <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 [structures for egg-laying by amphibians] <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) <p>Add the points in the boxes above _____</p>	
<p>Total for H 1 _____</p> <p>Rating of Site Potential If score is: 15-18 = N 7-14 = M 0-6 = L</p> <p>Record the rating on the first page</p>	
<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 only habitat that directly abuts wetland unit).</p> <p>Calculate: points = 1 / % undisturbed habitat + [(% moderate and low intensity land uses)/2] = _____</p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0 <p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: 1 / % undisturbed habitat + [(% moderate and low intensity land uses)/2] = _____</p> <p>Undisturbed habitat > 30% of Polygon points = 3</p> <p>Undisturbed habitat 10-30% and in 1-3 patches points = 2</p> <p>Undisturbed habitat 10-30% and > 3 patches points = 1</p> <p>Undisturbed habitat < 10% of 1 km Polygon points = 0</p> <p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> > 50% of 1 km Polygon is high intensity land use points = (-2) _____ ≤ 50% of 1 km Polygon is high intensity points = 0 _____ <p>Total for H 2 _____</p> <p>Add the points in the boxes above _____</p> <p>Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < 1 = L</p> <p>Record the rating on the first page</p>	
<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? Choose only the highest score that applies to the wetland being rated.</p> <p>Site meets ANY of the following criteria:</p> <ul style="list-style-type: none"> It has 3 or more priority habitats within 100 m (see next page) It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) It is mapped as a location for an individual WDFW priority species It is a Wetland of High Conservation Value as determined by the Department of Natural Resources It has been categorized as an Important habitat site in a local or regional comprehensive plan. In 3 Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m <p>Site does not meet any of the criteria above _____</p> <p>Rating of Value If score is: 2 = H 1 = M 0 = L</p> <p>Record the rating on the first page</p>	

Wetland name or number 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. 1/7 pp. <http://wdfw.wa.gov/publications/20165/xwidw0165.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 Fields:** 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 22 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence numbers of stags, 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).
- **Infrastructure:** 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.

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Criteria for determining type	Category
SC 1.0. Estuarine wetlands	Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt	Yes – Go to SC 1.1. No – Is not an estuarine wetland
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?	— At least 3% of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.	Yes = Category I No – Go to SC 1.2
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	— 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 present, see page 25); — At least 3% of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Yes = Category I No – Category II
SC 2.0. Wetlands of High Conservation Value (WHCV)	SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refer/datasheets/kwhcwetlands.pdf	Yes – Go to SC 2.2. No – Go to SC 2.4. Yes = Category I No = Not a WHCV
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?	SC 3.0. Bogs	Yes = Category I No = Not a WHCV
	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.	
	SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that comprise 50% or more of the first 32 in of the soil profile?	Yes – Go to SC 3.3. No – Go to SC 3.2.
	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 oil, lakes, or ponds?	Yes – Go to SC 3.3. No = is not a bog
	SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in Table 4?	Yes = is a Category I bog No – Go to SC 3.4.
	SC 3.4. Are you 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.	Yes = is a Category I bog No – Go to SC 3.4.
	SC 3.5. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, larchpole 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?	Yes = is a Category I bog No = is not a bog

Wetland name or number A

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate the wetland based on its functions.</p> <ul style="list-style-type: none"> — 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/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. — Mature forests (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>Yes = Category I No = Not a forested wetland for this section</p>
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbars, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to demonstrate refresher memory) 	<p>Cat. I Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p>
<p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no clearing, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least 2% of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than $\frac{1}{10}$ ac (4350 ft²) 	<p>Cat. II Yes = Category I No = Category II</p>
<p>SC 6.0. Intertidal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions.</p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> — 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 	<p>Cat. I Yes – Go to SC 6.1 No = not an intertidal wetland for rating</p>

<p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H, H, M or H, H, M for the three aspects of function)?</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p>SC 6.3. 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>Yes = Category I No – Go to SC 6.2</p> <p>Yes = Category II No – Go to SC 6.3</p> <p>Yes = Category III No = Category IV</p>
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><i>No</i></p>

Google Earth Pro

File Edit View Tools Add Help

▼ Search

Hyak, Snoqualmie Pass, WA
37° 27' 55" N 120° 42' 27" W

Get Directions History

Hyak

Primary Database

- Announcements
- Photos
- 3D Buildings
- Weather
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain

Ruler

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length: 159.77 Feet

Ground Length: 151.10

Heading: 359.62 degrees

Mouse Navigation Save Clear

1945

1.17 PM 17/07/2021

1.17 PM 17/07/2021

Google Earth

[Assessment of state waters 303\(c\)](#) [Water Quality Atlas - Map](#)

[app.osecology.wa.gov/waterqualityatlas/wqa/map?CustomMap=y&BBBox=-1433861.6,5395963,-12563831.6503994&RT=08&Layers=27&Filters=y,n,n,n,n,n,n,y](#)

Water Quality Atlas Map

DEPARTMENT OF ECOLOGY State of Washington

Legend

- Basic
- Drawing
- Other

Tools

- Filter
- Zoom
- Tools
- Home
- Add/Remove Map Data

Bing Imagery

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Mount Rainier

Snoqualmie Pass

State Route 90b

Deavy Creek

8,235.03 ft.

8,235.03 ft.

Shuksan Peak

Usage:
Click on map to add measure points. Double-click to finish.

Unit: **Foot**

Distance: **8,235.03 ft**

New measurement

Powered by Esri

Zoom to selection **Table to CSV**

Assessed Water/Sediment **Filter Applied** **Clear filters**

Find	Listing ID	Assessment Unit	Category	Medium	Parameter
#	65746	170200011202_01_01	5	Water	Dissolved Oxygen
#	11253	170200030223_01_01	5	Water	Temperature
#	42784	170200030223_01_01	5	Water	Dissolved Oxygen

Show 5 entries Showing 1 to 5 of 4,548 entries

Details

View	View	View
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First **Previous** **Next** **Last**

1:52 PM 1/20/2021

Priority Habitats and Species: M: X PHS on the Web

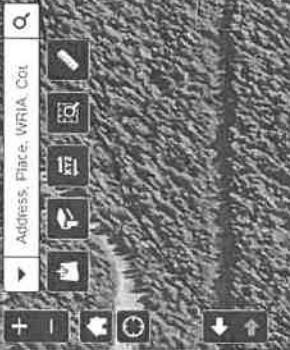
Address, Place, WHIA, CoC



Quick Start Guide

User Guide | Feedback

PHS on the Web



PHS Identity

Buffer Options:
Distance: Unit:
[] Feet
Clear

Generate Report

Occurrence Name	Gray wolf
Scientific Name	<i>Canis lupus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (340) 902-2543 for obtaining information about mask(s), native species and habitats.
Federal Status	Endangered
State Status	Endangered
PHS Listing Status	P HS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP

Occurrence Name	Northern Spotted Owl
Scientific Name	<i>Strix occidentalis</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (340) 902-2543 for obtaining information about mask(s), native species and habitats.
Federal Status	Threatened
State Status	Endangered
PHS Listing Status	P HS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
Management Recommendations	Click for more info.

Map

W

E

N

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Layer

1:38 PM

7/7/2021

