

# AQUATICA

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April 7, 2020

AQ#18-322

Ms. Pasha Klein, Environmental Scientist, III  
King County  
Department of Permitting and Environmental Review  
35030 SE Douglas Street, Ste. 210  
Snoqualmie, Washington 98065

REFERENCE: Oxbow Farms, Parcel 362606-9037  
10819 Carnation Duvall Rd., Carnation, Washington  
SUBJECT: Critical Area Report (Revised with New Rating Forms)

Dear Pasha:

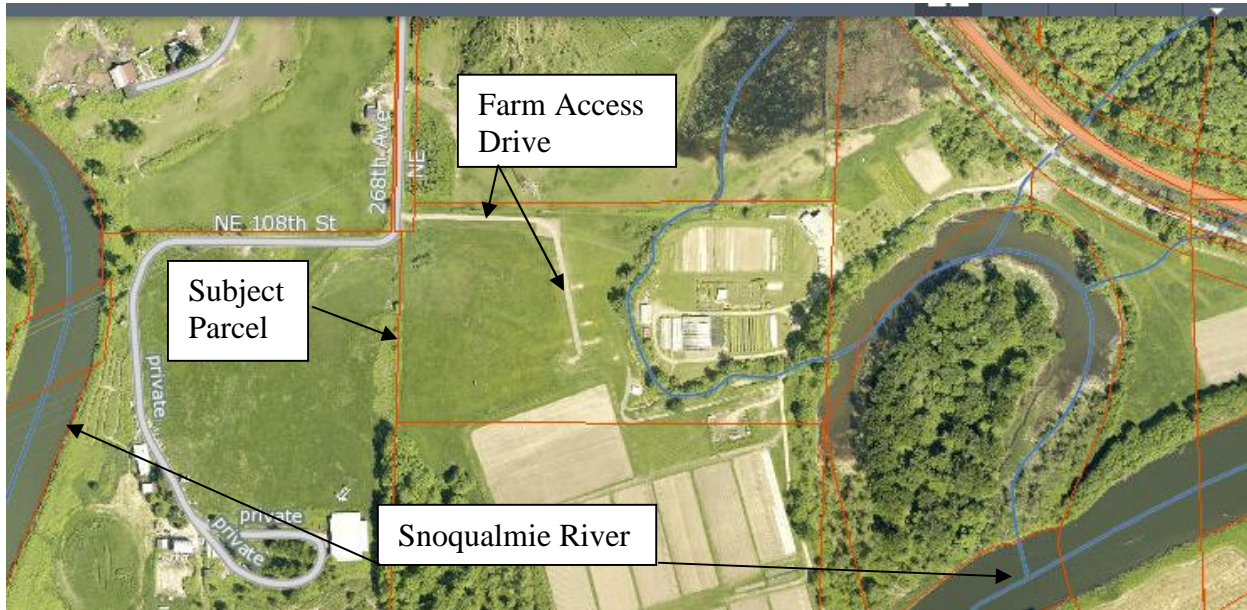
This letter summarizes the results of a wetland study conducted on a portion of Oxbow Farms, located between Carnation and Duvall (**Figure1**). The purpose of this study was to identify the location of wetlands and streams and describe regulatory constraints of these features. The extent of the study included the area within approximately 200 feet of an already constructed farm access drive located on the eastern half of the above referenced parcel. This letter will summarize background information reviewed, wetland and stream classifications and buffer setbacks according to Chapter 21A.24 of the King County Code (KCC), as well as supporting data for our conclusions.



Figure 1. Vicinity Map

## SITE DESCRIPTION and REVIEW OF BACKGROUND MATERIALS

This parcel is located east of the Snoqualmie River, it is one parcel in an assemblage of parcels that are part of Oxbow Farms. The project area is used for farming, including growing hay and produce. The scope of the study included the area within 200 feet of the new farm access drive shown below in **Figure 2**.



**Figure 2.** Aerial Photo

Background material reviewed prior to my site visit included King County's iMAP, the Washington Department of Natural Resources (DNR) stream type map, and the King County soil survey. According to iMAP, the entire property is within the 100-year preliminary FEMA floodplain. Also shown on iMAP is a wetland to the north of the project area (shown on Figure 2), and a Class 2 salmonid stream to the east of the farm access drive in the project area. The Washington DNR also shows the drainage feature east of the gravel road as a Type F (fish bearing stream).

The Natural Resources Conservation Service (NRCS) has mapped soil in the project area as Nooksack silt loam, 0-2 percent slopes. This moderately well drained soil type formed from alluvium in floodplains. It is not listed as a hydric soil. Within this soil type there may be unmapped inclusions of Oridia silt loam and Puget soils, which are hydric soils.

### Precipitation

Precipitation in the months prior to the wetland delineation (late December) was reviewed to ensure that the wetland delineation occurred during a time of sufficient rainfall. The property lies in the 100-year floodplain of the Snoqualmie River. Due to the complexity in these types of delineation, where the soil, vegetation, and potentially hydrology of the area may have been altered, the delineation was conducted during the wet season to enable observations of the wet season water table. As shown in Table 1, the fall of 2018 experienced rainfall that was within

the range of normal, at about 95% of normal. From this information it was determined that the delineation occurred during a period of normal rainfall and water levels observed should be considered accurate for the wet season.

Table 1. Monthly 2018 and Historical Average Precipitation (in inches)

	September	October	November	December	Total (Oct.-Dec.)
2018	1.59	4.56	6.84	7.12	20.11
Historical Average	2.6	4.78	7.45	6.42	21.25
2018 Percent of Normal	61	95	92	111	95

\*Data obtained from the National Oceanic and Atmospheric Administration, accessed at: <http://agacis.rcc-acis.org/>. Monthly totals were obtained from the Carnation, 3.6N Station and historical monthly averages were obtained from the Monroe, Washington Station.

## METHODS

Wetlands were delineated according to the Army Corps of Engineers 1987 Wetland Delineation Manual and the 2010 Regional Supplement for the Western Mountains, Valleys, and Coast Region. The wetland boundaries were flagged with pink wire flags and wood stakes, due to the height of the reed canary grass in the field. Pairs of sample plots bracketing the wetland boundaries were established to aid in determining their location and were also flagged with wire flags. Sample plot data forms are attached. Wetlands were rated utilizing the Washington State Department of Ecology Wetland Rating System for Western Washington (2014).

The ordinary high water mark (OHWM) was identified according to King County Code 21A.06.825, which defines the OHWM as, "the mark found by examining the bed and banks of a stream, lake, pond or tidal water and ascertaining where the presence and action of waters are so common and long maintained in ordinary years as to mark upon the soil a vegetative character distinct from that of the abutting upland. In an area where the ordinary high-water mark cannot be found, the line of mean high water in areas adjoining freshwater or mean higher high tide in areas adjoining saltwater is the "ordinary high-water mark." In an area where neither can be found, the top of the channel bank is the "ordinary high-water mark." In braided channels and alluvial fans, the ordinary high-water mark or line of mean high water include the entire water or stream feature. A distinct high-water mark was observed and delineated in the drainage feature east of the gravel road.

## RESULTS

Two wetland areas were delineated on-site (Attached Site Plan). Wetland A is located in a closed depression near the northeastern corner of the property, south of the farm access drive. Wetland B is a very small shallow closed depression located northeast of the farm access drive just south of the northern property boundary.

Both wetlands are in pastureland that has been managed for hay production. Consequently, vegetation in the wetlands is dominated by pasture grasses and common weeds. Common species included creeping buttercup (*Ranunculus repens*), reed canarygrass (*Phalaris*

*arundinacea*), bentgrass (*Agrostis spp.*), tall fescue (*Festuca arundinacea*) and velvet grass (*Holcus lanatus*). Both wetlands appear to be seasonally saturated or flooded wetlands, as indicated by the presence of redoxymorphic features including iron concentrations in the matrix. Soil in Wetland A was a very dark grayish brown (10YR4/2) silt loam with dark yellowish brown (10YR 4/6) concentrations and gray (10YR5/1) depletions in the matrix. Soil in Wetland B was a gray silt loam with dark yellowish brown (10YR3/6) concentrations in the matrix. Both areas delineated as wetlands had soil that was obviously hydric and distinct from the adjacent surrounding uplands. Upland areas were observed to have a very dark grayish brown (10YR 4/2) silt loam *without* concentrations or depletions in the matrix. There were no hydric soil characteristics in the upland areas and the vegetation in the wetland was distinctive from the upland areas. There was no indication of ambiguity between wetland and upland areas, and it was determined that hydrology monitoring was not needed to accurately delineate the wetlands.

Both Wetlands A and B were categorized as a Category III wetlands, per the DOE rating system. Wetlands with this wetland category and a habitat score lower than six require a buffer width that is dependent on the land use intensity summarized in the table below. The assumed buffer width without a farm plan is highlighted in gray.

Land Use Intensity*	Buffer Width (feet)
High Impact	80
Moderate Impact	60
Low Impact	40

\*a. High impact includes:

- (1) sites zoned commercial or industrial;
- (2) commercial, institutional or industrial use on a site regardless of the zoning designation;
- (3) nonresidential use on a site zoned for residential use;
- (4) high-intensity active recreation use on a site regardless of zoning[, such as] golf courses, ball fields and similar use;
- (5) all sites within the Urban Growth Area; or
- (6) Residential zoning greater than one dwelling unit per acre;

b. Moderate impact includes:

- (1) residential uses on sites zoned residential one dwelling unit per acre or less;
- (2) residential use on a site zoned rural area, agriculture or forestry;
- (3) agricultural uses without an approved farm management plan;
- (4) utility corridors or right-of-way shared by several utilities, including maintenance roads; or
- (5) moderate-intensity active recreation or open space use, such as paved trails, parks with biking, jogging and similar use; and

c. Low impact includes:

- (1) forestry use on a site regardless of zoning designation;
- (2) passive recreation uses, such as unpaved trails, nature viewing areas, fishing and camping areas, and other similar uses that do not require permanent structures, on a site regardless of zoning;
- (3) agricultural uses carried out in accordance with an approved farm management plan and in accordance with K.C.C. 21A.24.045.D.53. and K.C.C. 21A.24.045.D.54.; or
- (4) utility corridors without a maintenance road and little or no vegetation maintenance.



The wetland shown on iMAP to the north is greater than 200 feet from the farm access drive and its buffer does not appear to extend near it.

An aquatic area was delineated east of the farm access drive. This feature is mapped by iMAP as a Class 2 salmonid stream under the old Sensitive Areas Ordinance. Under the current Critical Areas Ordinance, streams with fish or fish habitat are classified as Type F aquatic areas. This stream is also classified as a Type F aquatic area by the Washington DNR. A 165' buffer applies to Type F aquatic areas outside the UGA, which would cause a small portion of the road to encroach into the outer approximately 12 feet of the stream buffer. This encroachment could be addressed with buffer averaging or other modification under KCC 21A.24.358.E or through a farm management plan. Parts of this aquatic area also meet the wetland criteria, although it was not rated as the aquatic area buffer is assumed to be larger than any wetland buffer.

#### **SUMMARY**

Two wetlands and an aquatic/wetland area in the project area were identified rated and require buffer setbacks of 60 feet assuming a moderate intensity adjacent land use. The Type F aquatic area was identified that requires 165-foot buffers. It is possible that through an approved farm plan, the buffers can be modified.

Sincerely,

A handwritten signature in black ink, appearing to read "Teresa Opolka". The signature is written in a cursive, flowing style.

Teresa Opolka, PWS  
Wetland Ecologist

Attachments: Site Plan, Wetland Delineation Forms, Wetland Rating Forms

Wetland name or number A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): A Date of site visit: 3/2020  
 Rated by T. Opolka Trained by Ecology?  Yes  No Date of training 5/2005, 3/2015  
 HGM Class used for rating Depression 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 IMAP

**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	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input checked="" type="radio"/> M L	H <input checked="" type="radio"/> M L	H M <input checked="" type="radio"/> L	
Landscape Potential	H <input checked="" type="radio"/> M L	H <input checked="" type="radio"/> M L	H <input checked="" type="radio"/> M L	
Value	<input checked="" type="radio"/> H M L	<input checked="" type="radio"/> H M L	H M <input checked="" type="radio"/> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>7</b>	<b>4</b>	<b>18</b>

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

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

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

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

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	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	5

Riverine Wetlands      **\*not mapped, flood plain wetland has a very large contributing basin.**

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 ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	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 ( <i>can be added to another figure</i> )	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 <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	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	

## 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     **A**    

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>	
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). <span style="float: right;">points = 3</span> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. <span style="float: right;">points = 2</span> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing <span style="float: right;">points = 1</span> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. <span style="float: right;">points = 1</span>	<b>3</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0	<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> Wetland has persistent, ungrazed, plants > 95% of area <span style="float: right;">points = 5</span> Wetland has persistent, ungrazed, plants > ½ of area <span style="float: right;">points = 3</span> Wetland has persistent, ungrazed plants > 1/10 of area <span style="float: right;">points = 1</span> Wetland has persistent, ungrazed plants < 1/10 of area <span style="float: right;">points = 0</span>	<b>1</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland <span style="float: right;">points = 4</span> Area seasonally ponded is > ¼ total area of wetland <span style="float: right;">points = 2</span> Area seasonally ponded is < ¼ total area of wetland <span style="float: right;">points = 0</span>	<b>2</b>
<b>Total for D 1</b>	<b>6</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>	
D 2.1. Does the wetland unit receive stormwater discharges? <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? <span style="float: right;">Yes = 1 No = 0</span>	<b>1</b>
D 2.3. Are there septic systems within 250 ft of the wetland? <span style="float: right;">Yes = 1 No = 0</span>	<b>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? Source _____ <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>
<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>	
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? <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? <span style="float: right;">Yes = 1 No = 0</span>	<b>1</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)? <span style="float: right;">Yes = 2 No = 0</span>	<b>2</b>
<b>Total for D 3</b>	<b>3</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  

**DEPRESSIONAL AND FLATS WETLANDS**

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

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)	points = 4		<b>2</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2		
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1		
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0		
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.			
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7		<b>5</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5		
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3		
The wetland is a "headwater" wetland	points = 3		
Wetland is flat but has small depressions on the surface that trap water	points = 1		
Marks of ponding less than 0.5 ft (6 in)	points = 0		
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	points = 5		<b>0</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3		
The area of the basin is more than 100 times the area of the unit	points = 0		
Entire wetland is in the Flats class	points = 5		
Total for D 4	Add the points in the boxes above		<b>7</b>

**Rating of Site Potential** If score is:   12-16   = H   6-11   = **M**   0-5   = L Record the rating on the first page

D 5.0. 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		<b>0</b>
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		<b>1</b>
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		<b>1</b>
Total for D 5	Add the points in the boxes above		<b>2</b>

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?			
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.			
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):			<b>2</b>
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2		
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1		
Flooding from groundwater is an issue in the sub-basin.	points = 1		
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 _____	points = 0		
There are no problems with flooding downstream of the wetland.	points = 0		
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		<b>0</b>
Total for D 6	Add the points in the boxes above		<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.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>1</b> |
| <input checked="" type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = <u>1</u>  |          |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

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*).

- |  |                                     |          |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                    | 4 or more types present: points = 3 | <b>1</b> |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                          | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                   | 2 types present: points = <u>1</u>  |          |
| <input checked="" type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland           |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>  | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                     | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

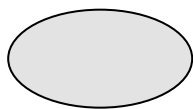
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*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*

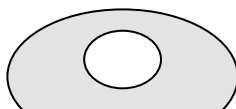
- |                              |                   |          |
|------------------------------|-------------------|----------|
| If you counted: > 19 species | points = 2        | <b>0</b> |
| 5 - 19 species               | points = 1        |          |
| <u>&lt; 5 species</u>        | points = <u>0</u> |          |

H 1.4. Interspersion of habitats

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



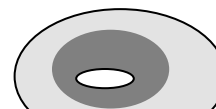
None = 0 points



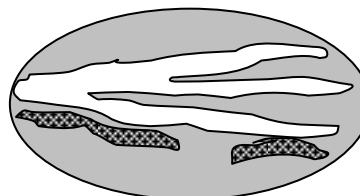
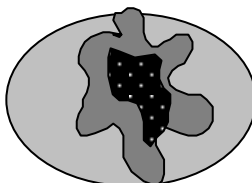
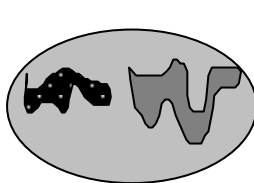
Low = 1 point



Moderate = 2 points



All three diagrams in this row are **HIGH** = 3points



**1**

Wetland name or number   A  

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<p><b>0</b></p>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>3</b></p>

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i>           % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  20  </u> = <u>  20  </u> %</p> <p>If total accessible habitat is:</p> <p style="text-align: right;"><b>40/2</b></p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = <b>2</b></span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<p><b>2</b></p>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i>           % undisturbed habitat <u>  19  </u> + [(% moderate and low intensity land uses)/2] <u>  20  </u> = <u>  39  </u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = <b>1</b></span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<p><b>1</b></p>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<p><b>0</b></p>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>3</b></p>

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

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p>— It has 3 or more priority habitats within 100 m (see next page)</p> <p>— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p>— It is mapped as a location for an individual WDFW priority species</p> <p>— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p>— 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</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	<p><b>0</b></p>

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

## 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
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b></p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <ul style="list-style-type: none"> <li>— The dominant water regime is tidal,</li> <li>— Vegetated, and</li> <li>— With a salinity greater than 0.5 ppt</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b>    <input checked="" type="radio"/> No = <b>Not an estuarine wetland</b></p>	
<p>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?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b></p>	<b>Cat. I</b>
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <ul style="list-style-type: none"> <li>— 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)</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> <li>— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<b>Cat. I</b>  <b>Cat. II</b>
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;">Yes – Go to <b>SC 2.2</b>    <input checked="" type="radio"/> No – Go to <b>SC 2.3</b></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?</p> <p style="text-align: center;"><a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a></p> <p style="text-align: right;">Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <input checked="" type="radio"/> No = <b>Not a WHCV</b></p> <p>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?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Bogs</b></p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>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?</p> <p style="text-align: right;">Yes – Go to <b>SC 3.3</b>    <input checked="" type="radio"/> No – Go to <b>SC 3.2</b></p> <p>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?</p> <p style="text-align: right;">Yes – Go to <b>SC 3.3</b>    <input checked="" type="radio"/> No = <b>Is not a bog</b></p> <p>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?</p> <p style="text-align: right;">Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b></p> <p><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.</p> <p>SC 3.4. Is an area with peats or mucks forested (&gt; 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?</p> <p style="text-align: right;">Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	<b>Cat. I</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? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></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 style="text-align: right;">Yes = <b>Category I</b>    <input checked="" type="radio"/> <b>No</b> = <b>Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <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 style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <input checked="" type="radio"/> <b>No</b> = <b>Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1.</b> Does the wetland meet all of the following three conditions?</p> <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 ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <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-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <input checked="" type="radio"/> <b>No</b> = <b>not an interdunal wetland for rating</b></p> <p><b>SC 6.1.</b> Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2.</b> Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3.</b> Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number B

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): B Date of site visit: 3/2020  
 Rated by T. Opolka Trained by Ecology?  Yes  No Date of training 5/2005, 3/2015  
 HGM Class used for rating Depression 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			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	<u>L</u>	H	M	<u>L</u>	H	M	<u>L</u>	
Landscape Potential	H	<u>M</u>	L	H	<u>M</u>	L	H	<u>M</u>	L	
Value	<u>H</u>	M	L	<u>H</u>	M	L	H	<u>M</u>	L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>			<b>6</b>			<b>5</b>			<b>17</b>

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

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

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number  B

## 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	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	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	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

Riverine Wetlands **\*flood plain wetland has a very large contributing basin/not mapped.**

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 ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	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 ( <i>can be added to another figure</i> )	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 <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	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	

## 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 **B** \_\_\_\_\_

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  B

<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>		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). <span style="float: right;">points = 3</span> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. <span style="float: right;">points = 2</span> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing <span style="float: right;">points = 1</span> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. <span style="float: right;">points = 1</span>	<b>3</b>	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0	<b>0</b>	
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> Wetland has persistent, ungrazed, plants > 95% of area <span style="float: right;">points = 5</span> Wetland has persistent, ungrazed, plants > 1/2 of area <span style="float: right;">points = 3</span> Wetland has persistent, ungrazed plants > 1/10 of area <span style="float: right;">points = 1</span> Wetland has persistent, ungrazed plants < 1/10 of area <span style="float: right;">points = 0</span>	<b>0</b>	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <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 <span style="float: right;">points = 4</span> Area seasonally ponded is > 1/4 total area of wetland <span style="float: right;">points = 2</span> Area seasonally ponded is < 1/4 total area of wetland <span style="float: right;">points = 0</span>	<b>0</b>	
Total for D 1 <span style="float: right;">Add the points in the boxes above</span>		<b>3</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>		
D 2.1. Does the wetland unit receive stormwater discharges? <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? <span style="float: right;">Yes = 1 No = 0</span>	<b>1</b>	
D 2.3. Are there septic systems within 250 ft of the wetland? <span style="float: right;">Yes = 1 No = 0</span>	<b>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? Source _____ <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>	
Total for D 2 <span style="float: right;">Add the points in the boxes above</span>		<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>		
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? <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>	
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? <span style="float: right;">Yes = 1 No = 0</span>	<b>1</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)? <span style="float: right;">Yes = 2 No = 0</span>	<b>2</b>	
Total for D 3 <span style="float: right;">Add the points in the boxes above</span>		<b>3</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 **B** \_\_\_\_\_

**DEPRESSIONAL AND FLATS WETLANDS**

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

<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)	points = 4	<b>4</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
<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	points = 7	<b>0</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 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	points = 5	<b>0</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
<b>Total for D 4</b>	<b>Add the points in the boxes above</b>	<b>4</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 <u>No = 0</u>	<b>0</b>
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	<u>Yes = 1</u> No = 0	<b>1</b>
<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 <u>No = 0</u>	<b>0</b>
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>1</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):		<b>2</b>
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the sub-basin.	points = 1	
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 _____	points = 0	
There are no problems with flooding downstream of the wetland.	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 <u>No = 0</u>	<b>0</b>
<b>Total for D 6</b>	<b>Add the points in the boxes above</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   B  

**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.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>0</b> |
| <input checked="" type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

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*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated                         | 2 types present: points = 1         |          |
| <input type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <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"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

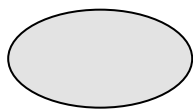
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*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*

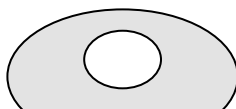
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>0</b> |
| 5 - 19 species               | points = 1 |          |
| <u>&lt; 5 species</u>        | points = 0 |          |

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.*



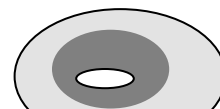
**None = 0 points**



**Low = 1 point**

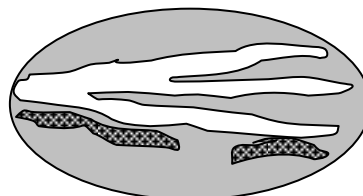
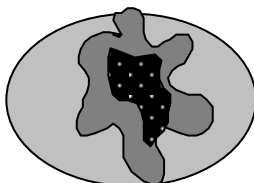
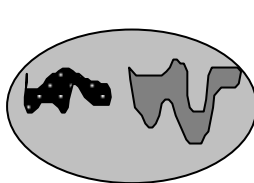


**Moderate = 2 points**



**0**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number  B

<p>H 1.5. Special habitat features:          Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>  <input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).  <input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)  <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)  <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<p><b>0</b></p>
<p>Total for H 1 <span style="float: right;">Add the points in the boxes above</span></p>	<p><b>1</b></p>

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>20</u> = <u>20</u> %          If total accessible habitat is:          &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>          20-33% of 1 km Polygon <span style="float: right;">points = <u>2</u></span>          10-19% of 1 km Polygon <span style="float: right;">points = 1</span>          &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<p><b>2</b></p>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  <i>Calculate:</i> % undisturbed habitat <u>19</u> + [(% moderate and low intensity land uses)/2] <u>20</u> = <u>39</u> %          Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>          Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span>          Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = <u>1</u></span>          Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<p><b>1</b></p>
<p>H 2.3. Land use intensity in 1 km Polygon: If          &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>          ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<p><b>0</b></p>
<p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span></p>	<p><b>3</b></p>

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

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i>          Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)  <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)  <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species  <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan          Site has 1 or 2 priority habitats (listed on next page) <u>within 100 m</u> <span style="float: right;">points = 1</span>          Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	<p><b>1</b></p>

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



## 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  B

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b></p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <ul style="list-style-type: none"> <li>— The dominant water regime is tidal,</li> <li>— Vegetated, and</li> <li>— With a salinity greater than 0.5 ppt</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b>    <input checked="" type="radio"/> No = <b>Not an estuarine wetland</b></p>	
<p>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?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b></p>	<b>Cat. I</b>
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <ul style="list-style-type: none"> <li>— 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)</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> <li>— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<b>Cat. I</b>  <b>Cat. II</b>
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;">Yes – Go to <b>SC 2.2</b>    <input checked="" type="radio"/> No – Go to <b>SC 2.3</b></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?</p> <p style="text-align: center;"><a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a></p> <p style="text-align: right;">Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <input checked="" type="radio"/> No = <b>Not a WHCV</b></p> <p>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?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Bogs</b></p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>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?</p> <p style="text-align: right;">Yes – Go to <b>SC 3.3</b>    <input checked="" type="radio"/> No – Go to <b>SC 3.2</b></p> <p>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?</p> <p style="text-align: right;">Yes – Go to <b>SC 3.3</b>    <input checked="" type="radio"/> No = <b>Is not a bog</b></p> <p>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?</p> <p style="text-align: right;">Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b></p> <p><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.</p> <p>SC 3.4. Is an area with peats or mucks forested (&gt; 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?</p> <p style="text-align: right;">Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	<b>Cat. I</b>

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife’s forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <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 style="text-align: right;">Yes = <b>Category I</b>    <input checked="" type="radio"/> <b>No</b> = <b>Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <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 style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <input checked="" type="radio"/> <b>No</b> = <b>Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1.</b> Does the wetland meet all of the following three conditions?</p> <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 ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <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-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <input checked="" type="radio"/> <b>No</b> = <b>not an interdunal wetland for rating</b></p> <p><b>SC 6.1.</b> Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2.</b> Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3.</b> Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>N/A</b></p>

**Figure 1. Hydro., vegetation and outlet sketch.**



Wetland area,  
approximately 0.3 acre

Area vegetated with willows is forested, >.10 of wetland area. this area is also seasonally flooded with a couple feet of ponding. Majority of remaining wetland appears to be saturated and is vegetated with emergent vegetation, mostly reed canarygrass.

**No Outlet**

### **Wetland B**



**Wetland B is a small depression, all emergent, no outlet with occasional surface ponding following flood events**



Figure 2. 150 foot boundary







Figure 3. 1 KM Circle, 0.6 sq km undisturbed, the rest is moderate with the high intensity areas in red (plus the main roads) moderate intensity accessible habitat in blue

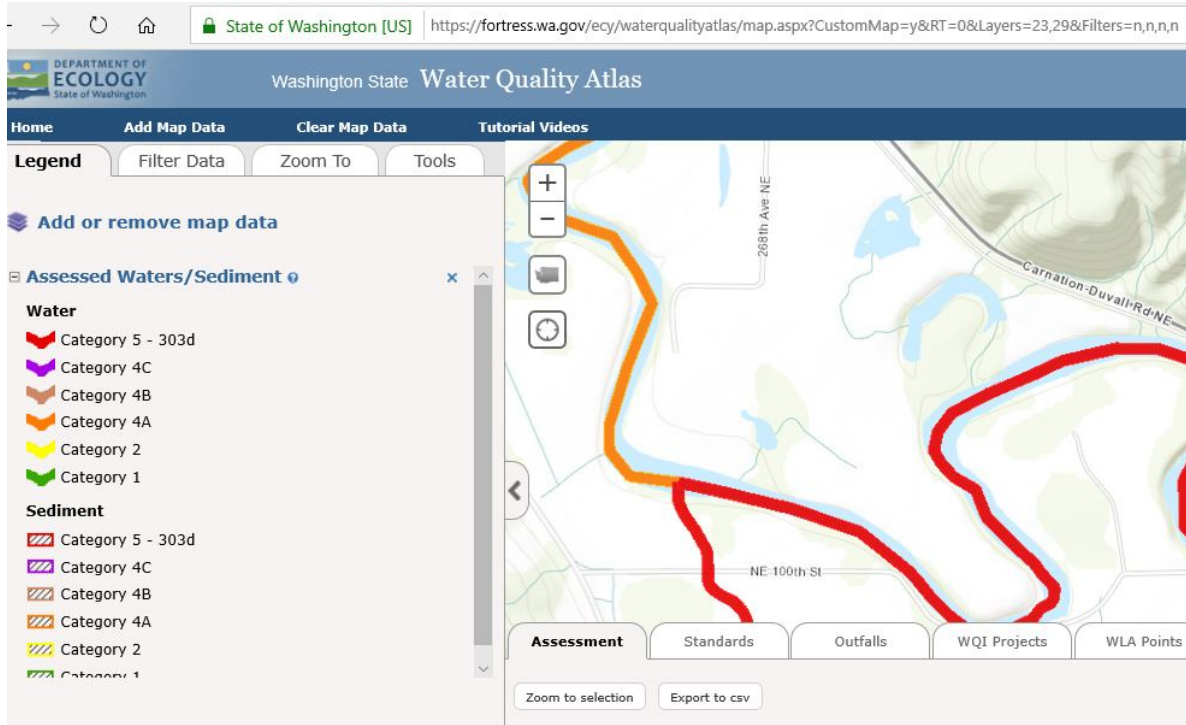


Figure 4 Site drains into a 303d listed water

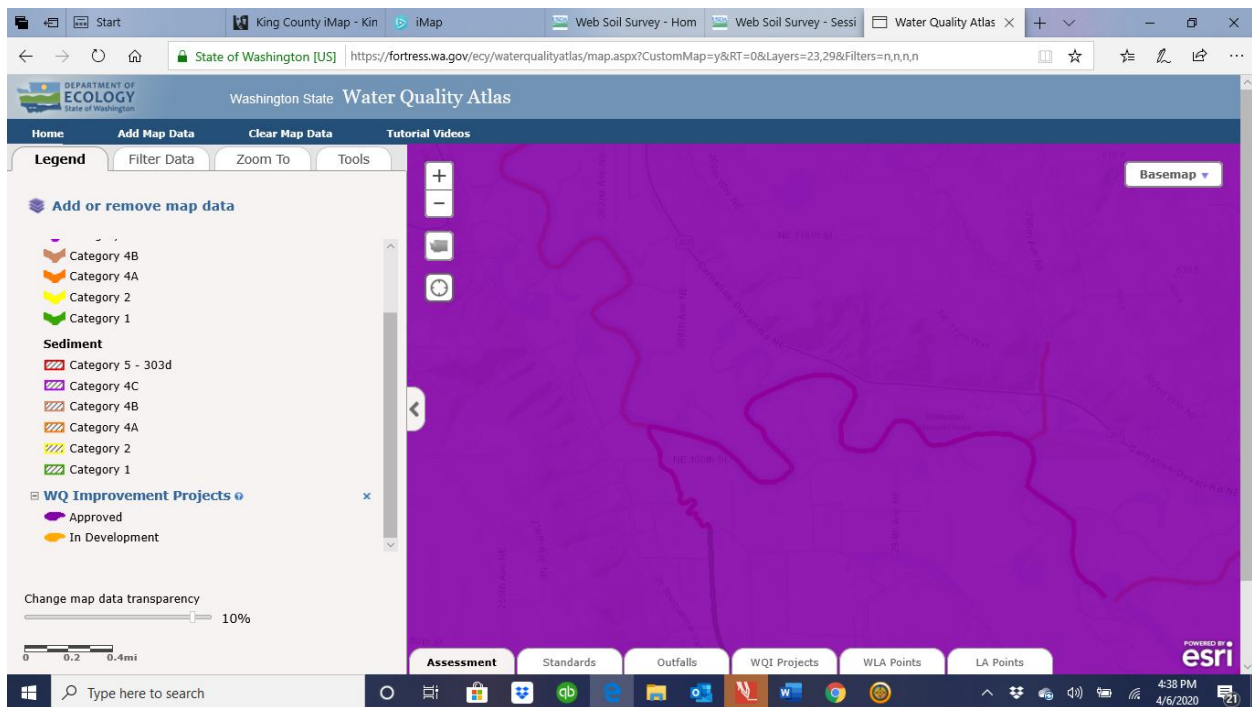


Figure 5. Site in an area with an approved TMDL

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP1  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: upland field

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? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks:	

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>5ft x 5ft</u> )					
1. _____	_____	_____	#####	#N/A	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
_____ = Total Cover					
Herb Stratum (Plot size: <u>5ft x 5ft</u> )					
1. <u>Schedonorus arundinaceus</u>	30	Y	30.0	FAC	
2. <u>Agrostis stolonifera</u>	40	Y	40.0	FAC	
3. <u>Dactylis glomerata</u>	30	Y	30.0	FACU	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
6. _____	_____	_____	_____	_____	
7. _____	_____	_____	_____	_____	
8. _____	_____	_____	_____	_____	
9. _____	_____	_____	_____	_____	
10. _____	_____	_____	_____	_____	
11. _____	_____	_____	_____	_____	
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____ )					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>0</u>					

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

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**Prevalence Index worksheet:**

	Total % Cover of:		Multiply by:	
OBL species	0		x 1 =	0
FACW species	0		x 2 =	0
FAC species	70		x 3 =	210
FACU species	30		x 4 =	120
UPL species	0		x 5 =	0
Column Totals:	100	(A)		330 (B)
Prevalence Index = B/A =				<u>3.300</u>

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - 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.

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**Hydrophytic Vegetation Present?**  Yes  No

Remarks:



**SOIL**

Sampling Point: DP1

**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 <sup>1</sup>	Loc <sup>2</sup>		
0-13	10YR	4/2	100				SILT LOAM	
	---							
	---							

<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.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p> <input type="checkbox"/> Sandy Redox (S5)  <input type="checkbox"/> Stripped Matrix (S6)  <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)  <input type="checkbox"/> Loamy Gleyed Matrix (F2)  <input type="checkbox"/> Depleted Matrix (F3)  <input type="checkbox"/> Redox Dark Surface (F6)  <input type="checkbox"/> Depleted Dark Surface (F7)  <input type="checkbox"/> Redox Depressions (F8)             </p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if present):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
Remarks: _____	

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (2 or more required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p><b>Field Observations:</b></p> Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No      Depth (inches): _____ Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No        Depth (inches): _____ (includes capillary fringe)	<p><b>Wetland Hydrology Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: \_\_\_\_\_

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP2  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: upland field

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? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks: _____	

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																																									
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3. _____	_____	_____	#####	#N/A																																									
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1. _____	_____	_____	#####	#N/A	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:20%;">Total % Cover of:</td> <td style="width:20%;"></td> <td style="width:20%;">Multiply by:</td> <td style="width:10%;"></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td></td> <td>x 1 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>60</u></td> <td></td> <td>x 2 =</td> <td align="center"><u>120</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>25</u></td> <td></td> <td>x 3 =</td> <td align="center"><u>75</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>15</u></td> <td></td> <td>x 4 =</td> <td align="center"><u>60</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>0</u></td> <td></td> <td>x 5 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>100</u></td> <td align="center"><u>(A)</u></td> <td></td> <td align="center"><u>255</u> (B)</td> </tr> <tr> <td colspan="5" style="text-align: right;">Prevalence Index = B/A = <u>2.550</u></td> </tr> </table>		Total % Cover of:		Multiply by:		OBL species	<u>0</u>		x 1 =	<u>0</u>	FACW species	<u>60</u>		x 2 =	<u>120</u>	FAC species	<u>25</u>		x 3 =	<u>75</u>	FACU species	<u>15</u>		x 4 =	<u>60</u>	UPL species	<u>0</u>		x 5 =	<u>0</u>	Column Totals:	<u>100</u>	<u>(A)</u>		<u>255</u> (B)	Prevalence Index = B/A = <u>2.550</u>				
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<b>Herb Stratum (Plot size: <u>5ft x 5ft</u> )</b>																																													
1. <u>Schedonorus arundinaceus</u>	<u>15</u>	<u>N</u>	<u>15.0</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																								
2. <u>Agrostis stolonifera</u>	<u>10</u>	<u>N</u>	<u>10.0</u>	<u>FAC</u>																																									
3. <u>Dactylis glomerata</u>	<u>15</u>	<u>N</u>	<u>15.0</u>	<u>FACU</u>																																									
4. <u>Phalaris arundinacea</u>	<u>60</u>	<u>Y</u>	<u>60.0</u>	<u>FACW</u>																																									
5. _____	_____	_____	_____	_____																																									
6. _____	_____	_____	_____	_____																																									
7. _____	_____	_____	_____	_____																																									
8. _____	_____	_____	_____	_____																																									
9. _____	_____	_____	_____	_____																																									
10. _____	_____	_____	_____	_____																																									
11. _____	_____	_____	_____	_____																																									
_____ = Total Cover																																													
<b>Woody Vine Stratum (Plot size: _____ )</b>																																													
1. _____	_____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> <input checked="" type="radio"/> Yes <input type="radio"/> No																																								
2. _____	_____	_____	_____	_____																																									
_____ = Total Cover																																													
% Bare Ground in Herb Stratum <u>0</u>																																													
Remarks: _____																																													

**SOIL**

Sampling Point: DP2

**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 <sup>1</sup>	Loc <sup>2</sup>			
0-14	10YR	4/2	100				SILT LOAM		
14-18	10Y	4/2	85	10YR	4/6	5	C	M	SILT LOAM
	---			10YR	5/2	10	D	M	

<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)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)  
 Red Parent Material (TF2)  
 Very Shallow Dark Surface (TF12)  
 Other (Explain in Remarks)

<sup>3</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:  
 located near the wetland boundary but hydric soil characteristics are a little too deep.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP3  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: PEM

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

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

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

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>5ft x 5ft</u> )					
1. <u>Rubus armeniacus</u>	15	Y	100.0		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
Herb Stratum (Plot size: <u>5ft x 5ft</u> )					
1. <u>Phalaris arundinacea</u>	50	Y	58.8	FACW	
2. <u>Agrostis stolonifera</u>	35	Y	41.2	FAC	
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____ )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>0</u>					

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

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**Prevalence Index worksheet:**

	Total % Cover of:		Multiply by:	
OBL species	0		x 1 =	0
FACW species	50		x 2 =	100
FAC species	35		x 3 =	105
FACU species	0		x 4 =	0
UPL species	0		x 5 =	0
Column Totals:	85	(A)		205 (B)
Prevalence Index = B/A =				<u>2.412</u>

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - 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.

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**Hydrophytic Vegetation Present?**  Yes  No

Remarks:

**SOIL**

Sampling Point: DP3

**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 <sup>1</sup>	Loc <sup>2</sup>				
0-18	10YR	4/2	100	10YR	4/6	30	c	m	SILT LOAM	

<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.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</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:  
located near the wetland boundary but hydric soil characteristics are a little too deep.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, 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 (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP4  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: UPLAND FIELD

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? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks:	

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
				= Total Cover	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>5ft x 5ft</u> )					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
				= Total Cover	
<b>Herb Stratum</b> (Plot size: <u>5ft x 5ft</u> )					
1. <u>Phalaris arundinacea</u>	100	Y	100.0	FACW	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
6. _____	_____	_____	_____	_____	
7. _____	_____	_____	_____	_____	
8. _____	_____	_____	_____	_____	
9. _____	_____	_____	_____	_____	
10. _____	_____	_____	_____	_____	
11. _____	_____	_____	_____	_____	
				100 = Total Cover	
<b>Woody Vine Stratum</b> (Plot size: _____ )					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
				= Total Cover	
% Bare Ground in Herb Stratum	0				

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

	Total % Cover of:		Multiply by:	
OBL species	0		x 1 =	0
FACW species	100		x 2 =	200
FAC species	0		x 3 =	0
FACU species	0		x 4 =	0
UPL species	0		x 5 =	0
Column Totals:	100	(A)		200 (B)
Prevalence Index = B/A =				<u>2.000</u>

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - 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.

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**Hydrophytic Vegetation Present?**  Yes  No

Remarks:

**SOIL**

Sampling Point: DP4

**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 <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR	4/2	100				SILT LOAM	
	---							

<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.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>

<p><b>Restrictive Layer (if present):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
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Remarks:  
located near the wetland boundary but hydric soil characteristics are a little too deep.

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (2 or more required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p><b>Field Observations:</b></p> Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No      Depth (inches): _____ Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No        Depth (inches): _____ (includes capillary fringe)	<p><b>Wetland Hydrology Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP5  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: PEM

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

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

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

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																																									
1. _____	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																								
2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
_____	_____	_____	_____	_____																																									
_____ = Total Cover																																													
<b>Sapling/Shrub Stratum (Plot size: <u>5ft x 5ft</u> )</b>																																													
1. _____	_____	_____	_____	_____	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:20%;">Total % Cover of:</td> <td style="width:20%;"></td> <td style="width:20%;">Multiply by:</td> <td style="width:20%;"></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td>x 1 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>100</u></td> <td>x 2 =</td> <td align="center"><u>200</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>0</u></td> <td>x 3 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>0</u></td> <td>x 4 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>0</u></td> <td>x 5 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>100</u></td> <td>(A)</td> <td align="center"><u>200</u></td> <td>(B)</td> </tr> <tr> <td colspan="5" style="text-align: center;">Prevalence Index = B/A = <u>2.000</u></td> </tr> </table>		Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>		FACW species	<u>100</u>	x 2 =	<u>200</u>		FAC species	<u>0</u>	x 3 =	<u>0</u>		FACU species	<u>0</u>	x 4 =	<u>0</u>		UPL species	<u>0</u>	x 5 =	<u>0</u>		Column Totals:	<u>100</u>	(A)	<u>200</u>	(B)	Prevalence Index = B/A = <u>2.000</u>				
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2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
5. _____	_____	_____	_____	_____																																									
_____ = Total Cover																																													
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1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>Y</u>	<u>100.0</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																								
2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
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6. _____	_____	_____	_____	_____																																									
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9. _____	_____	_____	_____	_____																																									
10. _____	_____	_____	_____	_____																																									
11. _____	_____	_____	_____	_____																																									
_____ = Total Cover																																													
<b>Woody Vine Stratum (Plot size: _____ )</b>																																													
1. _____	_____	_____	_____	_____																																									
2. _____	_____	_____	_____	_____																																									
_____ = Total Cover																																													
% Bare Ground in Herb Stratum <u>0</u>																																													
Remarks:																																													



**SOIL**

Sampling Point: DP5

**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 <sup>1</sup>	Loc <sup>2</sup>				
0-18	10YR	4/2	100	10YR	5/1	30	D	M	SILT LOAM	
				10YR	4/6	10	C	M		
	---									

<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"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input checked="" type="checkbox"/> Redox Depressions (F8)	

<sup>3</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:  
located near the wetland boundary but hydric soil characteristics are a little too deep.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP6  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: UPLAND FIELD

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? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks:	

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
				= Total Cover	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>5ft x 5ft</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
				= Total Cover	
<b>Herb Stratum</b> (Plot size: <u>5ft x 5ft</u> )					
1. <u>Schedonorus arundinaceus</u>	20	Y	20.0	FAC	
2. <u>Dactylis glomerata</u>	60	Y	60.0	FACW	
3. <u>Agrostis stolonifera</u>	20	Y	20.0	FAC	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
				100 = Total Cover	
<b>Woody Vine Stratum</b> (Plot size: _____ )					
1. _____					
2. _____					
				= Total Cover	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks:					

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

	Total % Cover of:		Multiply by:	
OBL species	0		x 1 =	0
FACW species	60		x 2 =	120
FAC species	40		x 3 =	120
FACU species	0		x 4 =	0
UPL species	0		x 5 =	0
Column Totals:	100	(A)		240 (B)
				Prevalence Index = B/A = <u>2.400</u>

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - 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.

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**Hydrophytic Vegetation Present?**  Yes  No

**SOIL**

Sampling Point: DP6

**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 <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR	4/2	100				SILT LOAM	
	---							

<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.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>

<p><b>Restrictive Layer (if present):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
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Remarks:  
located near the wetland boundary but hydric soil characteristics are a little too deep.

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (2 or more required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p><b>Field Observations:</b></p> Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No      Depth (inches): _____ Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No        Depth (inches): _____ (includes capillary fringe)	<p><b>Wetland Hydrology Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP7  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: PEM

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

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

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

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																																									
1. _____	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																								
2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
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_____ = Total Cover					<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:20%;">Total % Cover of:</td> <td style="width:20%;"></td> <td style="width:20%;">Multiply by:</td> <td style="width:20%;"></td> </tr> <tr> <td>OBL species</td> <td align="center">0</td> <td></td> <td>x 1 =</td> <td align="center">0</td> </tr> <tr> <td>FACW species</td> <td align="center">60</td> <td></td> <td>x 2 =</td> <td align="center">120</td> </tr> <tr> <td>FAC species</td> <td align="center">25</td> <td></td> <td>x 3 =</td> <td align="center">75</td> </tr> <tr> <td>FACU species</td> <td align="center">15</td> <td></td> <td>x 4 =</td> <td align="center">60</td> </tr> <tr> <td>UPL species</td> <td align="center">0</td> <td></td> <td>x 5 =</td> <td align="center">0</td> </tr> <tr> <td>Column Totals:</td> <td align="center">100</td> <td align="center">(A)</td> <td></td> <td align="center">255 (B)</td> </tr> <tr> <td colspan="5" style="text-align: right;">Prevalence Index = B/A = <u>2.550</u></td> </tr> </table>		Total % Cover of:		Multiply by:		OBL species	0		x 1 =	0	FACW species	60		x 2 =	120	FAC species	25		x 3 =	75	FACU species	15		x 4 =	60	UPL species	0		x 5 =	0	Column Totals:	100	(A)		255 (B)	Prevalence Index = B/A = <u>2.550</u>				
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<b>Sapling/Shrub Stratum (Plot size: <u>5ft x 5ft</u> )</b> 1. _____ #N/A 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover																																													
<b>Herb Stratum (Plot size: <u>5ft x 5ft</u> )</b> 1. <u>Agrostis stolonifera</u> 20 Y 20.0 FAC 2. _____ 3. _____ 4. <u>Lolium perenne</u> 5 N 5.0 FAC 5. <u>Phalaris arundinacea</u> 60 Y 60.0 FACW 6. <u>Dactylis glomerata</u> 15 N 15.0 FACU 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ 100 = Total Cover																																													
<b>Woody Vine Stratum (Plot size: _____ )</b> 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>0</u>																																													
Remarks: _____																																													

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation  
 2 - Dominance Test is >50%  
 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 5 - 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  No

**SOIL**

Sampling Point: DP7

**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 <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	4/2	100					SILT LOAM	
6-12	10YR	4/1	60	10YR	3/6	40	C	M	SILT LOAM
	---								

<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"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input checked="" type="checkbox"/> Redox Depressions (F8)	

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

<sup>3</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:  
located near the wetland boundary but hydric soil characteristics are a little too deep.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Field Observations:**

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

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

Remarks:

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP8  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: UPLAND FIELD

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? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks: _____ _____ _____	

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>5ft x 5ft</u> )					#N/A
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
_____ = Total Cover					
Herb Stratum (Plot size: <u>5ft x 5ft</u> )					
1. <u>Agrostis stolonifera</u>	20	Y	20.0	FAC	
2. <u>Holcus lanatus</u>	5	N	5.0	FACW	
3. <u>Cirsium arvense</u>	10	N	10.0	FAC	
4. <u>Ranunculus repens</u>	30	Y	30.0	FAC	
5. <u>Phalaris arundinacea</u>	30	Y	30.0	FACW	
6. <u>Dactylis glomerata</u>	5	N	5.0	FACU	
7. _____	_____	_____	_____	_____	
8. _____	_____	_____	_____	_____	
9. _____	_____	_____	_____	_____	
10. _____	_____	_____	_____	_____	
11. _____	_____	_____	_____	_____	
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____ )					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>0</u>					

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

	Total % Cover of:		Multiply by:	
OBL species	0		x 1 =	0
FACW species	35		x 2 =	70
FAC species	60		x 3 =	180
FACU species	5		x 4 =	20
UPL species	0		x 5 =	0
Column Totals:	100	(A)		270 (B)
Prevalence Index = B/A =				<u>2.700</u>

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - 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.

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**Hydrophytic Vegetation Present?**  Yes  No

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**SOIL**

Sampling Point: DP8

**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 <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR	4/2	100				SILT LOAM	
	---							

<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.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>

<p><b>Restrictive Layer (if present):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
--	--

Remarks:  
located near the wetland boundary but hydric soil characteristics are a little too deep.

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (2 or more required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p><b>Field Observations:</b></p> Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No      Depth (inches): _____ Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No        Depth (inches): _____ (includes capillary fringe)	<p><b>Wetland Hydrology Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP9  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: PEM

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

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

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

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																																									
1. _____	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																								
2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
_____	_____	_____	_____	_____																																									
= Total Cover																																													
<b>Sapling/Shrub Stratum</b> (Plot size: <u>5ft x 5ft</u> )					<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:20%;">Total % Cover of:</td> <td style="width:10%;"></td> <td style="width:10%;">Multiply by:</td> <td style="width:30%;"></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td></td> <td>x 1 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>80</u></td> <td></td> <td>x 2 =</td> <td align="center"><u>160</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>20</u></td> <td></td> <td>x 3 =</td> <td align="center"><u>60</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>0</u></td> <td></td> <td>x 4 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>0</u></td> <td></td> <td>x 5 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>100</u></td> <td align="center">(A)</td> <td></td> <td align="center"><u>220</u> (B)</td> </tr> <tr> <td colspan="5" style="text-align: right;">Prevalence Index = B/A = <u>2.200</u></td> </tr> </table>		Total % Cover of:		Multiply by:		OBL species	<u>0</u>		x 1 =	<u>0</u>	FACW species	<u>80</u>		x 2 =	<u>160</u>	FAC species	<u>20</u>		x 3 =	<u>60</u>	FACU species	<u>0</u>		x 4 =	<u>0</u>	UPL species	<u>0</u>		x 5 =	<u>0</u>	Column Totals:	<u>100</u>	(A)		<u>220</u> (B)	Prevalence Index = B/A = <u>2.200</u>				
	Total % Cover of:		Multiply by:																																										
OBL species	<u>0</u>		x 1 =	<u>0</u>																																									
FACW species	<u>80</u>		x 2 =	<u>160</u>																																									
FAC species	<u>20</u>		x 3 =	<u>60</u>																																									
FACU species	<u>0</u>		x 4 =	<u>0</u>																																									
UPL species	<u>0</u>		x 5 =	<u>0</u>																																									
Column Totals:	<u>100</u>	(A)		<u>220</u> (B)																																									
Prevalence Index = B/A = <u>2.200</u>																																													
1. _____				#N/A																																									
2. _____																																													
3. _____																																													
4. _____																																													
5. _____																																													
= Total Cover																																													
<b>Herb Stratum</b> (Plot size: <u>5ft x 5ft</u> )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																								
1. <u>Phalaris arundinacea</u>	<u>30</u>	<u>Y</u>	<u>30.0</u>	<u>FACW</u>																																									
2. <u>Ranunculus repens</u>	<u>50</u>	<u>Y</u>	<u>50.0</u>	<u>FACW</u>																																									
3. <u>Agrostis stolonifera</u>	<u>20</u>	<u>Y</u>	<u>20.0</u>	<u>FAC</u>																																									
4. _____																																													
5. _____																																													
6. _____																																													
7. _____																																													
8. _____																																													
9. _____																																													
10. _____																																													
11. _____																																													
= Total Cover																																													
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> <input checked="" type="radio"/> Yes <input type="radio"/> No																																								
1. _____																																													
2. _____																																													
= Total Cover																																													
% Bare Ground in Herb Stratum <u>0</u>																																													
Remarks: _____																																													



**SOIL**

Sampling Point: DP9

**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 <sup>1</sup>	Loc <sup>2</sup>				
0-18	10YR	5/1	70	10YR	3/6	30	C	M	SILT LOAM	
	---									

<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.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input checked="" type="checkbox"/> Redox Depressions (F8)	<p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>

<p><b>Restrictive Layer (if present):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      <input checked="" type="radio"/> Yes      <input type="radio"/> No</p>
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Remarks:  
located near the wetland boundary but hydric soil characteristics are a little too deep.

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (2 or more required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input checked="" type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p><b>Field Observations:</b></p> Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No      Depth (inches): _____ Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No        Depth (inches): _____ (includes capillary fringe)	<p><b>Wetland Hydrology Present?</b>      <input checked="" type="radio"/> Yes      <input type="radio"/> No</p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Parcel 3626069037 City/County: King Sampling Date: 12/14/2018  
 Applicant/Owner: Oxbow Farms State: WA Sampling Point: DP10  
 Investigator(s): T.OPOLKA Section, Township, Range: 27/26/7  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <2  
 Subregion (LRR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Nooksack silt loam NWI Classification: UPLAND FIELD

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? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks:	

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

Tree Stratum (Plot size: <u>15ft x 15ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																																																	
1. _____	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																																
2. _____	_____	_____	_____	_____																																																	
3. _____	_____	_____	_____	_____																																																	
4. _____	_____	_____	_____	_____																																																	
_____	_____	_____	_____	_____																																																	
_____ = Total Cover																																																					
<b>Sapling/Shrub Stratum (Plot size: <u>5ft x 5ft</u> )</b>																																																					
1. _____	_____	_____	_____	_____	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:20%;">Total % Cover of:</td> <td style="width:10%;"></td> <td style="width:10%;">Multiply by:</td> <td style="width:10%;"></td> <td style="width:10%;"></td> </tr> <tr> <td>OBL species</td> <td align="center">0</td> <td></td> <td>x 1 =</td> <td align="center">0</td> <td></td> </tr> <tr> <td>FACW species</td> <td align="center">50</td> <td></td> <td>x 2 =</td> <td align="center">100</td> <td></td> </tr> <tr> <td>FAC species</td> <td align="center">50</td> <td></td> <td>x 3 =</td> <td align="center">150</td> <td></td> </tr> <tr> <td>FACU species</td> <td align="center">0</td> <td></td> <td>x 4 =</td> <td align="center">0</td> <td></td> </tr> <tr> <td>UPL species</td> <td align="center">0</td> <td></td> <td>x 5 =</td> <td align="center">0</td> <td></td> </tr> <tr> <td>Column Totals:</td> <td align="center">100</td> <td align="center">(A)</td> <td></td> <td align="center">250</td> <td align="center">(B)</td> </tr> <tr> <td colspan="6" style="text-align: right;">Prevalence Index = B/A = <u>2.500</u></td> </tr> </table>		Total % Cover of:		Multiply by:			OBL species	0		x 1 =	0		FACW species	50		x 2 =	100		FAC species	50		x 3 =	150		FACU species	0		x 4 =	0		UPL species	0		x 5 =	0		Column Totals:	100	(A)		250	(B)	Prevalence Index = B/A = <u>2.500</u>					
	Total % Cover of:		Multiply by:																																																		
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2. _____	_____	_____	_____	_____																																																	
3. _____	_____	_____	_____	_____																																																	
4. _____	_____	_____	_____	_____																																																	
5. _____	_____	_____	_____	_____																																																	
_____ = Total Cover																																																					
<b>Herb Stratum (Plot size: <u>5ft x 5ft</u> )</b>																																																					
1. <u>Agrostis stolonifera</u>	50	Y	50.0	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																
2. <u>Schedonorus arundinaceus</u>	50	Y	50.0	FACW																																																	
3. _____	_____	_____	_____	_____																																																	
4. _____	_____	_____	_____	_____																																																	
5. _____	_____	_____	_____	_____																																																	
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7. _____	_____	_____	_____	_____																																																	
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9. _____	_____	_____	_____	_____																																																	
10. _____	_____	_____	_____	_____																																																	
11. _____	_____	_____	_____	_____																																																	
100 = Total Cover																																																					
<b>Woody Vine Stratum (Plot size: _____ )</b>																																																					
1. _____	_____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> <input checked="" type="radio"/> Yes <input type="radio"/> No																																																
2. _____	_____	_____	_____	_____																																																	
_____ = Total Cover																																																					
% Bare Ground in Herb Stratum <u>0</u>																																																					
Remarks:																																																					

**SOIL**

Sampling Point: DP10

**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 <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR	4/2	100				SILT LOAM	
	---							

<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.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>

<p><b>Restrictive Layer (if present):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
--	--

Remarks:  
located near the wetland boundary but hydric soil characteristics are a little too deep.

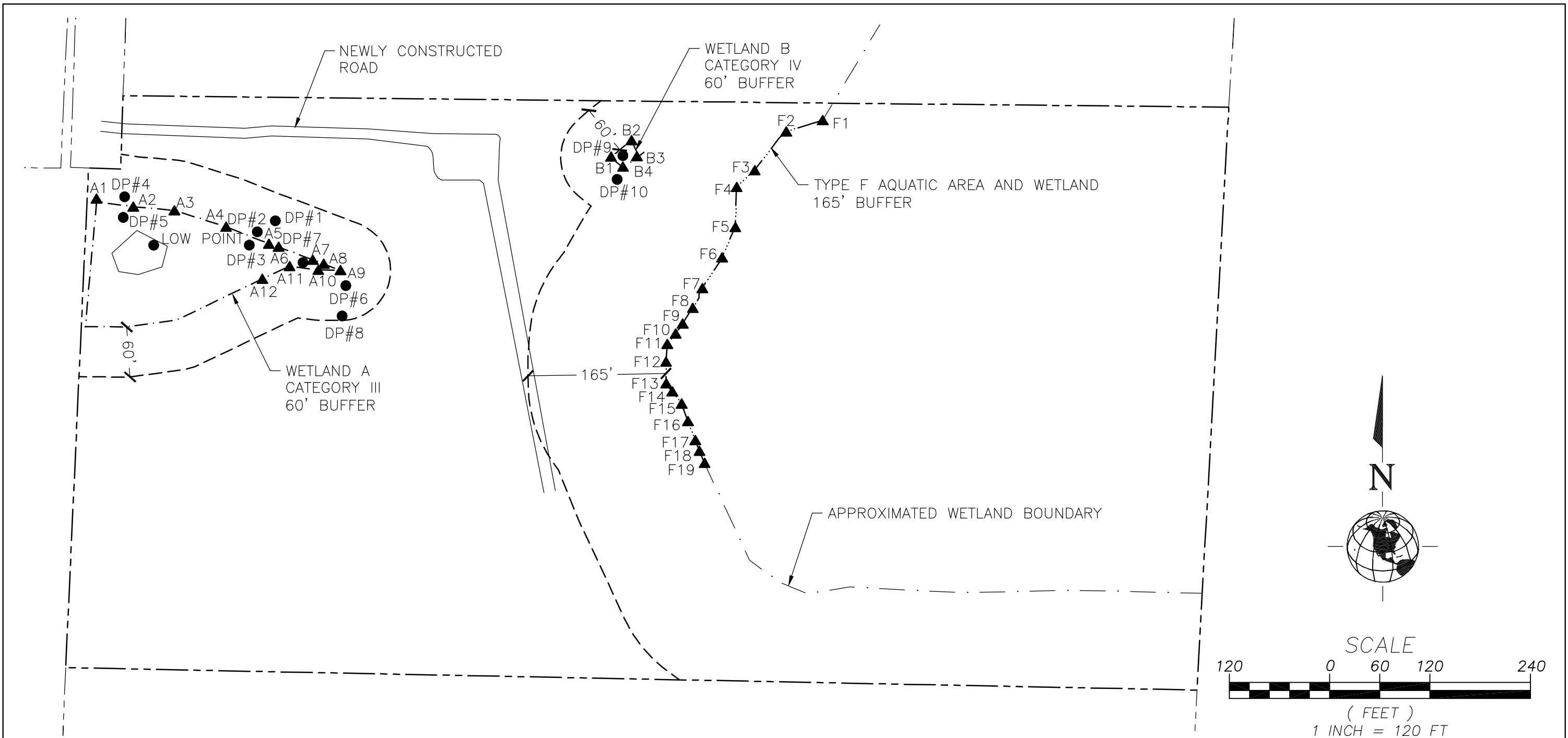
**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (2 or more required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p><b>Field Observations:</b></p> Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ (includes capillary fringe)	<p><b>Wetland Hydrology Present?</b>      <input type="radio"/> Yes      <input checked="" type="radio"/> No</p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



### LEGEND

- PROPERTY LINE
- OFFSITE PROPERTY LINE
- . - . - . WETLAND BOUNDARY
- -- -- APPROXIMATED WETLAND BOUNDARY
- ..... TYPE F AQUATIC AREA (AQUATIC AREA BUFFER IS LARGER THAN THE WETLAND BUFFER)
- STANDARD WETLAND/STREAM BUFFER
- ▲ A# WETLAND/STREAM FLAGS
- DP# DATA POINT LOCATION

### NOTES

1. THE MAPPING SHOWN IS BASED ON A HANDHELD GPS: ACCURACY VARIES. IF PRECISE LOCATIONS ARE REQUIRED, SURVEY WILL BE NECESSARY.

<b>AQUATICA</b> ENVIRONMENTAL CONSULTING, LLC <small>P.O. BOX 308 DUVALL, WA 98019</small>	EXISTING CONDITIONS OXBOW PROPERTY PARCEL 3626069037 KING COUNTY, WA		<small>DRAWN BY</small> KG	<small>CHECKED BY</small> TO
	<small>SCALE</small> AS NOTED		<small>DATE</small> 04.15.20	
	<small>PROJECT NO.</small>		18-322	
	<small>FIGURE</small> 1		<small>OF</small> 1	