

## Sewall Wetland Consulting, Inc.

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Phone: 253-859-0515

September 20, 2021

Marty Robinett  
Robinett Brothers, LLC  
2825 Colby Avenue, Suite 304  
Everett, Washington 98201

RE: Parcel #31051900400900 & a portion of #31051900401100 –  
Critical Area Report  
City of Marysville, Washington  
SWC Job #21-152

This report describes our observations of any jurisdictional wetlands, streams or buffers on or within 200' of Parcel #31051900400900 and a portion of #31051900401100 located at 1125 & 1507 172<sup>nd</sup> Street NE in the City of Marysville, Washington (the "site").



*Above: Vicinity Map*

The 29.76 acre site is located in the SE ¼ of Section 29, Township 31 North, Range 5 east of the W.W.M.

The site is an irregular shaped and contains active agricultural fields as well as several single family homes, barns, several small outbuildings and associated gravel driveways and landscaped area. Some disturbed douglas fir dominated forest is also present on the site containing an informal atv type road track throughout.



*Above: Snohomish County Parcel Map of the site.*

## **METHODOLOGY**

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site between February and May 30 of 2019 and on July 28, 2021. The site had also been reviewed in the past prior to incorporation into Marysville in 2005.

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.

Given the agricultural use and existing drainage modifications that exists (drainage ditches tiles ect) in the western side of the site where inventoried wetlands were mapped, hydrology monitoring in the early growing season was used to verify if wetland hydrology exists on this agricultural field.

The presence of wetland hydrology is the driving force behind wetland presence, without wetland hydrology, an area does not meet wetland criteria. Therefore, only areas on the site that contain all three parameters during the early growing season meet the definition of a wetland. Areas that do not have hydrology do not meet wetland criteria and are considered upland.

### *Site Hydrology Monitoring Methods*

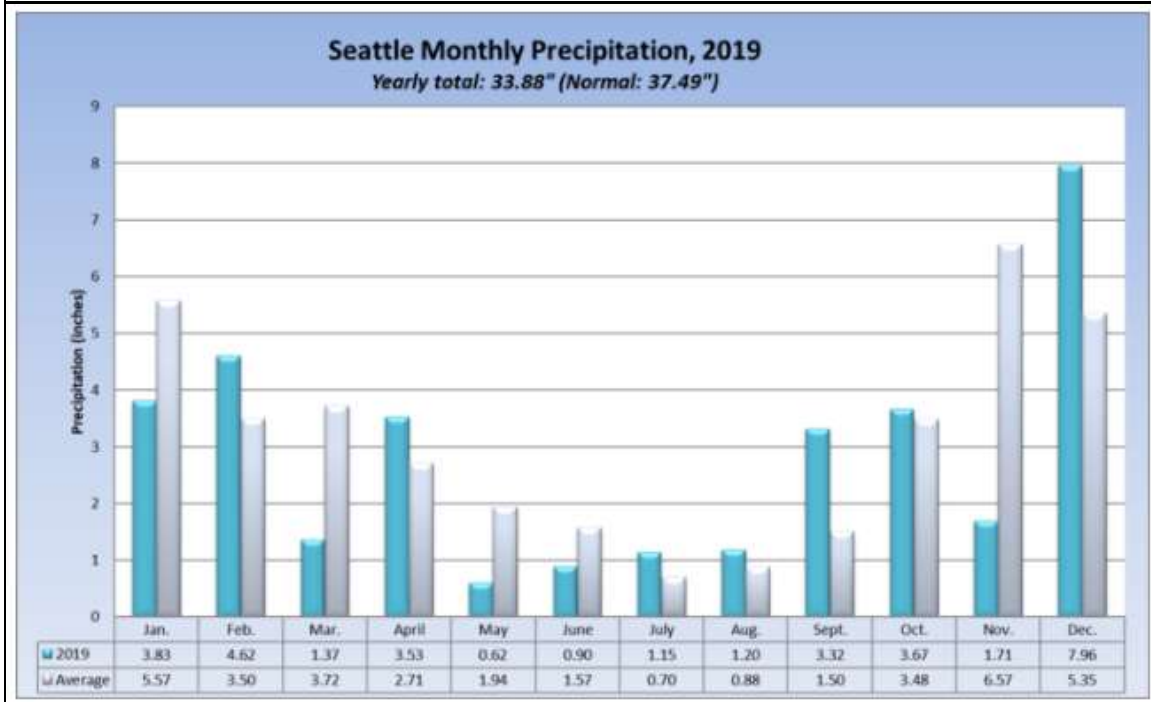
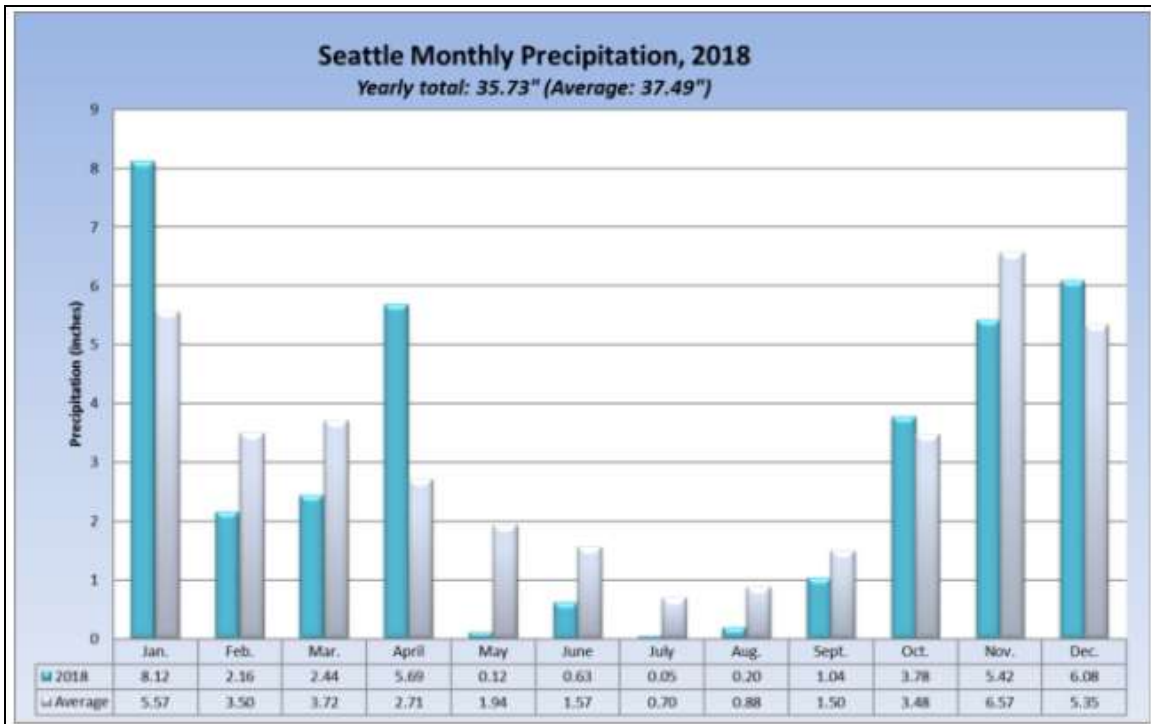
A total of 16 data points (soil pits) were sampled to determine if wetland vegetation, soils and hydrology was present on the site within 12” of the soil surface.



*Above: Data point locations on the site*

The site was visited between February 28th and May 25 of 2019 to collect hydrology data. Site visits were also conducted in April and July of 2021 to confirm nothing had changed since the 2019 hydrology monitoring.





Rainfall in the region for the water year through the growing season starting in October 2018 and ending in May 2019 was 29.29", which was 90% of a normal rainfall of 32.84". However, this small amount of

difference was not enough to invalidate our hydrology monitoring results, and given the drier years we have been having over the last decade, may be closer to normal at this point in time.

At each data point soil pit was excavated -18" deep. At each pit observations of the level of standing water and/or soil saturation (if any) were recorded through the monitoring period. Only the data point within Wetland A was found to contain wetland hydrology long enough to be called a wetland.

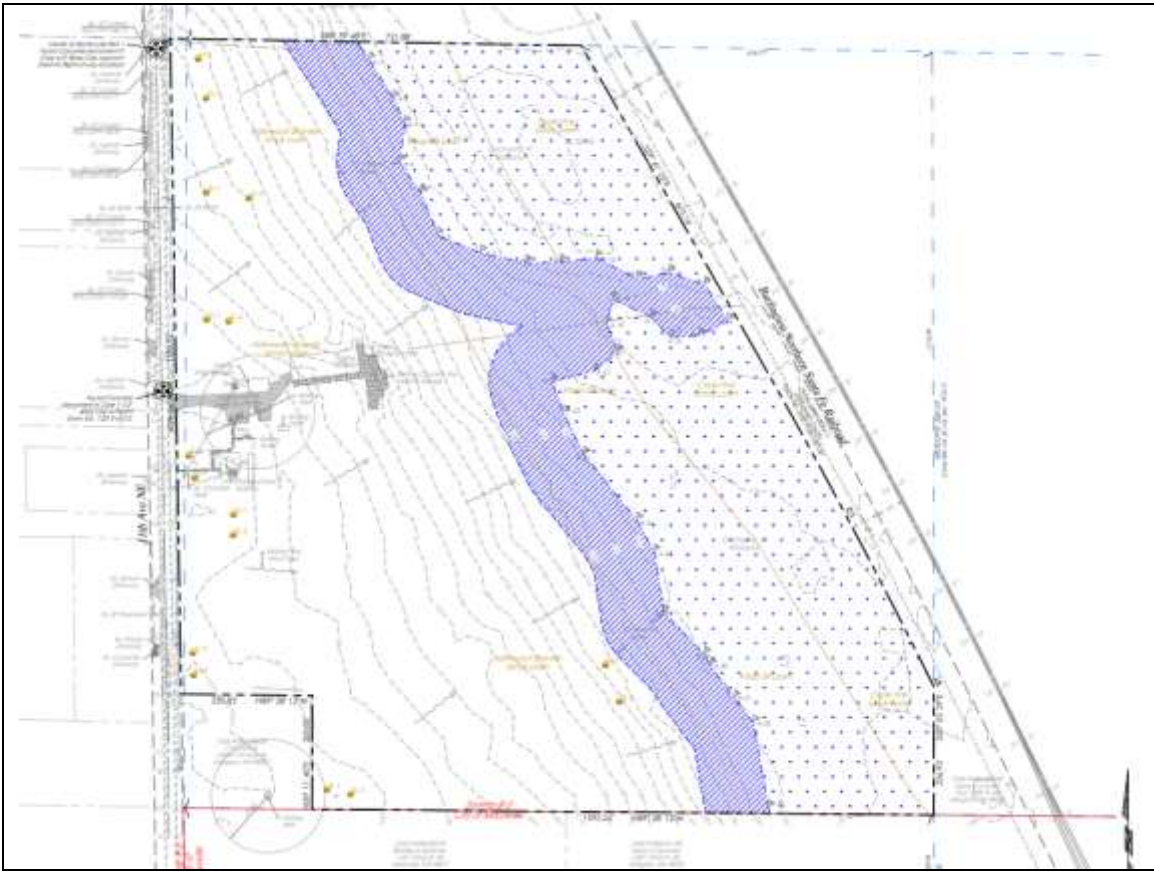
## **OBSERVATIONS**

### ***Existing Site Documentation.***

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included previous studies of the site in 2005 as well as a study of the site to the north of the eastern side of the site, the City of Marysville Critical Areas map, National Wetland Inventory Map, the NRCS Soil Survey online mapping and Data, WADNR Fpars stream mapping and the WDFW Priority Habitats mapping website.

### ***Centered Ventures Study of Parcel#31051900401600***

Sewall wetland Consulting conducted a study of Parcel#31051900401600 in October of 2020. This parcel lies immediately north of the site in unincorporated Snohomish County. A single Category III wetland was identified on the eastern side of the site. The hydrology of this area was not confirmed at that time as it was conducted in the dry season.



*Above: Wetland Map of Category III wetland on Parcel#31051900401600 located immediately north of the site.*

The pasture wetland ended at the site at an east-west ditch which drained towards the railroad tracks to the east. Again, wetland hydrology was not confirmed for this study and areas with wetland grasses and soils were assumed to be wetland.

### ***Snohomish County Mapping***

The Snohomish County PDS mapping of the site with wetland and stream layers activated depicts a large wetland to the east of the site in the area shown on the Centered Ventures site, as well as a wetland in the center of the western pasture.



*Above: Snohomish County PDS wetland and stream mapping of the area of the site.*

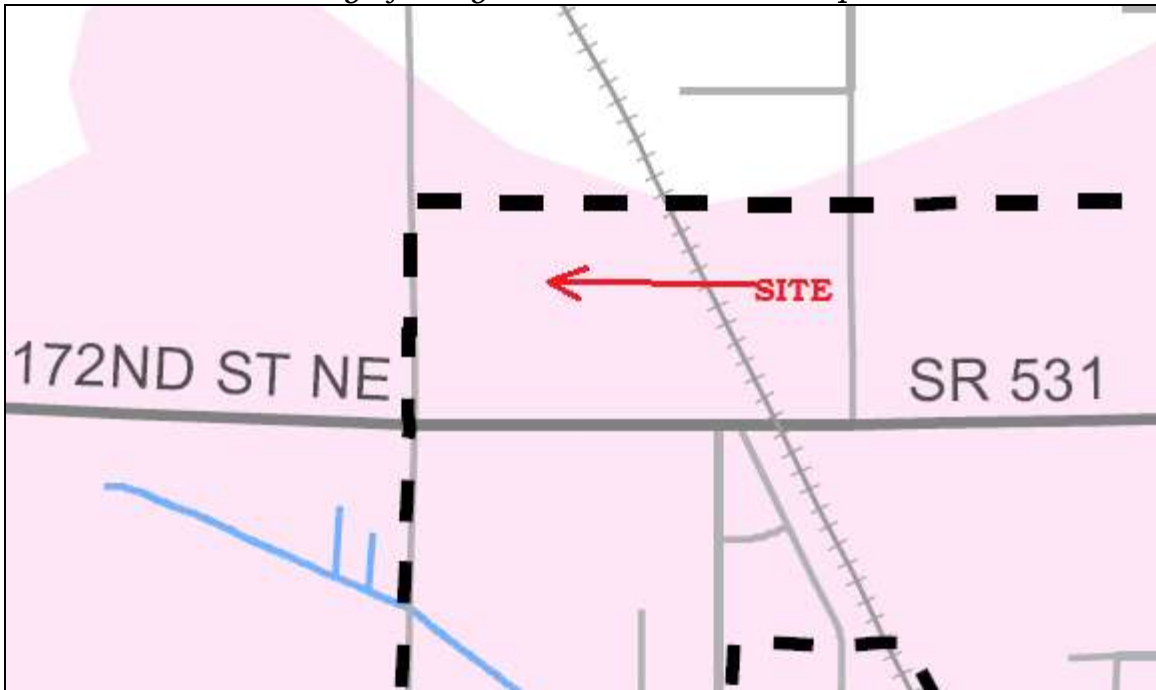
### **City of Marysville Critical Areas Map**

According to the City of Marysville Critical Areas Maps, there are no wetlands or streams on the site





*City of Marysville Critical Areas Map*



*Above: City of Marysville Stream mapping.*

## National Wetlands Inventory (NWI)

The NWI map depicts the same wetlands as shown on the Snohomish County PDS mapping, and in fact the County mapping is a carry-over from the NWI maps. These inventory maps were not field verified and are just an aerial photograph interpretation of the area.



*Above: NWI Map of the area of the site.*

## Soil Survey

According to the NRCS Soil Mapper website, the majority of the site is mapped as moderately well-drained Alderwood gravelly sandy loam. The

eastern side of the site is mapped as Kitsap silt loam. Neither of these soils are considered hydric or wetland soils.



*Above: NRCS Soil map of the study area.*

### **WADNR Fpars**

The WADNR Fpars stream typing map for the site there are no streams on or near the site.





*Above WDNR Fpars Stream Typing map.*

### **WDFW Priority Habitats**

According to the WDFW Priority Habitats mapping website, there are no priority habitats on the site. The wetlands identified on the NWI maps have been replicated on this map as wetlands are considered priority habitats.





*Above: WDFW Priority Habitats Map of the site*

## **Field observations**

### *Uplands*

The site has a high point along the east edge and from there slopes off to the east and gently to the west and south. As previously described, several single family homes are found on the site with associated outbuildings and landscaped lawn areas and gravel driveways.

The eastern and northwest corner contain forested areas with numerous trails and dirt roads throughout. Douglas fir, red alder and big leaf maple make up the sparse overstory in these areas. An informal atv type track is located along the eastern portion of the site and this area is generally disturbed.

The western side of the site contains a large pasture area which is mowed for hay and a portion is used as a large garden area for the westernmost residence. Numerous drainage tiles were noted to be in place in this pasture as outfalls are present along ditches to the west and south of the site with tile outfalls.

The pasture contains a mix of pasture species including sweet vernal grass, orchard grass, reed canary grass and bent grass. Monitoring of data points throughout this pasture revealed none of the pasture meets the criteria of a wetland although some hydric soils and facultative grass species are present.

Soil pits excavated throughout the site were very mixed and varied, with loam in the western area of the site and some dense silty loam and sandy loam and loamy sand on the eastern side of the site. Soils were generally high chroma with colors of 10YR 3/3-3/4. Some area in the pasture contained marginal hydric soils with B-horizon colors of 2.5Y 3/2 with few fine faint redoximorphic concentrations. However, hydrology monitoring of these areas revealed they do not contain wetland hydrology and were probably drained years ago by tile placement and ditching along the site perimeter.

One area along the northwest corner of the site was determined to meet wetland hydrology criteria. In addition, the buffer of the off-site wetland from the Category III wetland to the north encroaches onto the site. Below is a description of these areas;

### **Wetland A**

A small forested wetland was identified and delineated on the northwest corner of the site with pink flags labeled A1-A12. This area is sparsely vegetated as there are trails through this area removing much of the understory. Small cedars and quaking aspens are present as well as some speedwell and creeping buttercup in the understory.

Soil pits excavated within the wetland revealed a gravelly loam with a color of 10YR 3/2 with common, medium distinct redoximorphic concentrations. Soils were saturated near the surface in our early growing season observations of this area.

This area would be classified as PFO4C (palustrine, forested needle leaved evergreen, seasonally flooded) using the US Fish and Wildlife wetland classification method (Cowardin et al 1979).

City of Marysville Code (MMC 22E.010.060 Wetland rating and classification) states: Wetlands shall be classified as Category I, II, III, or IV using the Washington State Department of Ecology's Wetland Rating System for Western Washington, Publication No. 04-06-025, or as amended hereafter. As a result the wetland area was rated using the 2014 Wetland Rating system.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 4 for habitat.

#### **Off-site wetland to north**

As previously described, our study of the parcel to the north identified a category III wetland. This wetland was found to end at an agricultural ditch that is oriented in an east-west direction, draining to the east. The area to the south which is east of the site is plowed agricultural field which does not contain any vegetation, nor was any wetland hydrology observed in this area.

The off-site wetland was never confirmed for wetland hydrology so its mapping may be conservative and larger than actually meets wetland criteria. However, we have no further data on this area so it is presumed to be wetland.

Using the 2014 WADOE Wetland Rating system and rating the off-site wetland as a depressional type wetland, the wetlands scored a total of 16 points with 5 for habitat. This indicates a Category III wetland. This indicates a Category III wetland. Category III wetlands in the City of Marysville have a 75' buffer measured from the wetland edge.

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](mailto:esewall@sewallwc.com) .

Sincerely,  
*Sewall Wetland Consulting, Inc.*

A handwritten signature in black ink on a light yellow background, appearing to read "Ed Sewall".

Ed Sewall  
Senior Wetlands Ecologist PWS #212

Attached: Data Sheets  
Rating Form and Exhibits  
Site Plan and Survey



## **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.

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

City of Marysville Municipal Code





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

Project/Site: Gen Miller City/County: Masonville Sampling Date: 3-7-19  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP#3  
 Investigator(s): Ed Swill Section, Township, Range: 329 T31 N18E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderswood NWI 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? Yes  No  Are "Normal Circumstances" present? Yes  No   
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
4. _____				
= Total Cover				Prevalence Index worksheet:
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 = _____				
Hydrophytic Vegetation Indicators:				
- Dominance Test is >50%				
- Prevalence Index is ≤3.0				
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)				
- Wetland Non-Vascular Plants				
- Problematic Hydrophytic Vegetation (Explain)				
Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
= Total Cover			

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>A. sp.</u>	<u>40</u>		<u>FACU</u>
2. <u>H. sp.</u>	<u>20</u>		<u>FAC</u>
3. <u>F. sp.</u>	<u>20</u>		<u>FA</u>
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
= Total Cover			

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
= Total Cover			

% Bare Ground in Herb Stratum	Absolute % Cover
1. _____	
2. _____	
= Total Cover	

SOIL

Sampling Point: DP#3

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

Depth (inches)	Matrix		Redox Features		Type	Loc	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
<u>10</u>	<u>10YR 3/3</u>						<u>10m</u>	
<u>10</u>	<u>10YR 3/4</u>							

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<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)	

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_ Hydric Soil Present? Yes  No

Remarks: NO indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Filled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:

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

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

Remarks: NO indicators









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

Project/Site: Gemmer City/County: Murrayville Sampling Date: 3-7-19  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP# 7  
 Investigator(s): Ed B. Wall Section, Township, Range: 329 T31 N18E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderswood NWI 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: _____			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
= Total Cover				Prevalence Index worksheet:
Total % Cover of: _____				Multiply by: _____
OBL species _____ x 1 = _____				
FACW species _____ x 2 = _____				
FAC species _____ x 3 = _____				
FACU species _____ x 4 = _____				
UPI species _____ x 5 = _____				
Column Totals: _____ (A) _____ (B)				
Prevalence Index = B/A = _____				
Hydrophytic Vegetation Indicators:				
Dominance Test is >50% <input checked="" type="checkbox"/>				
Prevalence Index is $\leq 3.0$ <input checked="" type="checkbox"/>				
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) _____				
Wetland Non-Vascular Plants* _____				
Problematic Hydrophytic Vegetation* (Explain) _____				
Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: _____				

SOIL

Sampling Point: DP# 7

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

Depth (inches)	Matrix		Redox Features		Type	Loc	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
<u>16</u>	<u>10YR 3/2</u>						<u>fin</u>	

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

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

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

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks: no indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

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

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

Remarks: no indicators

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

Project/Site: Gummul City/County: Marysville Sampling Date: 3-7-19  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP#8  
 Investigator(s): Ed Bull Section, Township, Range: 329 T31 N125E  
 Landform (hilllope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Aldwood NWI 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>0</u> x 1 = _____
3. _____				FACW species <u>0</u> x 2 = _____
4. _____				FAC species <u>50</u> x 3 = <u>150</u>
5. _____				FACU species <u>50</u> x 4 = <u>200</u>
6. _____				UPL species _____ x 5 = _____
7. _____				Column Totals: <u>100</u> (A) <u>350</u> (B)
8. _____				Prevalence Index = B/A = <u>3.5</u>
9. _____				
10. _____				
11. _____				
= Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Festuca ovina</u>	<u>50</u>		<u>FAC</u>	___ Dominance Test is >50%
2. <u>Artemisia tridentata</u>	<u>50</u>		<u>FACU</u>	___ Prevalence Index is >3.0
3. _____				___ Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Wetland Non-Vascular Plants*
5. _____				___ Problematic Hydrophytic Vegetation* (Explain)
6. _____				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
= Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____ = Total Cover				
Remarks:				

SOIL

Sampling Point: DP#8

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

Depth (inches)	Matrix		Redox Features		Type	Loc	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
<u>3</u>	<u>10YR 2/2</u>							
<u>16</u>	<u>10YR 4/6</u>						<u>95L</u>	

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains, <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>1</sup>:

___ Histosol (A1)	___ Sandy Redox (S6)	___ 2 cm Muck (A10)
___ Histic Epipedon (A2)	___ Stripped Matrix (S8)	___ Red Parent Material (TF2)
___ Black Histic (A3)	___ Loamy Mucky Mineral (F1) (except MLRA 1)	___ Other (Explain in Remarks)
___ Hydrogen Sulfide (A4)	___ Loamy Gleyed Matrix (F2)	
___ Depleted Below Dark Surface (A11)	___ Depleted Matrix (F3)	
___ Thick Dark Surface (A12)	___ Redox Dark Surface (F6)	
___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	

<sup>1</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_ Hydric Soil Present? Yes  No

Remarks: no indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required):

Field Observations:

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

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

Remarks: no indicators





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

Project/Site: Gemmer City/County: Monroe State: LA Sampling Date: 3-7-19  
 Applicant/Owner: \_\_\_\_\_ Sampling Point: D#10 + 11  
 Investigator(s): Ed Swill Section, Township, Range: 329 T31 N18E  
 Landform (hillside, terrace, etc.): \_\_\_\_\_ Slope (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Aldwood NWI 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:		

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

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)
4. _____				
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				
1. _____				Prevalence Index worksheet: 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 = _____
2. _____				
3. _____				
4. _____				
5. _____				
<b>Herb Stratum (Plot size: _____)</b>				
1. <u>Andropogon edwardsii</u>	<u>50</u>		<u>FACU</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is >3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. <u>Pectis</u>	<u>20</u>		<u>FAC</u>	
3. <u>Polypogon</u>	<u>30</u>		<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
<b>% Bare Ground in Herb Stratum _____ = Total Cover</b>				
Remarks:				

**SOIL**

Sampling Point: \_\_\_\_\_

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

Depth (inches)	Matrix		Redox Features		Type	Loc	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
<u>4</u>	<u>10YR3/7</u>							
<u>10</u>	<u>10YR3/4</u>							

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains, Location: PL=Pore Lining, M=Matrix  
 Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils:  
 Histosol (A1) Sandy Redox (S6) 2 cm Muck (A10)  
 Histic Epipedon (A2) Stripped Matrix (S8) Red Parent Material (TF2)  
 Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Other (Explain in Remarks)  
 Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)  
 Depleted Below Dark Surface (A11) Depleted Matrix (F3)  
 Thick Dark Surface (A12) Redox Dark Surface (F6) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  
 Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)  
 Sandy Gleyed Matrix (S4) Redox Depressions (F8)

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_ Hydric Soil Present? Yes  No

Remarks: No indicators

**HYDROLOGY**

Wetland Hydrology Indicators:

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

Field Observations:  
 Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes  No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)  
 Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  
 Remarks: No indicators







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

Project/Site: GUMMEL City/County: Monroe Sampling Date: 3-7-19  
 Applicant/Owner: \_\_\_\_\_ State: LA Sampling Point: DPE 15 + 16  
 Investigator(s): Ed Swell Section, Township, Range: 329 T31 N25E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderson NWI 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

VEGETATION - Use scientific names of plants.

Trees Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
Prevalence Index worksheet:				
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 = _____				
Hydrophytic Vegetation Indicators:				
___ Dominance Test is >50%				
___ Prevalence Index is <3.0 <sup>1</sup>				
___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
___ Wetland Non-Vascular Plants <sup>1</sup>				
___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks:				

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rubus dentatus</u>	<u>40</u>	<u>FA</u>	
2. _____			
3. _____			
4. _____			
= Total Cover			
Prevalence Index = B/A = _____			
Hydrophytic Vegetation Indicators:			
___ Dominance Test is >50%			
___ Prevalence Index is <3.0 <sup>1</sup>			
___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
___ Wetland Non-Vascular Plants <sup>1</sup>			
___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____			
Remarks:			

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ficus</u>	<u>40</u>	<u>FA</u>	
2. _____			
3. _____			
4. _____			
= Total Cover			
Prevalence Index = B/A = _____			
Hydrophytic Vegetation Indicators:			
___ Dominance Test is >50%			
___ Prevalence Index is <3.0 <sup>1</sup>			
___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
___ Wetland Non-Vascular Plants <sup>1</sup>			
___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____			
Remarks:			

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
= Total Cover			
Prevalence Index = B/A = _____			
Hydrophytic Vegetation Indicators:			
___ Dominance Test is >50%			
___ Prevalence Index is <3.0 <sup>1</sup>			
___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
___ Wetland Non-Vascular Plants <sup>1</sup>			
___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____			
Remarks:			

SOIL

Sampling Point: \_\_\_\_\_

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)	%				
<u>16</u>	<u>10YR 5/4</u>						<u>fm</u>	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix

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

Indicators for Problematic Hydric Soils <sup>1</sup> :	
___ Histosol (A1)	___ Sandy Redox (S5)
___ Histic Epipedon (A2)	___ Stripped Matrix (S6)
___ Black Histic (A3)	___ Loamy Mucky Mineral (F1) (except MLRA 1)
___ Hydrogen Sulfide (A4)	___ Loamy Gleyed Matrix (F2)
___ Depleted Below Dark Surface (A11)	___ Depleted Matrix (F3)
___ Thick Dark Surface (A12)	___ Redox Dark Surface (F6)
___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)
___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)

<sup>1</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_ Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks: no indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

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

Wetland Hydrology Present? Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  
 Remarks: no indicators



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

Project/Site: Gummler City/County: Monroe Sampling Date: 3-7-19  
 Applicant/Owner: \_\_\_\_\_ State: LA Sampling Point: DP# 17  
 Investigator(s): Ed Swill Section, Township, Range: 329 T31 N10E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: K1s-p NWI 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 <input checked="" type="checkbox"/> No _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____				Total Number of Dominant Species Across All Strata: _____ (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
_____ = Total Cover				Column Totals: _____ (A) _____ (B)
_____ = Total Cover				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. _____				Dominance Test is >50%
2. _____				Prevalence Index is ≤3.0 <sup>1</sup>
3. _____				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. _____				Wetland Non-Vascular Plants <sup>1</sup>
5. _____				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
6. _____				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes _____ No _____
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: <u>none plowed field</u>				

SOIL

Sampling Point: \_\_\_\_\_

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
<u>8</u>	<u>10R3/3</u>							
<u>16</u>	<u>2.5Y1/2</u>		<u>cmf</u>					

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<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)	

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_  
 Hydric Soil Present? Yes \_\_\_\_\_ No \_\_\_\_\_

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:  
 Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)  
 Wetland Hydrology Present? Yes \_\_\_\_\_ No   
 Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  
 Remarks: no indicators

Wetland name or number A

### RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wet A Gemmer Date of site visit: 3-7-14  
 Rated by Ed Smith Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depress 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 III (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	
	Circle the appropriate ratings			
Site Potential	H <u>M</u> L	H <u>M</u> L	H <u>M</u> L	
Landscape Potential	H <u>M</u> L	H <u>M</u> L	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H M <u>L</u>	
Score Based on Ratings	7	5	4	16

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	

Wetland name or number A

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

#### Depressional Wetlands

Map of:	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 TMDLs for WRIA in which unit is found (from web)	D 3.3	

#### Riverine Wetlands

Map of:	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 TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

#### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

#### Slope Wetlands

Map of:	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, rigid 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 TMDLs for WRIA 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 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 1

NO - go to 6

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

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 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 A

<b>DEPRESSIONAL AND FLATS WETLANDS</b>	
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>	
<b>D 1.0. Does the site have the potential to improve water quality?</b>	
<b>D 1.1. Characteristics of surface water outflows from the wetland:</b> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an Intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1  2
<b>D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0</b>	0
<b>D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</b> Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > 1/2 of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0  5
<b>D 1.4. Characteristics of seasonal ponding or inundation:</b> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > 1/2 total area of wetland Area seasonally ponded is > 1/4 total area of wetland Area seasonally ponded is < 1/4 total area of wetland	points = 4 points = 3 points = 0  2
<b>Total for D 1</b>	<b>9</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>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>	
<b>D 2.1. Does the wetland unit receive stormwater discharges?</b>	Yes = 1 (No = 0) 0
<b>D 2.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generate pollutants?</b>	Yes = 1 (No = 0) 1
<b>D 2.3. Are there septic systems within 250 ft of the wetland?</b>	Yes = 1 (No = 0) 0
<b>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?</b> Source _____	Yes = 1 (No = 0) 0
<b>Total for D 2</b>	<b>1</b>

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>	
<b>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?</b>	Yes = 1 (No = 0) 1
<b>D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?</b>	Yes = 2 (No = 0) 2
<b>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)?</b>	Yes = 2 (No = 0) 2
<b>Total for D 3</b>	<b>5</b>

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

Wetland name or number A

<b>DEPRESSIONAL AND FLATS WETLANDS</b>	
<b>Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation</b>	
<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>	
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b> 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 outlet Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 4 points = 2 points = 1 points = 0  2
<b>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 if dry, the deepest part.</b> Marks of ponding are 3 ft or more above the surface or bottom of outlet Marks of ponding between 2 ft to < 3 ft from 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)	points = 7 points = 5 points = 3 points = 3 points = 1 points = 0  0
<b>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.</b> 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 wetland is in the Flats class	points = 5 points = 3 points = 0 points = 5  3
<b>Total for D 4</b>	<b>5</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>D 5.0. Does the landscape have the potential to support hydrologic functions of the site?</b>	
<b>D 5.1. Does the wetland receive stormwater discharges?</b>	Yes = 1 (No = 0) 0
<b>D 5.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	Yes = 1 (No = 0) 0
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt; 1 residence/ac, urban, commercial, agriculture, etc.)?</b>	Yes = 1 (No = 0) 0
<b>Total for D 5</b>	<b>0</b>

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>	
<b>D 6.1. The unit 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.</b> 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.	points = 2 points = 1 points = 1  points = 0 points = 0
<b>D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b>	Yes = 2 (No = 0) 2
<b>Total for D 6</b>	<b>2</b>

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

Wetland name or number A

**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 0

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  
 Lake Fringe wetland 2 points  
 Freshwater tidal wetland 2 points

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

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 = 3 points

Wetland name or number A

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).  
 Standing snags (dbh > 4 in) within the wetland  
 Undercut 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 33 ft (10 m)  
 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*)  
 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*)  
 Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

Total for H 1 Add the points in the boxes above 2

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

**H 2.0. Does the landscape have the potential to support the habitat functions of the site?**

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate:  $\frac{1}{100} \times (\% \text{ undisturbed habitat } 9 + [(\% \text{ moderate and low intensity land uses})/2]) = 5 = 6\%$

If total accessible habitat is:

> 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

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate:  $\frac{20}{100} \times (\% \text{ undisturbed habitat } 60 + [(\% \text{ moderate and low intensity land uses})/2]) = 55 = 55\%$

Undisturbed habitat > 50% of Polygon points = 3  
 Undisturbed habitat 10-50% and in 1-3 patches points = 2  
 Undisturbed habitat 10-50% and > 3 patches points = 1  
 Undisturbed habitat < 10% of 1 km Polygon points = 0

H 2.3. Land use intensity in 1 km Polygon: If

> 50% of 1 km Polygon is high intensity land use points = (-2)  
 ≤ 50% of 1 km Polygon is high intensity points = 0

Total for H 2 Add the points in the boxes above 2

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

**H 3.0. Is the habitat provided by the site valuable to society?**

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.*

Site meets ANY of the following criteria: points = 2

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 a Shoreline Master Plan, or in a watershed plan  
 Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

Site does not meet any of the criteria above points = 0

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



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. 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 A

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<b>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</b>	
<b>SC 1.0. Estuarine wetlands</b> 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 = <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 332-30-1517? Yes = <b>Category I</b> 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? — 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) — At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> 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? Yes - Go to SC 2.2    No - Go to <b>SC 2.3</b>	<b>Cat. I</b>
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> 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://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes - <b>Contact WNHP/WDNR and go to SC 2.4</b> 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? Yes = <b>Category I</b> No = <b>Not a WHCV</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? Yes - Go to SC 3.3    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? Yes - Go to SC 3.3    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? Yes = <b>Is a Category I bog</b> No - Go to SC 3.4 <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.	<b>Cat. I</b>
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? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	

Wetland name or number A

<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? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <li>— <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.</li> <li>— <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).</li> </ul> <p>Yes = Category I    No = Not a forested wetland for this section</p>	<p>Cat. I</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> <ul style="list-style-type: none"> <li>— 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</li> <li>— 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>)</li> </ul> <p>Yes – Go to SC 5.1    No = Not a wetland in a coastal lagoon</p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— 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).</li> <li>— At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p>Yes = Category I    No = Category II</p>	<p>Cat. I</p> <p>Cat. II</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)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>— Long Beach Peninsula: Lands west of SR 103</li> <li>— Grayland-Westport: Lands west of SR 105</li> <li>— Ocean Shores-Copalls: Lands west of SR 115 and SR 109</li> </ul> <p>Yes – Go to SC 6.1    No = not an interdunal 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,H or H,H,M for the three aspects of function)?</p> <p>Yes = Category I    No – Go to SC 6.2</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>Yes = Category II    No – Go to SC 6.3</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 III    No = Category IV</p>	<p>Cat. I</p> <p>Cat. II</p> <p>Cat. III</p> <p>Cat. IV</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>MA</p>

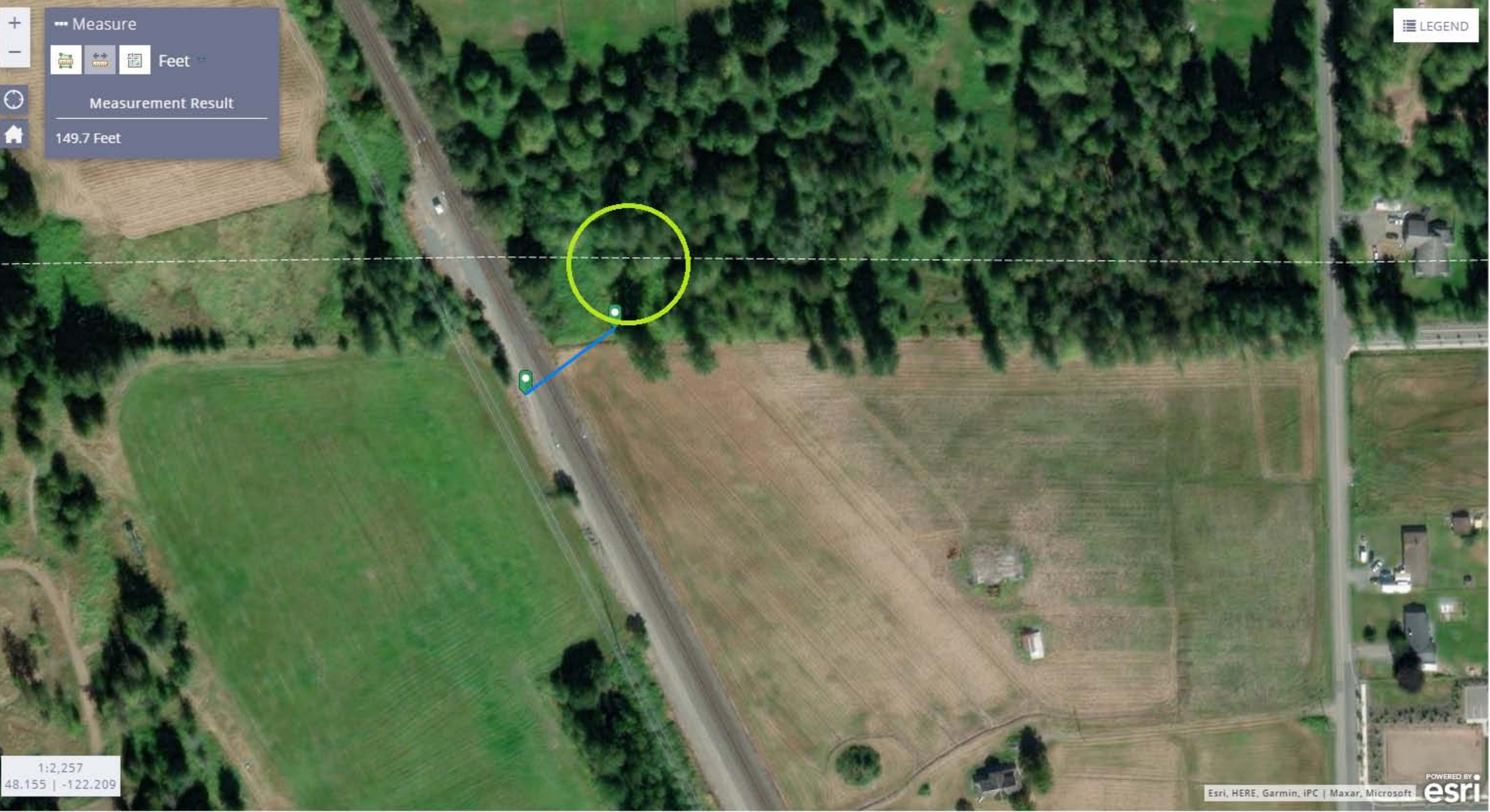


# National Wetlands Inventory

surface waters and wetlands

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    - Source Type
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    - Image Year
  - Areas of Interest
  - FWS Managed Lands
  - Historic Wetland Data



1:2,257  
48,155 | -122,209

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# Water Quality Atlas Map

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

Unit: Feet

Distance: 2,049.02 ft

[New measurement](#)



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Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	66746	170200011202_01_01	5	Water	Dissolved Oxygen	<a href="#">View</a>
	11253	170200050203_01_01	5	Water	Temperature	<a href="#">View</a>
	42784	170200050203_01_01	5	Water	Dissolved Oxygen	<a href="#">View</a>

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