

**WETLAND AND STREAM DELINEATION REPORT**

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24<sup>th</sup> Street Southeast Extension

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# WETLAND AND STREAM DELINEATION REPORT

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## 24<sup>TH</sup> STREET SOUTHEAST EXTENSION

### 1 EXECUTIVE SUMMARY

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A wetland and stream delineation study was previously conducted on undeveloped land within the City of Lake Stevens for a new road construction project. This report has been provided to confirm the boundaries of that previous wetland and stream delineation, as well as to classify wetlands according to the updated 2014 Wetland Rating System for Western Washington.

Flags from the previous delineation studies remaining onsite allowed us to confirm the accuracy of the wetland boundaries. Most of the wetlands are located at the bases of slopes that define the wetland boundaries and are therefore topographically confined and not likely to change over time. Wetlands A, D, E, F, and H have boundaries that were found to be unchanged. A previously delineated wetland, Wetland I, does not meet wetland criteria, and should not be considered a wetland for regulatory purposes. One additional wetland, Wetland J, was identified and flagged onsite. Observations of flagging from the previous delineation indicate the Mosher Creek ordinary high water mark has not changed since the previous delineation.

### 2 INTRODUCTION

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#### 2.1 Purpose

The City of Lake Stevens (City) is proposing to add an extension to 24<sup>th</sup> Street Southeast through primarily undeveloped land. Wetlands within the preliminary road alignment were previously delineated by Altmann Oliver Associates, LLC and were classified in a wetland rating system that has become obsolete. The purpose of this report is to verify the accuracy of delineated wetland boundaries, delineate wetlands that may have been missed, and reclassify wetlands according to the updated 2014 Wetland Rating System.

## 2.2 Study Area / Location Map

The study area includes the footprint of the proposed roadway and detention pond located near the intersection of State Route 9 and 20<sup>th</sup> Street Southeast in the City of Lake Stevens, Washington (Figure 1).

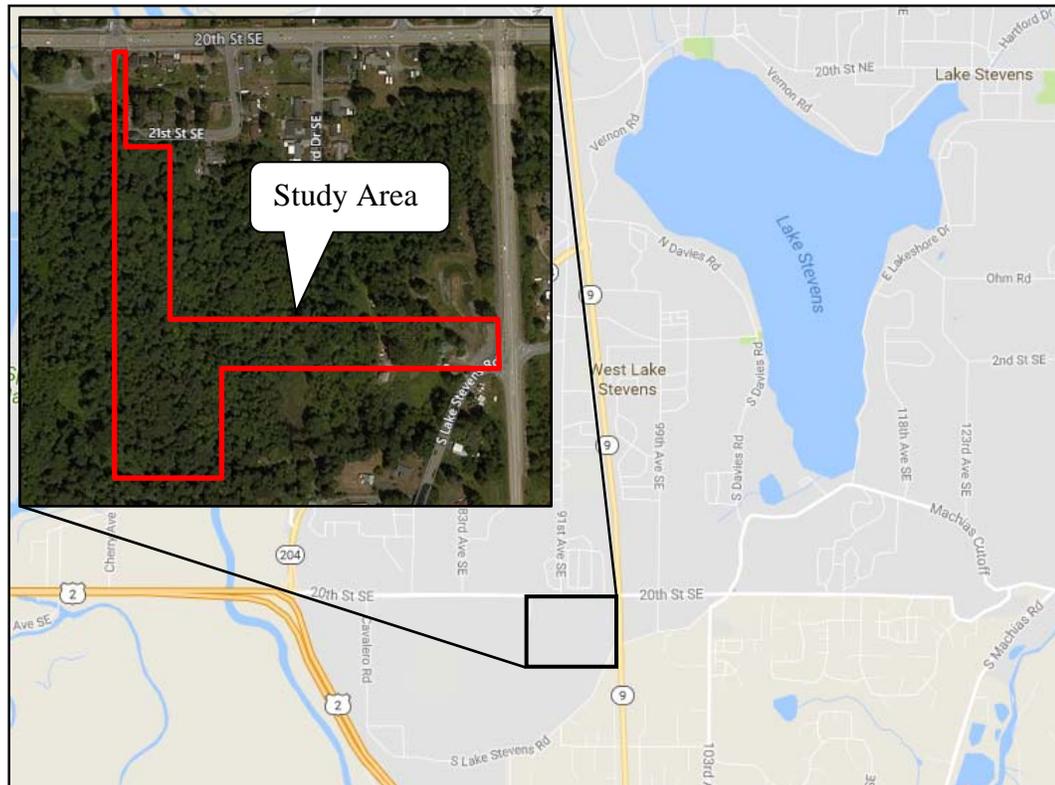


Figure 1. Study area and vicinity map.

# 3 METHODS

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## 3.1 Public Domain Information

Public-domain information on the subject properties was reviewed for this delineation study and included the following:

- USDA Natural Resources Conservation Service, Web Soil Survey (WSS) application
- U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps
- Washington Department of Fish and Wildlife interactive mapping programs (PHS on the Web, SalmonScape)

- Washington Department of Natural Resources, Forest Practices Application Mapping Tool (FPARS)
- Washington Department of Natural Resources, Wetlands of High Conservation Value Map Viewer
- Snohomish County PDS Web Map
- City of Lake Stevens maps

## 3.2 Wetlands

The study area was evaluated for wetlands using methodology from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (Regional Supplement) (US Army Corps of Engineers [Corps] May 2010). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Regional Supplement were determined to be wetland. Soil, vegetation, and hydrologic parameters were sampled at several locations in the study area to make the determination. Wetland data were recorded in locations where the findings of this study conflict with the findings of the previous study.

Identified wetlands within the study area were classified using the *2014 Update to the Western Washington Wetland Rating System* (Publication #14-06-029) (Rating System).

Characterization of climatic conditions for precipitation was determined using the WETS table methodology from the USDA NRCS document Part 650 Engineering Field Handbook, National Engineering Handbook, Hydrology Tools for Wetland Identification and Analysis, Chapter 19 (September 2015). The Seattle-Tacoma International AP station as recorded by NOAA (<http://agacis.rcc-acis.org/>) was used as a source for precipitation data. The WETS table methodology uses climate data from the three months prior to the site visit month to determine if normal conditions are present.

## 3.3 Streams

The study area was also evaluated for streams based on the presence or absence of an ordinary high water mark (OHWM) as defined by the Revised Code of Washington (RCW) 90.58.030 and the Washington Administrative Code (WAC) 220-660-030. The OHWM edge was located by examining the bed and bank physical characteristics and vegetation.

Onsite streams were classified using the stream typing system established by WAC 222-16-030, per City regulations.

# 4 FINDINGS

## 4.1 Site Information

The project site is located in sub-basins HUC 171100110203 and HUC 171100110103, within the Snohomish River Watershed Resource Inventory Area (WRIA 7); Township 29 North; Range 5 East; Section 25. Other than a residential property on the eastern boundary, the entire study area is within undeveloped forest land. Topography generally slopes from north to south, defining a southerly flow for streams within the study area. Wetlands were typically observed in topographic low points at the bases of mounds and hills.

As previously mentioned, public-domain information on the subject properties was reviewed for this study. A summary of findings is provided in Table 1.

Table 1. Summary of online mapping and inventory resources.

Resource	Summary
USDA Natural Resources Conservation Service, Web Soil Survey (WSS) application	Tokul gravelly medial loam, 0 to 8 and 8 to 15 percent slopes; Mukilteo muck
U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps	Freshwater Emergent Wetland, Freshwater Pond
Washington Department of Fish and Wildlife, Priority Habitats and Species (PHS on the Web)	Freshwater Emergent Wetland, Freshwater Pond
Washington Department of Fish and Wildlife, SalmonScape	No salmonids mapped near project site
Washington Department of Natural Resources, Forest Practices Application Mapping Tool (FPARS)	No mapped streams in study area
Snohomish County PDS Web Map	Mosher Creek (Unknown Stream Type), Mapped Wetlands
City of Lake Stevens maps	Mosher Creek, Mapped Wetlands

## 4.2 Wetlands

### 4.2.1 Wetland A

Wetland A is a riverine wetland associated with Mosher Creek on the western edge of the study area. Flagging from the previous delineation was still present during the site visit at the correct wetland boundary, indicating that the wetland area has not changed since the previous delineation.

Cowardin vegetation classifications in the wetland include palustrine scrub-shrub and forested. The forested area consists of western red cedar and western hemlock with an understory of salmonberry, vine maple, sword fern, skunk cabbage, and false lily of the valley. Plants within the wetland meet the hydrophytic vegetation indicator Dominance Test.

Soils are black and have a high organic content composed of mineral or modified mucks. Hydrology is provided primarily by overbank flooding from Mosher Creek and associated hyporheic groundwater. Areas within the wetland were saturated and had a groundwater table at or near the surface at the time of the inspection.



Figure 2. Wetland vegetation including skunk cabbage in the Mosher Creek channel through Wetland A.

### 4.2.2 Wetland D

Wetland D is a depressional wetland near South Lake Stevens Road. Although former wetland delineation flags are no longer present at this wetland, previously mapped wetlands are consistent with what was observed in the field. The wetland edge is defined by an abrupt change in topography.

Cowardin vegetation classifications in the wetland include palustrine emergent, scrub-shrub, and forested. The forested area consists of black cottonwood, red alder, and Pacific willow with an understory of Himalayan blackberry, field horsetail, creeping buttercup, red-osier dogwood, and Douglas spiraea. Emergent areas were dominated by primarily field horsetail and reed canarygrass.

Wetland hydrology was evident from saturation observed during the site visit. The wetland drains east under South Lake Stevens Road through a culvert.



Figure 3. Fields of reed canarygrass and Douglas spiraea in Wetland D.

### 4.2.3 Wetland E

Wetland E is depressional wetland near the center of the study area that is primarily forested and includes a relatively large ponded area. Some flags from previous delineations were found near the wetland boundary in the correct

location, confirming the wetland boundary has not changed. The Wetland E boundary is defined by an abrupt change in topography and is unlikely to change over time.

Cowardin vegetation classifications include palustrine aquatic bed, scrub-shrub, and forested. The ponded area is entirely covered in yellow pond lily (*Nuphar Polysepala*). The forested community consists of black cottonwood, red alder, and Pacific willow with an understory of Sitka willow, salmonberry, Douglas spiraea, cattail, and reed canarygrass.

Soils are primarily black mineral with a high organic content and redoximorphic features near the surface. Hydrology was evident from inundation, saturation, and high water table observed at the time of the study.



Figure 4. Ponded area behind cattail and reed canarygrass at Wetland E.

#### **4.2.4 Wetland F**

Wetland F is a depressional wetland on the eastern part of the study area. Wetland delineation flags from former studies were found at the wetland boundary in the correct location, indicating that the boundary has not changed since previously surveyed. The wetland is located along an abrupt break in topography and its boundary is not likely to change over time.

Cowardin vegetation communities include palustrine scrub-shrub and forested. The forest community is dominated by black cottonwood, red alder, and Pacific willow with an understory of Sitka willow, salmonberry, Douglas spiraea, red-osier dogwood, skunk cabbage, and reed canarygrass.

Soils are black mineral with a high organic content and redoximorphic features near the surface. Wetland hydrology was evident from saturation and a high water table observed at the time of the study.



Figure 5. Looking east into a forested area of Wetland F with a dense shrub understory.

#### **4.2.5 Wetland H**

Wetland H is a slope and riverine wetland surrounding Mosher Creek. Remaining flags from a former delineation indicates that the boundary has not changed.

The Cowardin vegetative classifications for the wetland include palustrine scrub-shrub and forested. The forest community is dominated by western red cedar and red alder with an understory of salmonberry, vine maple, skunk cabbage, water parsley, sword fern, and lady fern.

Soils are black mineral with redox masked by high organic content. Wetland hydrology was evident from saturation and a high water table observed at the time of our study.



Figure 6. Close up of the wet area of Mosher Creek through Wetland H.

#### **4.2.6 Wetland I**

Nearly all Wetland I flags were found during field investigations, however, the previously delineated area did not meet technical wetland criteria. Data point DP-4 was recorded to document the lack of wetland conditions.

Dominant vegetation within the previously delineated boundary includes a combination of facultative plants (species equally likely to occur in wetlands and non-wetlands) and facultative upland plants (species that usually occur in non-wetlands). The area is forested with a canopy of western red cedar and black cottonwood and an understory dominated by vine maple, osoberry, salmonberry, sword fern, and false lily of the valley. The plant community marginally met the hydrophytic vegetation indicator Dominance Test, depending on the precise location. However, most of the dominant plants are ubiquitous across Western Washington and occur in wetlands and non-wetlands with equal frequency. Remaining dominant plants (sword fern, osoberry) are

generally associated with non-wetland areas. Devils club, spiny wood fern, and stink currant were also found sparsely throughout the flagged area.

Soil investigation included data collection at numerous sub-surface pits to determine if hydric soils were present. Of these pits, DP-4 was the most representative. Although tree and shrub roots are very dense in the area, making it difficult to penetrate the soil, pits were opened at various locations. Soils are dark (5YR 2.5/2 and 10YR 2/2) and lacked redoximorphic indicators for wetland soils.

No observations or indicators of wetland hydrology were found and soils were completely dry to a depth exceeding 18 inches in all observed pits, including the recorded data point DP-4.

Since the area previously flagged as Wetland I only marginally met the vegetation criterion, did not have hydric soils or wetland hydrology indicators, it does not meet the technical wetland criteria.



Figure 7. Typical vegetation community in Wetland I.

#### **4.2.7 Wetland J**

Wetland J was not included in the previous delineation. Wetland J is located within a remnant ditch or stream channel that has been impounded behind an old road crossing. The feature has steep, straight sides that appear to have been manually excavated. The wetland boundary was marked with pink and black

flagging. Although it meets wetland hydrology criteria, it showed no signs of flowing water such as scour or hydraulically sorted sediments.

The Cowardin vegetation classification for the wetland is palustrine forested, since many of the trees are rooted within the wetland area. Dominant plant species include red alder, lady fern, skunk cabbage, and salmonberry. The plant community meet the hydrophytic vegetation indicator Dominance Test.

Soils within the wetland have a dark top layer (10YR 2/2) over a layer with a depleted matrix and abundant redoximorphic iron concentrations. Soils were very moist but not saturated during the site visit but met secondary wetland hydrology indicators Water Stained Leaves (B9), Geomorphic Position (D2), and FAC-Neutral Test (D5).

While Wetland J appears to be located in an excavated or partially excavated, ditch-like feature, its historical status is not known, and the feature is not actively maintained as a stormwater conveyance. Therefore, Wetland J is likely regulated as a jurisdictional wetland.



Figure 8. Skunk cabbage growing in Wetland J.

### 4.3 Marginal Wetland Areas

The remnant stream channel or ditch of Wetland J continues on the other side of the old road in a small depression meeting wetland hydric soil and hydrology

indicators. Since this area is unvegetated, it does not meet wetland criteria. An old bridge across the feature has collapsed and soil has accumulated on top, filling the ditch and appearing to stop any flow moving from up-gradient areas.

#### 4.4 Non-wetland Areas

Non-wetland areas within the study area are forested on gently rolling hills upslope from wetland areas. Forests are dominated by Douglas-fir, western red cedar, and red alder with an understory of vine maple, salmonberry, sword fern, and osoberry. These areas generally lack hydric soil indicators and do not feature wetland hydrology indicators.

#### 4.5 Mosher Creek

Mosher Creek is a small stream flowing south through the study area. City maps indicate the stream ends when it intersects with South Lake Stevens Road, however, it is likely that it eventually drains into Ebey Slough. The stream was approximately 10 feet wide between ordinary high water marks and a few inches deep during the site visit. It was flowing within Wetland A but not Wetland H during field investigations. Mosher Creek is not depicted on most public stream inventories (SalmonScape, PHS Data, FPARS); it is depicted on Snohomish County's SnoScape as fish-bearing just downstream of the study area and "unknown" within the study area. However, Mosher Creek is presumed to be a fish-bearing stream in the study area due to its size, flow, gradient, and lack of barriers to fish passage.

#### 4.6 Local Regulations

Critical areas in Lake Stevens are regulated by Lake Stevens Municipal Code (LSMC) Chapter 14.88, Critical areas. **Notably, amendments to LSMC Chapter 14.88 are currently under consideration by the City Council. Proposed amendments in Ordinance No. 984 would set forth major changes to LSMC Chapter 14.88 that could impact the project.** The timeline for adoption of Ordinance No. 984 is unknown. This section includes a review of both current and proposed critical areas regulations.

##### 4.6.1 Buffers and Setbacks

Under both the current and proposed regulations, wetlands are rated as one of four categories based on the Rating System. Under the Rating System, Wetlands A, D, E, and H are classified as Category II and Wetlands F and J are classified as Category III.

Under the current regulations, wetland buffer widths are based on a combination of the wetland category, habitat score (a component of the rating system), and the adjacent land use intensity. Based upon the fact that a new road corridor will

be a high intensity land use, and that all wetlands have a moderate habitat score, Wetlands A, D, E, F, H, and J currently require a buffer of 95 feet.

Under the proposed regulations, wetland buffers are based on wetland category, habitat score, and buffer condition. The standard buffer width may be used when the buffer is vegetated or will be planted; otherwise, an increased buffer is required when limited vegetation exists or no mitigation is proposed to enhance buffer functions. Assuming use of the standard buffer width, Wetlands A, D, E, H and J would require a 165-foot buffer, and Wetland F would require a 105-foot buffer.

Stream buffers are determined based on the classification of the aquatic area. Mosher Creek meets the criteria of a Type F stream since it provides fish habitat. Under both the current and proposed regulations, Mosher Creek requires a 100-foot buffer.

It is noted that the City's current and proposed critical areas regulations also require that stream buffers within a ravine with banks greater than 10 feet extend 25 feet from the top of the ravine (LSMC 14.88.430[c][1]). Within the study area, Mosher Creek flows through areas with ravine-like characteristics, and non-ravine areas. However, the LSMC does not provide a definition for a ravine. The NRCS defines a ravine as "a small stream channel; narrow, steep-sided, commonly V-shaped in cross section and longer than a gully, cut in unconsolidated materials" (USDA NRCS 2017). The City's critical areas regulations state "Steep slopes shall include any slope greater than or equal to 40 percent" (LSMC 14.88.600[b][3][ii]). Slopes near Mosher Creek are estimated to be no more than 25 percent (based on estimates from Snohomish County PDS elevation contours). Since the area does not have steep slopes, it does not meet the geologic definition of a ravine. Therefore, LSMC 14.88.430(c)(1) is not applicable when considering buffers for the proposed project.

Wetland and stream buffers under both current and proposed critical area regulations are set forth below in Table 2.

Further, under both the current and proposed regulations, Lake Stevens requires a 10-foot building setback from the edges of all critical area buffers. Notably, building setbacks may contain impervious ground surfaces with specified drainage provisions (LSMC 14.88.285).

Table 2. Summary of wetland rating scores, classification and standard buffer widths under current and proposed critical areas regulations.

	Water Quality	Hydrologic	Habitat	Total	Category or Type	Standard Buffer Width under Current Code (feet) <sup>1</sup>	Standard Buffer Width under Proposed Code (feet) <sup>2</sup>
Wetland A	6	8	7	21	II	95	165
Wetland D	7	7	6	20	II	95	165
Wetland E	6	7	7	20	II	95	165
Wetland F	6	7	5	18	III	95	105
Wetland H	6	8	7	21	II	95	165
Wetland J	5	6	6	17	III	95	165
Mosher Creek	N/A	N/A	N/A	N/A	F	100	100

<sup>1</sup> Assumes high intensity adjacent land use

<sup>2</sup> Assumes buffer is vegetated or will be planted

#### 4.6.2 Avoidance and Minimization

Under both the current and proposed critical area regulations, a project proponent must make all reasonable efforts to avoid and minimize impacts to critical areas and buffers (LSMC 14.88.010[a]).

The proposed regulations include a table of measures (Table 14.88-III) intended to minimize impacts to wetlands that must be implemented if applicable to a specific proposal. This table is reproduced below for ease of reference.

Table 3. Required measures to minimize impacts to wetlands under proposed critical areas regulations.

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> <li>• Direct lights away from wetland</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Locate activity that generates noise away from wetland</li> </ul>

	<ul style="list-style-type: none"> <li>• If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source</li> <li>• For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10-foot heavily vegetated buffer strip immediately adjacent to the outer wetland buffer</li> </ul>
Toxic runoff	<ul style="list-style-type: none"> <li>• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered</li> <li>• Establish covenants limiting use of pesticides within 150-feet of wetland</li> <li>• Apply integrated pest management</li> </ul>
Stormwater runoff	<ul style="list-style-type: none"> <li>• Retrofit stormwater detention and treatment for roads and existing adjacent development</li> <li>• Prevent channelized flow from lawns that directly enters the buffer</li> <li>• Use Low Intensity Development techniques (for more information refer to the drainage ordinance and manual)</li> </ul>
Change in water regime	<ul style="list-style-type: none"> <li>• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns</li> </ul>
Pets and human disturbance	<ul style="list-style-type: none"> <li>• Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion</li> <li>• Place wetland and its buffer in a separate tract or protect with a conservation easement</li> </ul>
Dust	<ul style="list-style-type: none"> <li>• Use best management practices to control dust</li> </ul>

### 4.6.3 Allowed Activities and Uses

Under both the current and proposed critical area regulations, LSMC 14.88.220 sets forth activities that are allowed in all types of critical areas and/or their buffers, subject to certain conditions. Allowed activities that may be pertinent to the proposed road project are presented in the bulleted list below. These allowed activities are slightly different under the current and proposed regulations. Key differences between the current and proposed regulations are noted.

- Site investigative work necessary for land use application submittals, such as surveys, soil logs, percolation tests and other related activities (impacts must be minimized and disturbed areas must be immediately restored).
- Installation or construction of City road right-of-way; or installation, replacement, operation, repair, alteration, or relocation of all water, natural gas, cable communication, telephone, or other utility lines, pipes,

mains, equipment or appurtenances, not including substations or other buildings, only when required by the City and approved by the Planning and Community Development Director and when avoidance of critical areas and impact minimization has been addressed during the siting of roads and other utilities and a detailed report/mitigation plan is submitted, reviewed, and approved by the City prior to permit issuance or land use approval.

- Where buffers and setbacks are larger than 50 feet and slopes are less than 15 percent, stormwater management facilities, limited to stormwater dispersion outfalls and bioswales, may be allowed within the outer 25 percent of the buffer, when location of such facilities will not degrade the function or values of the wetland. Note that under the proposed regulations, the text prior to the word “dispersion” has been removed.

The current and proposed critical areas regulations also include allowances specific to wetlands and streams that may be pertinent to the proposed road project.

The current regulations allow the following uses in a wetland buffer (LSMC 14.88.830[e]):

- For Category III and IV wetlands, stormwater management facilities restricted to the outer 25 percent of the buffer around the wetland.
- For Category III and IV wetlands, development having no feasible alternative location.

The above wetland buffer allowances are not included in the proposed regulations. The proposed regulations include the following allowance specific to wetlands and buffers (LSMC 14.88.820[c]):

- Stormwater management facilities. A wetland or its buffer can be physically or hydrologically altered to meet the requirements of an LID, Runoff Treatment or Flow Control BMP if the following criteria are met:
  1. The location of the stormwater management facility is restricted to the outer 25 percent of the buffer around the wetland;
  2. There will be “no net loss” of functions and values of the wetland;
  3. The wetland does not contain a breeding population of any native amphibian species;
  4. The hydrologic functions of the wetland can be improved;
  5. The wetland lies in the natural routing of the runoff, and the discharge follows the natural routing, and

6. All regulations regarding stormwater and wetland management are followed, including but not limited to local and state wetland and stormwater codes, manuals, and permits;
7. Modifications that alter the structure of a wetland or its soils will require permits. Existing functions and values that are lost would have to be compensated/replaced.
8. Stormwater LID BMPs required as part of New and Redevelopment projects can be considered within wetlands and their buffers. However, these areas may contain features that render LID BMPs infeasible. A site-specific characterization is required to determine if an LID BMP is feasible at the project site.

#### 4.6.4 Buffer Modifications

Under both the current and proposed regulations, wetland and aquatic area buffers may be modified through buffer averaging. Buffers may be averaged when certain criteria are met; however, in no case may averaging reduce the buffer by more than 25 percent of the standard buffer width.

Also, under both the current and proposed codes, wetland buffers may be reduced by 25 percent when certain criteria are met; however, in no case may a reduction reduce the buffer by more than 25 percent of the standard buffer width.

#### 4.6.5 Direct Wetland Impacts

Direct impacts to wetland areas, including allowed impacts, require the following mitigation ratios, under both the current and proposed critical areas regulations (LSMC 14.88.840[f]). However, under the proposed regulations, the “Re-establishment or Creation (R/C) and Enhancement (E)” column has been removed.

Table 4. Wetland mitigation ratios (LMSC Table 14.88-IV).

Affected Wetland	Mitigation Type and Ratio			
Category	Re-establishment or Wetland Creation	Rehabilitation	Re-establishment or Creation (R/C) and Enhancement (E)	Enhancement Only

Category IV	1.5:1	3:1	1:1 R/C and 2:1 E	6:1
Category III	2:1	4:1	1:1 R/C and 2:1 E	8:1
Category II	3:1	6:1	1:1 R/C and 4:1 E	12:1
Category I – Forested	6:1	12:1	1:1 R/C and 10:1 E	24:1
Category I – Score Based	4:1	8:1	1:1 R/C and 10:1 E	16:1
Category I – Bog	Not considered possible	N/A	N/A	N/A

The proposed regulations also clarify that impacts to wetland buffers must be compensated for at a 1:1 ratio.

Finally, the proposed regulations explicitly allow the use of a mitigation bank or in-lieu fee mitigation program to provide mitigation (LSMC 14.88.276).

## 4.7 State and Federal Regulations

Wetlands are also regulated by the Corps under section 404 of the Clean Water Act. Any proposed filling or other direct impacts to Waters of the U.S., including wetlands (except isolated wetlands), would require notification and permits from the Corps. With the exception of Wetland J, none of the onsite wetlands appear to have characteristics of isolated wetlands. Wetland J may be considered isolated, as no surface water connection is present to any Waters of the U.S. in our opinion. A formal isolated status decision can be requested through the jurisdictional determination process.

Federally permitted actions that could affect endangered species may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. Compliance with the Endangered Species Act must be demonstrated for activities within jurisdictional wetlands and the 100-year floodplain. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology and a cultural resource study in accordance with Section 106 of the National Historic Preservation Act.

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

## 5 CONCLUSIONS

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This report documents the presence of six wetlands and one stream within the study area. The current road alignment will intersect with wetlands and wetland buffer, which will require mitigation complying with the City, and state and federal regulations.

The information contained in this report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state and federal regulatory authorities. No other warranty, expressed or implied, is made.

# REFERENCES

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Code Publishing Company. 2017. Lake Stevens Municipal Code. Available online at:  
<http://www.codepublishing.com/WA/LakeStevens/>.

Corps (US Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

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

Hruby, T. (2014). Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2017. National Soil Survey Handbook, Part 629. Available online at:  
[http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054242).

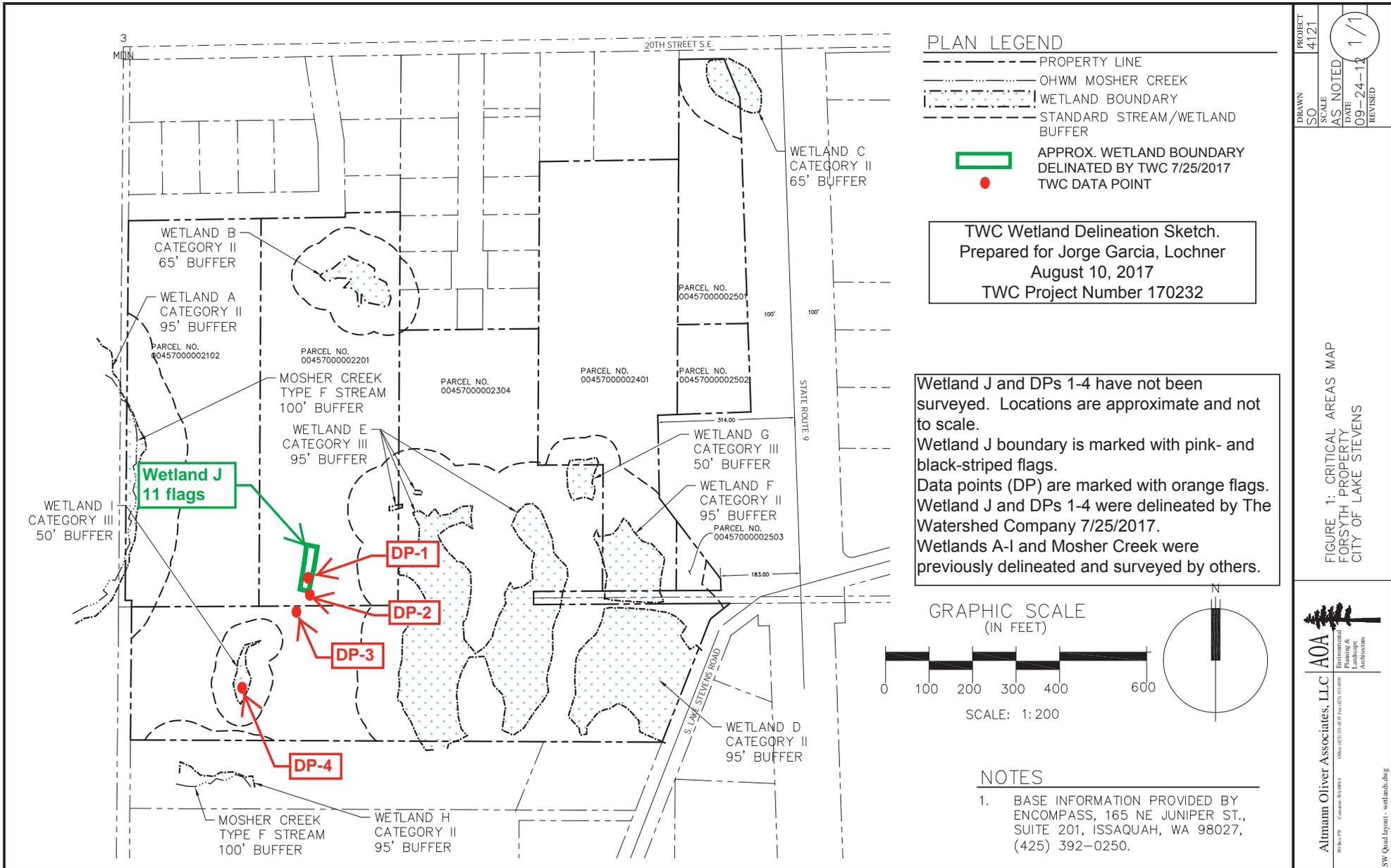
Washington State Office of the Code Reviser. 2017. Revised Code of Washington. Available online at: <http://apps.leg.wa.gov/rcw/>.

Washington State Office of the Code Reviser. 2017. Washington Administrative Code. Available online at: <http://apps.leg.wa.gov/wac/>.

**APPENDIX A**

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Wetland Delineation Field Sketch



PROJECT	4121
SCALE	AS NOTED
DATE	09-24-17
REVISED	1/1

FIGURE 1: CRITICAL AREAS MAP  
FORSYTH PROPERTY  
CITY OF LAKE STEVENS

**AOA**  
Altmann Oliver Associates, LLC  
Environmental  
Planning &  
Architecture  
10100 5th - Camas, WA 98604 - (360) 425-3333 FAX (360) 534-8040

SW Quad layout - wetlands.dwg

**APPENDIX B**

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Wetland Determination Data Forms



**WETLAND DETERMINATION DATA FORM**  
 Western Mountains, Valleys, and Coast Supplement to the  
 1987 COE Wetlands Delineation Manual

750 Sixth Street South  
 Kirkland, Washington 98033  
 (425) 822-5242  
 watershedco.com

**DP- 1**

Project Site: <b>LK Stevens 24th St SE</b>		Sampling Date: <b>7/25/2017</b>
Applicant/Owner: <b>City of Lake Stevens</b>		Sampling Point: <b>DP- 1</b>
Investigator: <b>R. Kahlo, S. Payne</b>		City/County: <b>City of Lake Stevens</b>
Sect., Township, Range: <b>S 25 T 29 N R 5 E</b>		State: <b>WA</b>
Landform (hillslope, terrace, etc): <b>Swale</b>	Slope (%): <b>0</b>	Local relief (concave, convex, none): <b>Concave</b>
Subregion (LRR): <b>A</b>	Lat:	Long:
Soil Map Unit Name: <b>Tokul gravelly medial loam, 0 to 8 percent slopes</b>		NWI classification: <b>None</b>
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
(If needed, explain any answers in Remarks.)		

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

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

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

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <b><i>Alnus rubra</i></b>	<b>50</b>	<b>Y</b>	<b>FAC</b>	Number of Dominant Species that are OBL, FACW, or FAC:	<b>2</b> (A)
2.				Total Number of Dominant Species Across All Strata:	<b>2</b> (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	<b>100</b> (A/B)
4.	<b>50</b>	= Total Cover			
Sapling/Shrub Stratum (Plot size: 3m diam.)				Prevalence Index Worksheet	
1.				Total % Cover of	
2.				OBL species	x 1 =
3.				FACW species	x 2 =
4.				FAC species	x 3 =
5.				FACU species	x 4 =
	<b>0</b>	= Total Cover		UPL species	x 5 =
				Column totals	(A) (B)
Herb Stratum (Plot size: 1m diam.)				Prevalence Index = B / A =	
1. <b><i>Lysichiton americanus</i></b>	<b>10</b>	<b>Y</b>	<b>OBL</b>		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
	<b>10</b>	= Total Cover			
Woody Vine Stratum (Plot size: )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.					
2.					
	<b>0</b>	= Total Cover			
% Bare Ground in Herb Stratum: 90					
Remarks:					

**SOIL**

**Sampling Point – DP-1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/2	100					Silt loam	
5-12	2.5Y 5/2	80	10YR 4/6	20	C	M	Gravelly silty loam	

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

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

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

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

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

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

Restrictive Layer (if present): Type: Depth (inches):	<b>Hydric soil present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

<input checked="" type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2, 4A &amp; 4B</b> )
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" 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) ( <b>LRR A</b> )
<input type="checkbox"/> Frost-Heave Hummocks

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

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

Remarks:



**WETLAND DETERMINATION DATA FORM**  
 Western Mountains, Valleys, and Coast Supplement to the  
 1987 COE Wetlands Delineation Manual

750 Sixth Street South  
 Kirkland, Washington 98033  
 (425) 822-5242  
 watershedco.com

**DP- 2**

Project Site: <b>LK Stevens 24th St SE</b>		Sampling Date: <b>7/25/2017</b>
Applicant/Owner: <b>City of Lake Stevens</b>		Sampling Point: <b>DP- 2</b>
Investigator: <b>R. Kahlo, S. Payne</b>		City/County: <b>City of Lake Stevens</b>
Sect., Township, Range: <b>S 25 T 29 N R 5 E</b>		State: <b>WA</b>
Landform (hillslope, terrace, etc): <b>Berm</b>	Slope (%): <b>10</b>	Local relief (concave, convex, none): <b>Convex</b>
Subregion (LRR): <b>A</b>	Lat:	Long:
Soil Map Unit Name: <b>Tokol gravelly medial loam, 0 to 8 percent slopes</b>		NWI classification: <b>None</b>
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
(If needed, explain any answers in Remarks.)		

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

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

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

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet			
1. <b><i>Alnus rubra</i></b>	<b>40</b>	<b>Y</b>	<b>FAC</b>	Number of Dominant Species that are OBL, FACW, or FAC:	<b>2</b> (A)		
2.				Total Number of Dominant Species Across All Strata:	<b>2</b> (B)		
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	<b>100</b> (A/B)		
4.	<b>40</b>	= Total Cover					
<b>Sapling/Shrub Stratum (Plot size: 3m diam.)</b>							
1. <b><i>Acer circinatum</i></b>	<b>60</b>	<b>Y</b>	<b>FAC</b>	<b>Prevalence Index Worksheet</b> Total % Cover of <span style="float: right;">Multiply by</span>			
2. <b><i>Acer macrophyllum</i></b>	<b>15</b>	<b>N</b>	<b>FACU</b>				
3.							
4.							
5.							
	<b>75</b>	= Total Cover		OBL species	x 1 =		
				FACW species	x 2 =		
				FAC species	x 3 =		
				FACU species	x 4 =		
				UPL species	x 5 =		
				Column totals	(A) (B)		
Prevalence Index = B / A =							
<b>Herb Stratum (Plot size: 1m diam.)</b>							
1.				<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance test is > 50% <input type="checkbox"/> Prevalence test is ≤ 3.0 * Morphological Adaptations * (provide supporting data in remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants * <input type="checkbox"/> Problematic Hydrophytic Vegetation * (explain)			
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
	<b>0</b>	= Total Cover		* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
<b>Woody Vine Stratum (Plot size: )</b>							
1.							
2.							
	<b>0</b>	= Total Cover					
% Bare Ground in Herb Stratum: 100							
Remarks:							

**SOIL**

**Sampling Point – DP-2**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/3	100					Sandy loam	
4-14	10YR 3/2	50					Gravelly sandy loam	Mixed Matrix
4-14	10YR 3/3	50					Gravelly sandy loam	Mixed Matrix

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

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

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

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

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 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):	<b>Hydric soil present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

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

<p><b>Field Observations</b></p> <p>Surface Water Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (in):</p> <p>Water Table Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (in):</p> <p>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (in):</p>	<p><b>Wetland Hydrology Present?</b>    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/></p>
--	--

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

Remarks:



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DP- 3

Project Site: <b>LK Stevens 24th St SE</b>		Sampling Date: <b>7/25/2017</b>
Applicant/Owner: <b>City of Lake Stevens</b>		Sampling Point: <b>DP- 3</b>
Investigator: <b>R. Kahlo, S. Payne</b>		City/County: <b>City of Lake Stevens</b>
Sect., Township, Range: <b>S 25 T 29 N R 5 E</b>		State: <b>WA</b>
Landform (hillslope, terrace, etc): <b>Swale</b>	Slope (%): <b>0</b>	Local relief (concave, convex, none): <b>Concave</b>
Subregion (LRR): <b>A</b>	Lat:	Long:
Soil Map Unit Name: <b>Tokul gravelly medial loam, 0 to 8 percent slopes</b>		NWI classification: <b>None</b>
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		

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

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

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

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

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>		
0-5	10YR 2/2	100					Silt loam	
5-12	2.5Y 5/2	80	10YR 4/6	20	C	M	Sandy loam	

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

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

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

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

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

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

Restrictive Layer (if present): Type: Depth (inches):	<b>Hydric soil present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

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

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

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

Remarks:    **Likely has WL, swale filled bw/WL 1 & swale cutoff hydrology.**

**DP- 4**

Project Site: <b>LK Stevens 24th St SE</b>		Sampling Date: <b>7/25/2017</b>
Applicant/Owner: <b>City of Lake Stevens</b>		Sampling Point: <b>DP- 4</b>
Investigator: <b>R. Kahlo, S. Payne</b>		City/County: <b>City of Lake Stevens</b>
Sect., Township, Range: <b>S 25 T 29 N R 5 E</b>		State: <b>WA</b>
Landform (hillslope, terrace, etc): <b>Depression</b>	Slope (%): <b>0</b>	Local relief (concave, convex, none): <b>Concave</b>
Subregion (LRR): <b>A</b>	Lat:	Long:
Soil Map Unit Name: <b>Tokul gravelly medial loam, 0 to 8 percent slopes</b>		NWI classification: <b>None</b>
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
(If needed, explain any answers in Remarks.)		

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

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

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

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet			
1. <i>Populus balsamifera</i>	25	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC: <b>4</b> (A)			
2. <i>Alnus rubra</i>	25	Y	FAC	Total Number of Dominant Species Across All Strata: <b>5</b> (B)			
3.				Percent of Dominant Species that are OBL, FACW, or FAC: <b>80</b> (A/B)			
4.	<b>50</b>	= Total Cover					
Sapling/Shrub Stratum (Plot size: 3m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet			
1. <i>Acer circinatum</i>	50	Y	FAC			Total % Cover of	
2. <i>Thuja plicata</i>	15	N	FAC	OBL species	x 1 =		
3. <i>Rubus spectabilis</i>	35	Y	FAC	FACW species	x 2 =		
4.				FAC species	x 3 =		
5.				FACU species	x 4 =		
	<b>80</b>	= Total Cover		UPL species	x 5 =		
				Column totals	(A) (B)		
Herb Stratum (Plot size: 1m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B / A =			
1. <i>Polystichum munitum</i>	35	Y	FACU				
2. <i>Rubus ursinus</i>	5	N	FACU				
3. <i>Maianthemum dilatatum</i>	5	N	FAC				
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
	<b>45</b>	= Total Cover					
Woody Vine Stratum (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance test is > 50% <input type="checkbox"/> Prevalence test is ≤ 3.0 * Morphological Adaptations * (provide supporting data in remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants * <input type="checkbox"/> Problematic Hydrophytic Vegetation * (explain)  * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic			
1.							
2.							
	<b>0</b>	= Total Cover					
% Bare Ground in Herb Stratum: 55 Remarks:				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

**SOIL**

**Sampling Point – DP-4**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	5YR 2.5/2	100					Sandy loam	
6-16	10YR 2/2	100					Sandy loam	

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

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

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

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

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

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

Restrictive Layer (if present): Type: Depth (inches):	<b>Hydric soil present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

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

<b>Field Observations</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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**APPENDIX C**

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Wetland Rating Forms and Figures

Wetland name or number: Wetland A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 7/27/2017

Rated by: S. Payne, P. Heltzel Trained by Ecology?  Y  N Date of training: June 2017

HGM Class used for rating: Riverine

Wetland has multiple HGM classes?  Y  N

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

Source of base aerial photo/map: Google maps, Snohomish County PDS

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

#### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H (M) L	H (M) L	H (M) L	
Landscape Potential	(H) M L	(H) M L	H (M) L	
Value	H M (L)	(H) M L	(H) M L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	6	8	7	21

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

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

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

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

Wetland name or number: Wetland A

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

### Riverine Wetlands

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



Wetland name or number: Wetland A

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

Wetland name or number: Wetland A

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**

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

<b>R 1.0. Does the site have the potential to improve water quality?</b>		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
<input type="checkbox"/> Depressions cover $\geq$ 3/4 area of wetland	points = 8	2
<input type="checkbox"/> Depressions cover > 1/2 area of wetland	points = 4	
<input checked="" type="checkbox"/> Depressions present but cover < 1/2 area of wetland	points = 2	
<input type="checkbox"/> No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, <b>not</b> Cowardin classes)		
<input checked="" type="checkbox"/> Trees or shrubs > 2/3 area of the wetland	points = 8	8
<input type="checkbox"/> Trees or shrubs > 1/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 2/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 1/3 area of the wetland	points = 3	
<input type="checkbox"/> Trees, shrubs, and ungrazed herbaceous < 1/3 area of the wetland	points = 0	
<b>Total for R 1</b>	<b>Add the points in the boxes above</b>	<b>10</b>

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

*Record the rating on the first page*

<b>R 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
R 2.1. Is the wetland within an incorporated city or within its UGA?	<input checked="" type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for R 2</b>	<b>Add the points in the boxes above</b>	<b>3</b>

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

*Record the rating on the first page*

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

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

*Record the rating on the first page*

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**

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

R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i>	<input type="checkbox"/> If the ratio is more than 20 points = 9 <input type="checkbox"/> If the ratio is 10-20 points = 6 <input checked="" type="checkbox"/> If the ratio is 5-<10 points = 4 <input type="checkbox"/> If the ratio is 1-<5 points = 2 <input type="checkbox"/> If the ratio is < 1 points = 1	4
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt;90% cover at person height. These are NOT Cowardin classes).</i>	<input checked="" type="checkbox"/> Forest or shrub for > 1/3 area OR emergent plants > 2/3 area points = 7 <input type="checkbox"/> Forest or shrub for > 1/10 area OR emergent plants > 1/3 area points = 4 <input type="checkbox"/> Plants do not meet above criteria points = 0	7
Total for R 4	Add the points in the boxes above	11

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

Record the rating on the first page

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

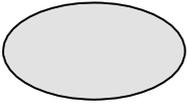
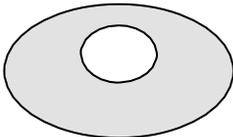
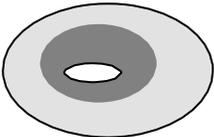
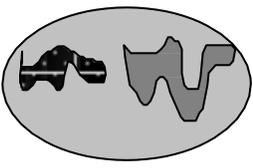
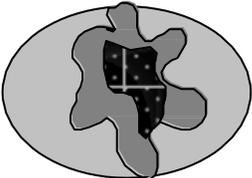
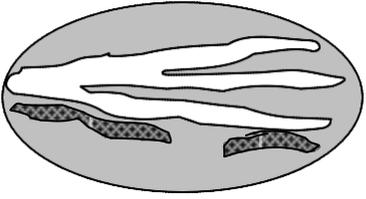
**Rating of Landscape Potential** If score is:  3 = H  1 or 2 = M  0 = L

Record the rating on the first page

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

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

Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>	
<b>HABITAT FUNCTIONS - Indicators that site functions to provide important habitat</b>	
<b>H 1.0. Does the site have the potential to provide habitat?</b>	
<p>H 1.1. Structure of plant community: <i>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.</i></p> <p> <input type="checkbox"/> Aquatic bed <span style="float: right;">4 structures or more: points = 4</span>  <input type="checkbox"/> Emergent <span style="float: right;">3 structures: points = 2</span>  <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have &gt; 30% cover) <span style="float: right;">2 structures: points = 1</span>  <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover) <span style="float: right;">1 structure: points = 0</span> </p> <p><i>If the unit has a Forested class, check if:</i></p> <p><input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon</p>	<p>2</p>
<p>H 1.2. Hydroperiods</p> <p>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (<i>see text for descriptions of hydroperiods</i>).</p> <p> <input type="checkbox"/> Permanently flooded or inundated <span style="float: right;">4 or more types present: points = 3</span>  <input checked="" type="checkbox"/> Seasonally flooded or inundated <span style="float: right;">3 types present: points = 2</span>  <input type="checkbox"/> Occasionally flooded or inundated <span style="float: right;">2 types present: points = 1</span>  <input checked="" type="checkbox"/> Saturated only <span style="float: right;">1 type present: points = 0</span>  <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland  <input type="checkbox"/> <b>Lake Fringe wetland</b> <span style="float: right;"><b>2 points</b></span>  <input type="checkbox"/> <b>Freshwater tidal wetland</b> <span style="float: right;"><b>2 points</b></span> </p>	<p>2</p>
<p>H 1.3. Richness of plant species</p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.  <i>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</i></p> <p>If you counted:    <input checked="" type="checkbox"/> &gt; 19 species <span style="float: right;">points = 2</span>  <input type="checkbox"/> 5 - 19 species <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt; 5 species <span style="float: right;">points = 0</span></p>	<p>2</p>
<p>H 1.4. Interspersion of habitats</p> <p>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. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p><input type="checkbox"/> <b>None</b> = 0 points</p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> <b>Low</b> = 1 point</p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> <b>Moderate</b> = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are</p> <p><input checked="" type="checkbox"/> <b>HIGH</b> = 3points</p>	<p>3</p>

Wetland name or number: Wetland A

<p>H 1.5. Special habitat features:          Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li><input checked="" type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland.</li> <li><input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>AND/OR</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m).</li> <li><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) <b>OR</b> signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>).</li> <li><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>).</li> <li><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>).</li> </ul>	4
<p>Total for H 1 <span style="float: right;">Add the points in the boxes above</span></p>	13

**Rating of Site Potential** If score is:  15-18 = H  7-14 = M  0-6 = L

*Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	0
<p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span></p>	3

**Rating of Landscape Potential** If score is:  4-6 = H  1-3 = M  < 1 = L

*Record the rating on the first page*

Wetland name or number: Wetland A

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

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

*Record the rating on the first page*

Wetland name or number: Wetland A

## WDFW Priority Habitats

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

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

**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> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 1.1</b>   <input checked="" type="checkbox"/> No = <b>Not an estuarine wetland</b></span></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?  <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No - Go to <b>SC 1.2</b></span></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> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)  <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Category II</b></span></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? <span style="float: right;"><input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b>   <input type="checkbox"/> No – Go to <b>SC 2.3</b></span></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></span></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a>  <span style="float: right;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No – Go to <b>SC 3.2</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No = <b>Is not a bog</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No – Go to <b>SC 3.4</b></span>  <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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No = <b>Is not a bog</b></span></p>	<b>Cat. I</b>

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

# WETLAND A (RIVERINE)



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

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

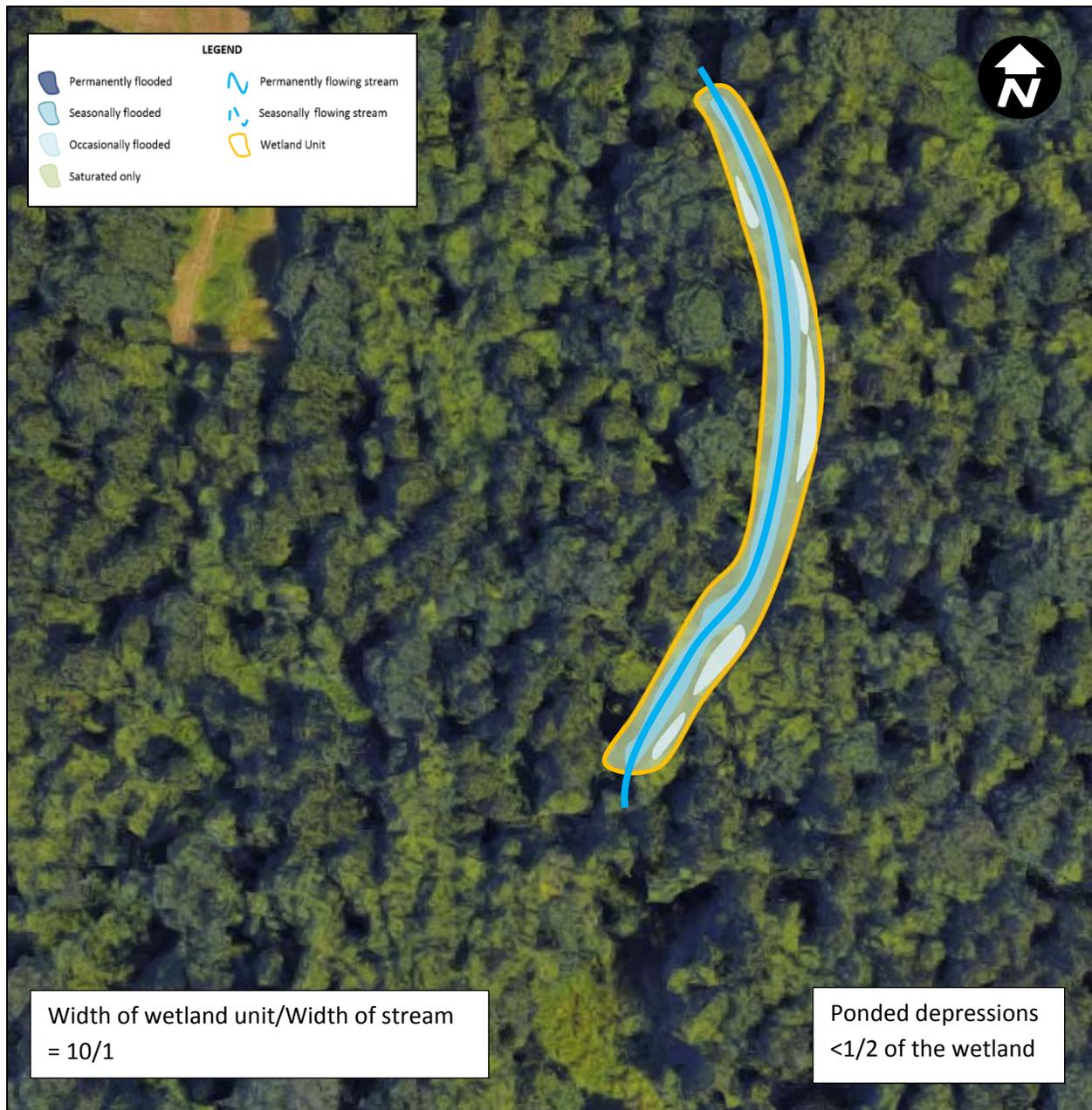


Figure A-2. Hydroperiods, poned depressions, and wetland-width-to-stream-width ratio – H1.2, R1.1, R4.1

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

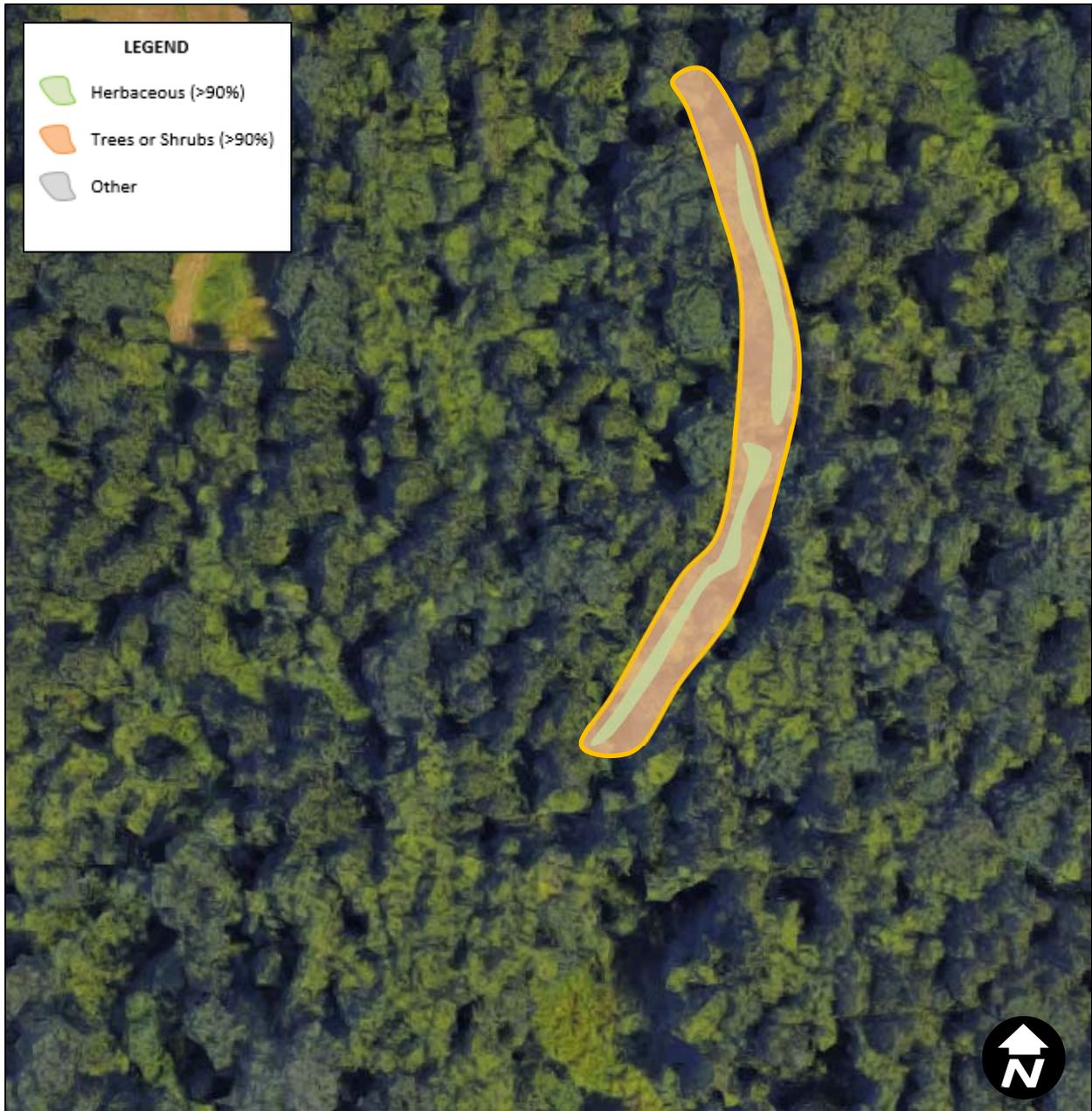


Figure A-3. Plant cover of trees, shrubs, and herbaceous plants (not Cowardin) – R1.2, R4.2

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

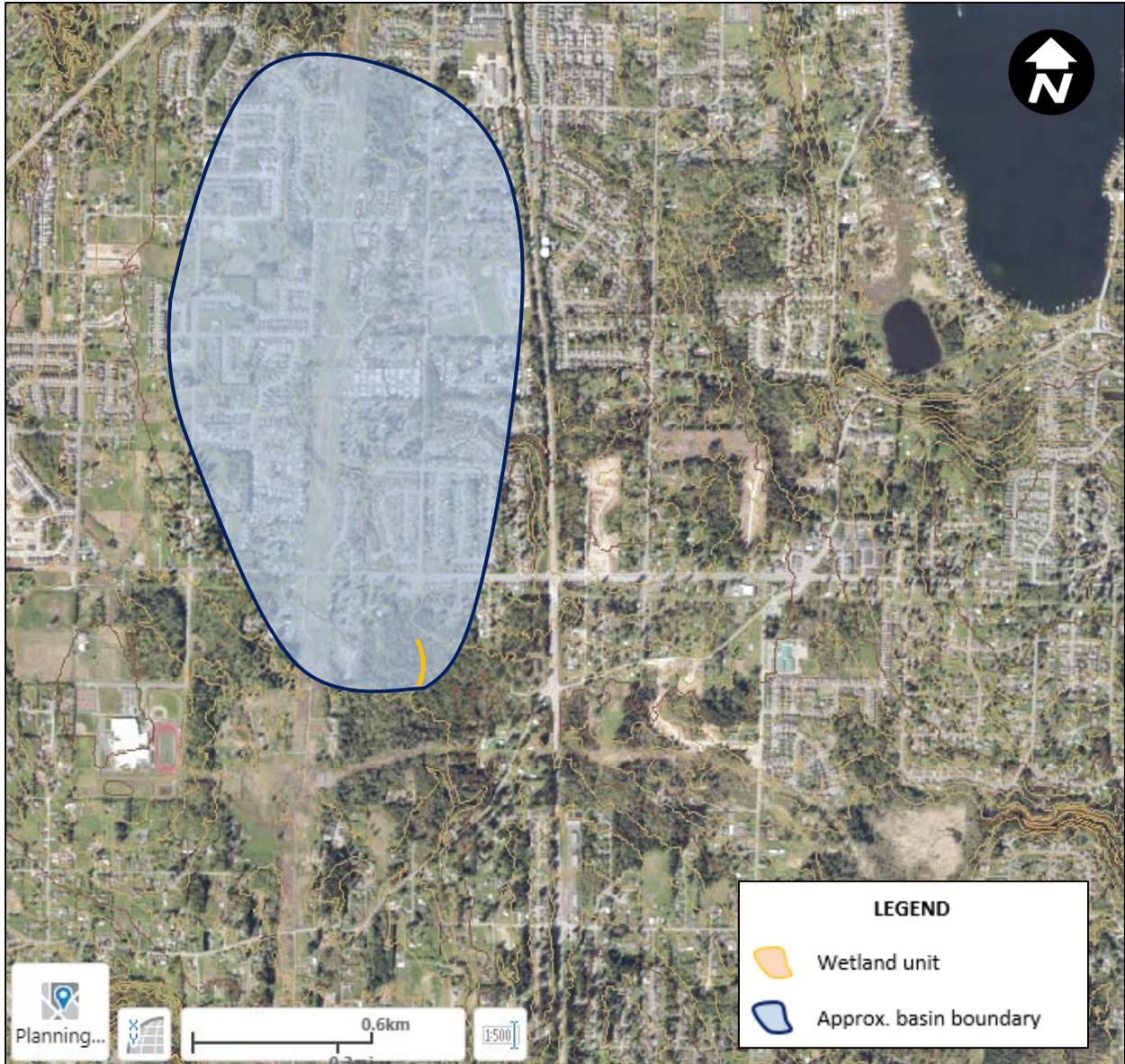


Figure A-4. Map of the contributing basin – R2.2, R2.3, R5.2

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

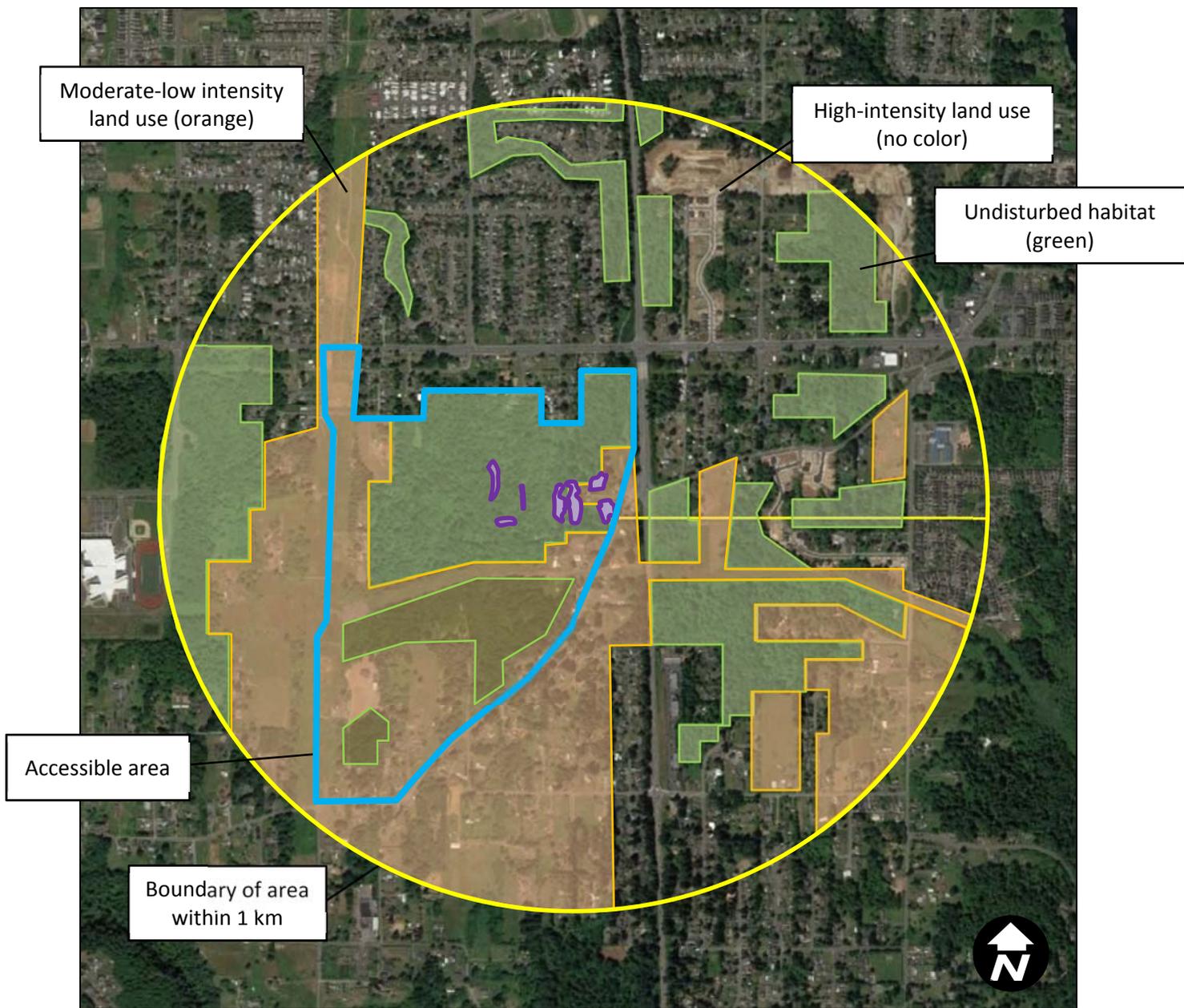


Figure A-5. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2.2, H2.3

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

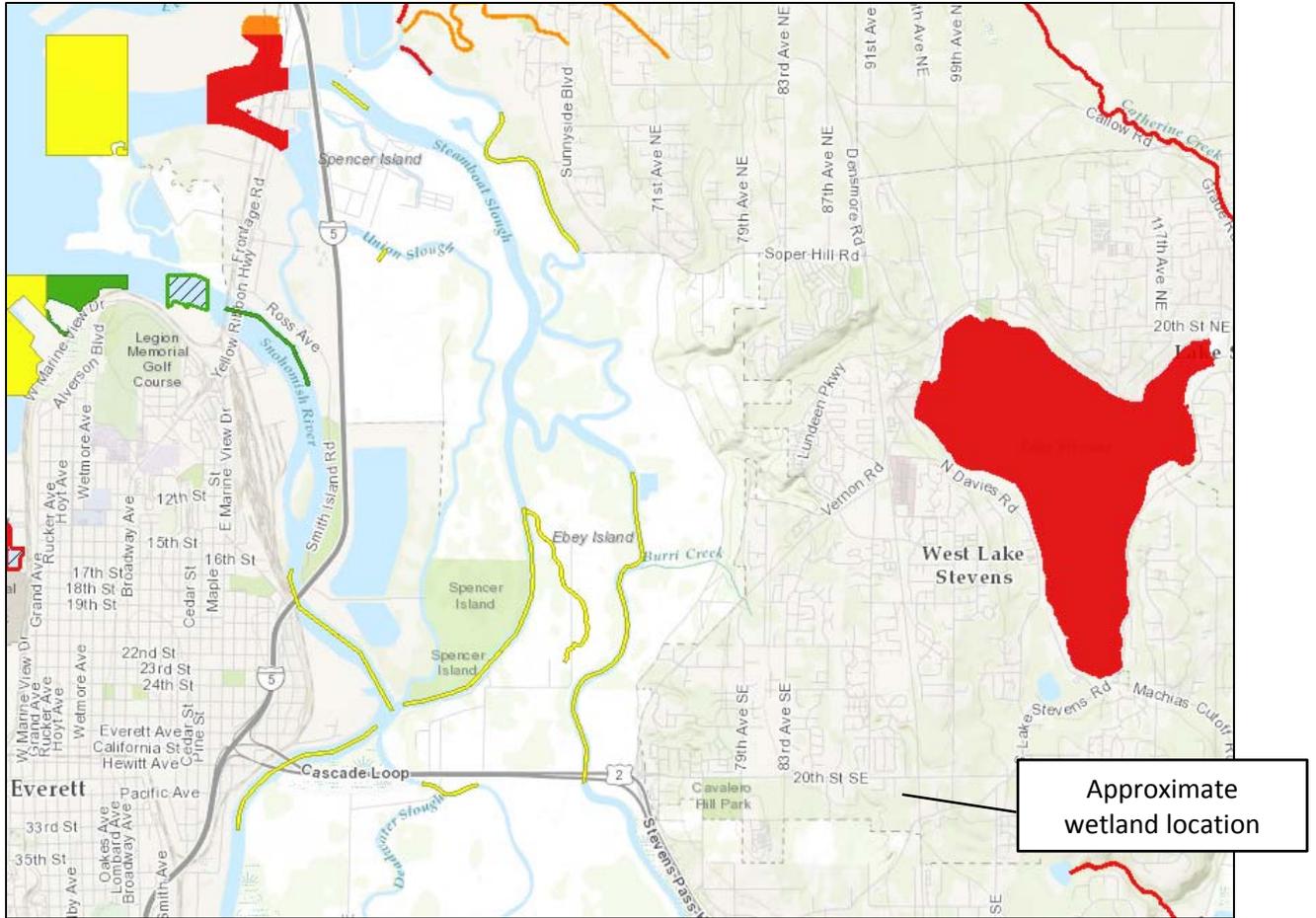


Figure A-6. Screen-capture of 303(d) listed waters in basin – R3.1

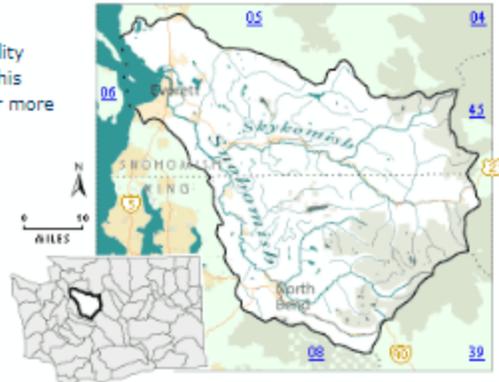
Features depicted are not to scale. Sketches are based on available data and best professional judgment.

# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 7: Snohomish

## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



### Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Lake Loma</a>	Total Phosphorus	Straight to implementation project under development	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Snohomish River</a>	<a href="#">French Creek / Pilchuck River</a>	Under development	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Dissolved Oxygen</li> <li>• Temperature</li> </ul>		
	<a href="#">Dioxin</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<a href="#">Estuary</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Ammonia</li> <li>• BOD</li> </ul>		
<a href="#">Tributaries</a>	<ul style="list-style-type: none"> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Tributaries: <ul style="list-style-type: none"> <li>• Allen Creek</li> <li>• Quilceda Creek</li> <li>• French Creek</li> <li>• Woods Creek</li> <li>• Pilchuck River</li> <li>• Marshlands (Wood Creek) {2}</li> </ul>		
<a href="#">Snoqualmie River</a>	<ul style="list-style-type: none"> <li>• Ammonia-N</li> <li>• BOD (5-day)</li> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Temperature	EPA approved Has an implementation plan	

Figure A-7. Screen-capture of TMDL list for WRIA in which unit is found – R3.2, R3.3

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

Wetland name or number: Wetland D

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland D Date of site visit: July 25, 2017 Rated by: S. Payne, R. Kahlo

Trained by Ecology?  Y  N Date of training: June 2017

HGM Class used for rating: Depressional

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: Bing Maps, Snohomish County PDS Mapper

## OVERALL WETLAND CATEGORY (based on functions or special characteristics 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H (M) L	H (M) L	H (M) L	
Landscape Potential	(H) M L	H (M) L	H (M) L	
Value	H (M) L	(H) M L	H (M) L	TOTAL
Score Based on Ratings	7	7	6	20

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

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

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

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

Wetland name or number: Wetland D

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

### Depressional Wetlands

<b>Map of:</b>	<b>To answer questions:</b>	<b>Figure #</b>
Cowardin plant classes	D 1.3, H 1.1, H 1.4	DEF-1
Hydroperiods	D 1.4, H 1.2	DEF-2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	DEF-2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	DEF-2
Map of the contributing basin	D 4.3, D 5.3	DEF-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	DEF-6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	DEF-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	DEF-8

## HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

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

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

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

**YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number: Wetland D

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

<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. <b>Characteristics of surface water outflows from the wetland:</b>		
<input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2		2
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. <b>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</b> <input type="checkbox"/> Yes = 4 <input checked="" type="checkbox"/> No = 0		0
D 1.3. <b>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</b>		
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 1/2 of area points = 3		3
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1		
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0		
D 1.4. <b>Characteristics of seasonal ponding or inundation:</b> <i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
<input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		2
<input checked="" type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2		
<input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0		
<b>Total for D 1</b>	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*

<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?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 2</b>	Add the points in the boxes above	<b>3</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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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)?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 3</b>	Add the points in the boxes above	<b>1</b>

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

*Record the rating on the first page*

**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>		
<input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet).	points = 4	2
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet.	points = 7	0
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet.	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland.	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water.	points = 1	
<input checked="" type="checkbox"/> 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>		
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit.	points = 5	5
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit.	points = 0	
<input type="checkbox"/> 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>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

<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>	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
<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>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<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

<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):		
• <input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	2
• <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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.		
<i>Explain why: ....</i>	points = 0	
<input type="checkbox"/> 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>		
	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<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

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

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

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

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

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

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

2

H 1.3. Richness of plant species

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

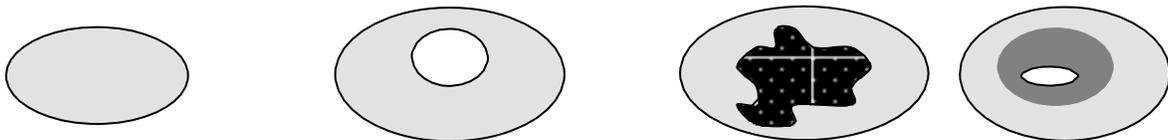
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

1

H 1.4. Interspersion of habitats

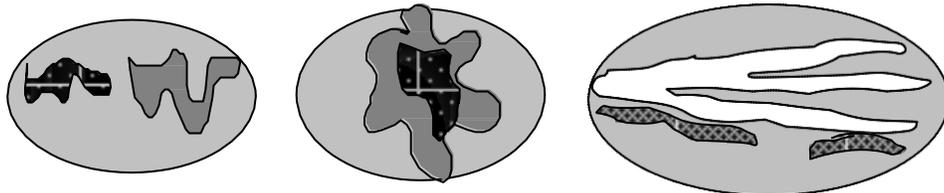
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



**None** = 0 points

**Low** = 1 point

**Moderate** = 2 points



All three diagrams in this row are

**HIGH** = 3points

3

Wetland name or number: Wetland D

<p>H 1.5. Special habitat features:                  Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input checked="" 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) <b>OR</b> signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>).</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>		2
Total for H 1	Add the points in the boxes above	10

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <p><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>		0
Total for H 2	Add the points in the boxes above	3

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

H 3.0. Is the habitat provided by the site valuable to society?		
<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><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><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</p> <p><input checked="" type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>		1

**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.

**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> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="margin-left: 100px;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b></span> <span style="margin-left: 20px;"><input checked="" type="checkbox"/> No= <b>Not an estuarine wetland</b></span></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 align="right"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> 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> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <span style="margin-left: 20px;"><input type="checkbox"/> No= <b>Category II</b></span></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? <span style="margin-left: 100px;"><input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b></span> <span style="margin-left: 20px;"><input type="checkbox"/> No – Go to <b>SC 2.3</b></span></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <span style="margin-left: 20px;"><input checked="" type="checkbox"/> No = <b>Not a WHCV</b></span></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a> <span style="margin-left: 100px;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b></span> <span style="margin-left: 20px;"><input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <span style="margin-left: 20px;"><input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <span style="margin-left: 20px;"><input checked="" type="checkbox"/> No – Go to <b>SC 3.2</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <span style="margin-left: 20px;"><input checked="" type="checkbox"/> No = <b>Is not a bog</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <span style="margin-left: 20px;"><input type="checkbox"/> No – Go to <b>SC 3.4</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <span style="margin-left: 20px;"><input type="checkbox"/> No = <b>Is not a</b></span></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> <p><input type="checkbox"/> <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input checked="" type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 5.1</b>    <input checked="" type="checkbox"/> No = <b>Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1.</b> Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 6.1</b>    <input checked="" type="checkbox"/> No = <b>not an interdunal wetland for rating</b></p> <p><b>SC 6.1.</b> Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?    <input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No – Go to <b>SC 6.2</b></p> <p><b>SC 6.2.</b> Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?    <input type="checkbox"/> Yes = <b>Category II</b>    <input type="checkbox"/> No – Go to <b>SC 6.3</b></p> <p><b>SC 6.3.</b> Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?    <input type="checkbox"/> Yes = <b>Category III</b>    <input type="checkbox"/> No = <b>Category IV</b></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p>N/A</p>

Wetland name or number: Wetland E

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland E      Date of site visit: July 25, 2017      Rated by: S. Payne, R. Kahlo

Trained by Ecology?  Y  N      Date of training: June 2017

HGM Class used for rating: Depressional

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: Bing Maps, Snohomish County PDS Mapper

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

### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	(M)	L	(H)	M	L	H	(M)	L	
Landscape Potential	H	(M)	L	H	M	(L)	H	(M)	L	
Value	H	(M)	L	(H)	M	L	(H)	M	L	
Score Based on Ratings	6			7			7			TOTAL 20

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

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

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

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

Wetland name or number: Wetland E

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

### Depressional Wetlands

<b>Map of:</b>	<b>To answer questions:</b>	<b>Figure #</b>
Cowardin plant classes	D 1.3, H 1.1, H 1.4	DEF-1
Hydroperiods	D 1.4, H 1.2	DEF-2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	DEF-2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	DEF-2
Map of the contributing basin	D 4.3, D 5.3	DEF-4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	DEF-6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	DEF-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	DEF-8

## HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

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

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

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

**YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number: Wetland E

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

<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> <input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 <input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 <input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1 <input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> <input type="checkbox"/> Yes = 4 <input checked="" type="checkbox"/> No = 0	0	
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): <input type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 <input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1 <input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0	3	
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> <input checked="" type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4 <input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2 <input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0	4	
<b>Total for D 1</b>	Add the points in the boxes above	9

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 2</b>	Add the points in the boxes above	1

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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)?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 3</b>	Add the points in the boxes above	1

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

Record the rating on the first page

**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>		
<input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet).	points = 4	2
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet.	points = 7	5
<input checked="" type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet.	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland.	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water.	points = 1	
<input type="checkbox"/> 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>		
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit.	points = 5	5
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit.	points = 0	
<input type="checkbox"/> 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>12</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>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?</b>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>0</b>

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

Record the rating on the first page

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</b> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• <input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	2
• <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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.		
<i>Explain why: ....</i>	points = 0	
<input type="checkbox"/> 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>	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<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

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

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

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

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

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

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

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

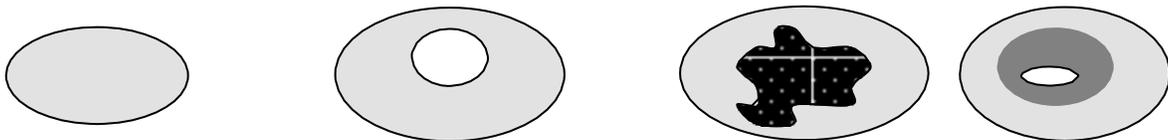
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

2

H 1.4. Interspersion of habitats

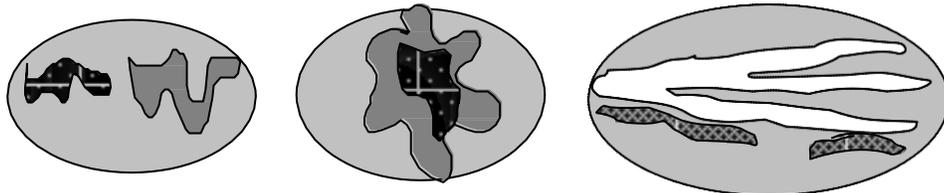
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



**None** = 0 points

**Low** = 1 point

**Moderate** = 2 points



All three diagrams in this row are

**HIGH** = 3points

3

Wetland name or number: Wetland E

<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 checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input checked="" 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) <b>OR</b> signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>).</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>		2
Total for H 1	Add the points in the boxes above	12

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <p><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>		0
Total for H 2	Add the points in the boxes above	3

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

H 3.0. Is the habitat provided by the site valuable to society?		
<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><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><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</p> <p><input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>		2

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

## 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.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

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

Wetland name or number: Wetland F

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland F Date of site visit: July 25, 2017 Rated by: S. Payne, R. Kahlo

Trained by Ecology?  Y  N Date of training: June 2017

HGM Class used for rating: Depressional

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: Bing Maps, Snohomish County PDS Mapper

## OVERALL WETLAND CATEGORY (based on functions or special characteristics 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality		Hydrologic		Habitat					
<i>Circle the appropriate ratings</i>										
Site Potential	H	(M)	L	H	(M)	L	H	(M)	L	
Landscape Potential	H	(M)	L	H	(M)	L	H	(M)	L	
Value	H	(M)	L	(H)	M	L	H	M	(L)	TOTAL
Score Based on Ratings	6			7			5		18	

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

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

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

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

Wetland name or number: Wetland F

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

### Depressional Wetlands

<b>Map of:</b>	<b>To answer questions:</b>	<b>Figure #</b>
Cowardin plant classes	D 1.3, H 1.1, H 1.4	DEF-1
Hydroperiods	D 1.4, H 1.2	DEF-2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	DEF-2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	DEF-2
Map of the contributing basin	D 4.3, D 5.3	DEF-5
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	DEF-6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	DEF-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	DEF-8



Wetland name or number: Wetland F

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

<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. <b>Characteristics of surface water outflows from the wetland:</b>		
<input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2		2
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. <b>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</b> <input type="checkbox"/> Yes = 4 <input checked="" type="checkbox"/> No = 0		0
D 1.3. <b>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</b>		
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > 1/2 of area points = 3		5
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1		
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0		
D 1.4. <b>Characteristics of seasonal ponding or inundation:</b> <i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
<input checked="" type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		4
<input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2		
<input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0		
<b>Total for D 1</b>	Add the points in the boxes above	<b>11</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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 2</b>	Add the points in the boxes above	<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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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)?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 3</b>	Add the points in the boxes above	<b>1</b>

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

Record the rating on the first page

**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>		
<input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet).	points = 4	2
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet.	points = 7	3
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet.	points = 5	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland.	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water.	points = 1	
<input type="checkbox"/> 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>		
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit.	points = 5	5
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit.	points = 0	
<input type="checkbox"/> Entire wetland is in the Flats class.	points = 5	
Total for D 4	Add the points in the boxes above	10

**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> <input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0		
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b> <input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0		
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?</b> <input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0		
Total for D 5	Add the points in the boxes above	1

**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):		
• <input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	2
• <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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	
<input type="checkbox"/> 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>		
<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0		
Total for D 6	Add the points in the boxes above	2

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

Record the rating on the first page

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

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

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

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

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

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3  
 Seasonally flooded or inundated 3 types present: points = 2  
 Occasionally flooded or inundated 2 types present: points = 1  
 Saturated only 1 type present: points = 0  
 Permanently flowing stream or river in, or adjacent to, the wetland  
 Seasonally flowing stream in, or adjacent to, the wetland  
 **Lake Fringe wetland** **2 points**  
 **Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

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

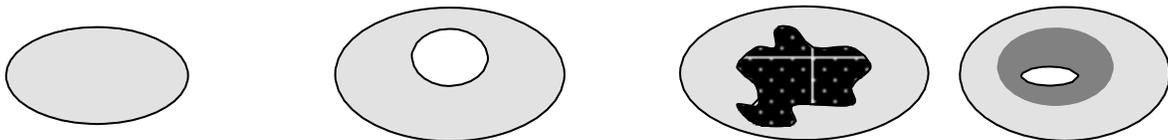
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

1

H 1.4. Interspersion of habitats

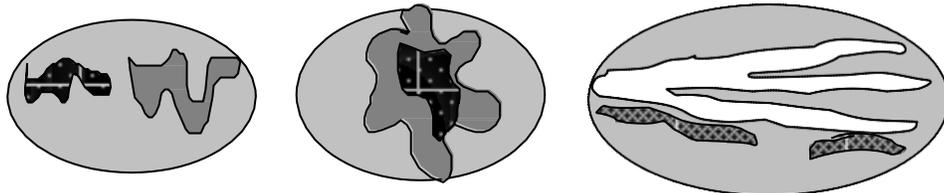
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



**None** = 0 points

**Low** = 1 point

**Moderate** = 2 points



All three diagrams in this row are

**HIGH** = 3points

2

Wetland name or number: Wetland F

<p>H 1.5. Special habitat features:          Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li><input checked="" type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland.</li> <li><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>AND/OR</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m).</li> <li><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) <b>OR</b> signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>).</li> <li><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>).</li> <li><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>).</li> </ul>	2
<p>Total for H 1</p>	<p style="text-align: center;">Add the points in the boxes above</p> <p style="text-align: center;">8</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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	0
<p>Total for H 2</p>	<p style="text-align: center;">Add the points in the boxes above</p> <p style="text-align: center;">3</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> <ul style="list-style-type: none"> <li><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</li> <li><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</li> <li><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</li> <li><input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></li> <li><input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></li> </ul>	0

**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.

**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> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="margin-left: 100px;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b></span> <input checked="" type="checkbox"/> 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;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> 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> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)  <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> 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? <span style="margin-left: 100px;"><input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b></span> <input type="checkbox"/> 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?  <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <input checked="" type="checkbox"/> 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? <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a>  <input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <input type="checkbox"/> No = <b>Not a WHCV</b></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <input type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <input checked="" type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <input checked="" type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <input type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <input type="checkbox"/> No = <b>Is not a</b></p>	<b>Cat. I</b>



# WETLAND D, E, F (DEPRESSIONAL)

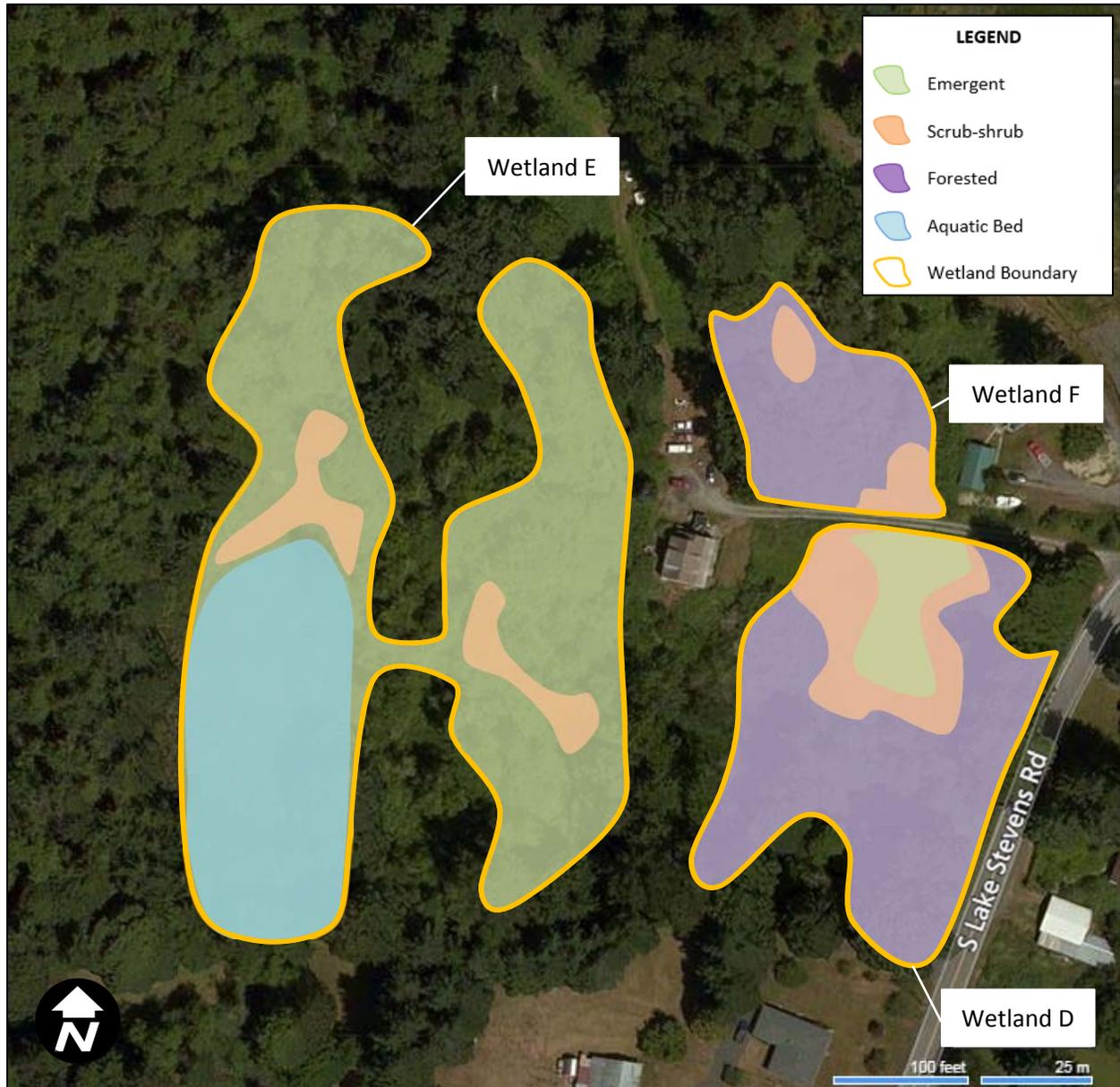


Figure DEF-1. Cowardin plant classes – D1.3, H1.1, H1.4

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

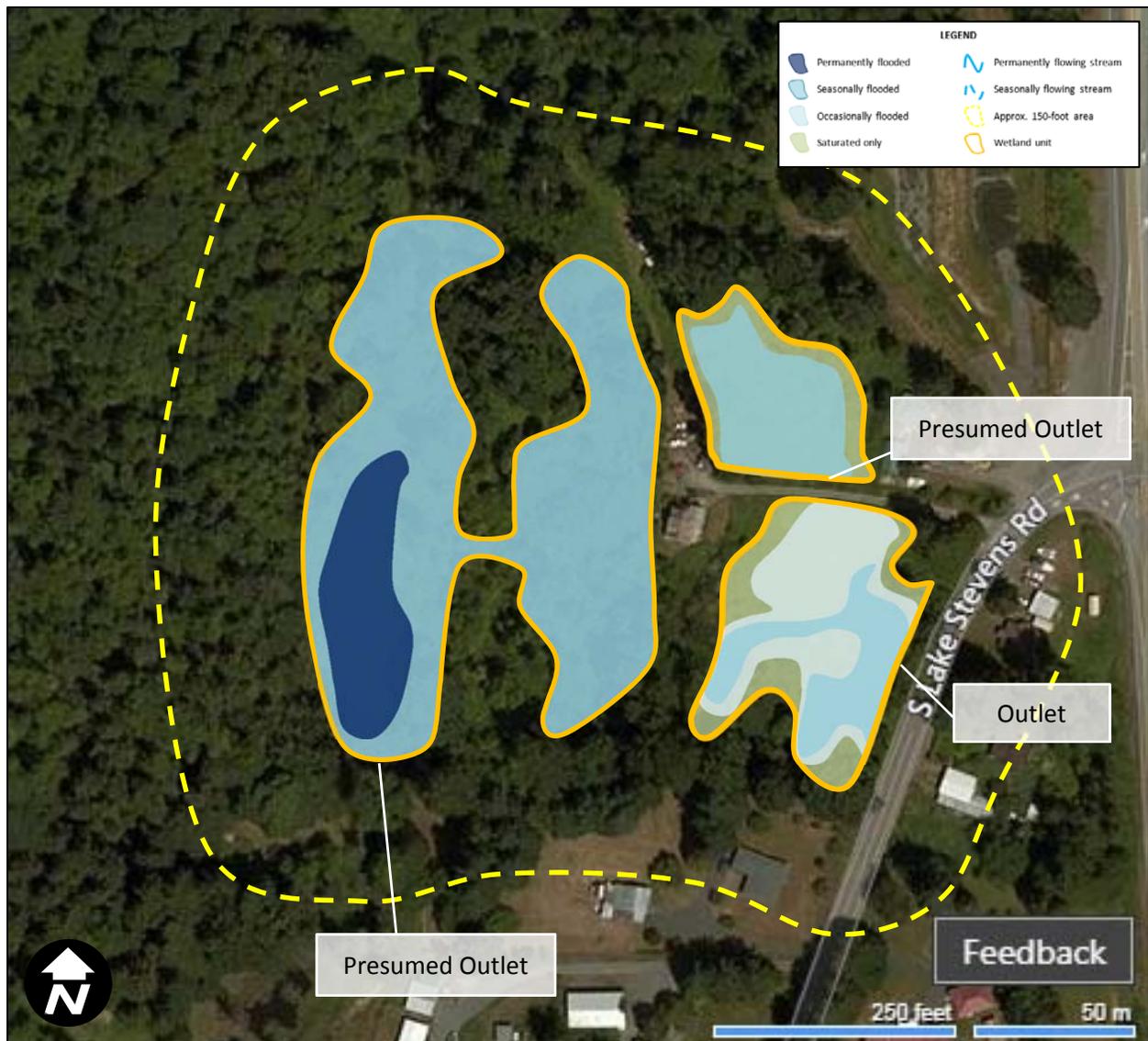


Figure DEF-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

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



Figure DEF-3. Map of Wetland D contributing basin – D4. 3, D5.3

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



Figure DEF-4. Map of Wetland F contributing basin – D4.3, D5.3

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

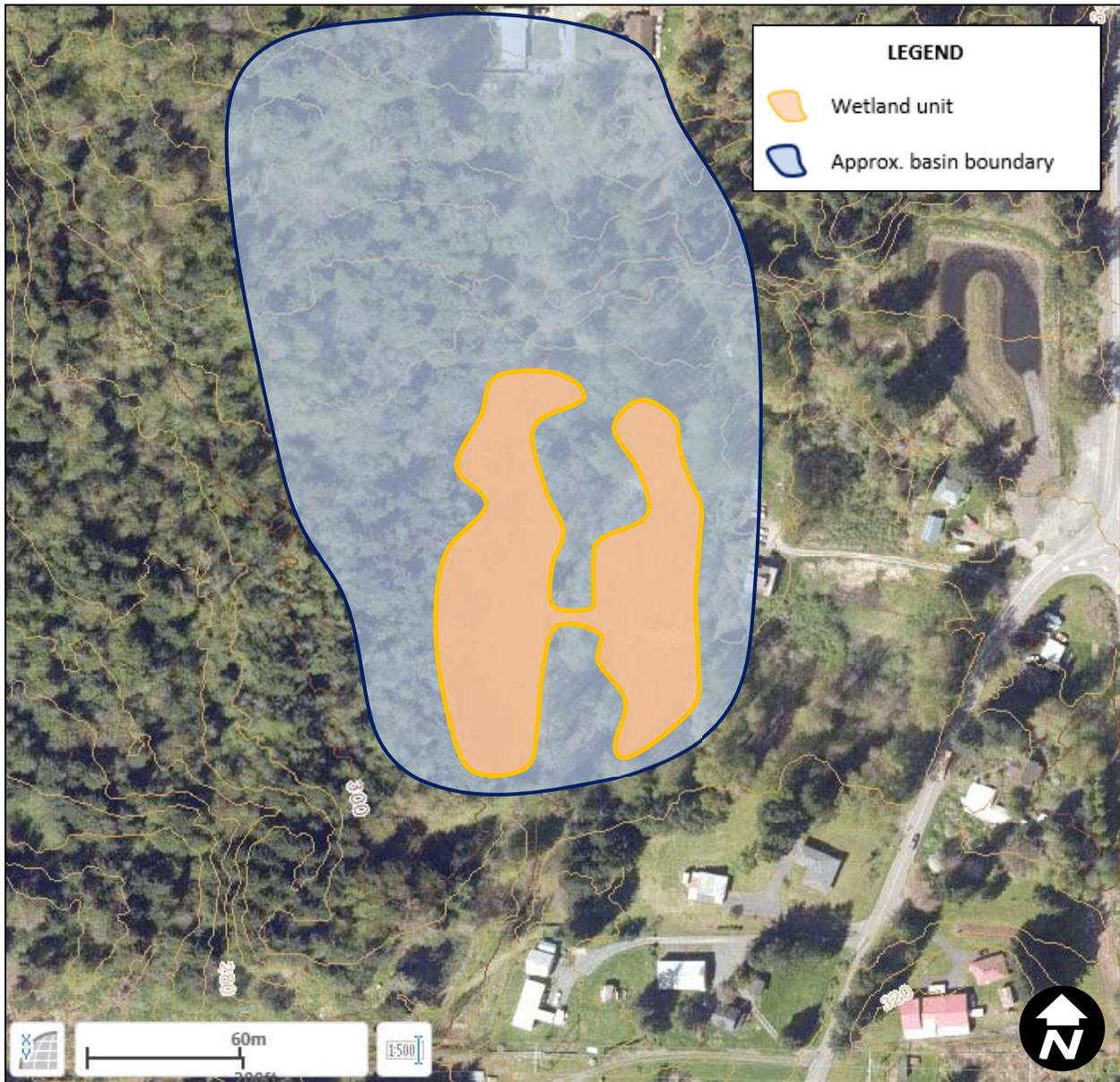


Figure DEF-5. Map of Wetland E contributing basin – D4. 3, D5.3

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

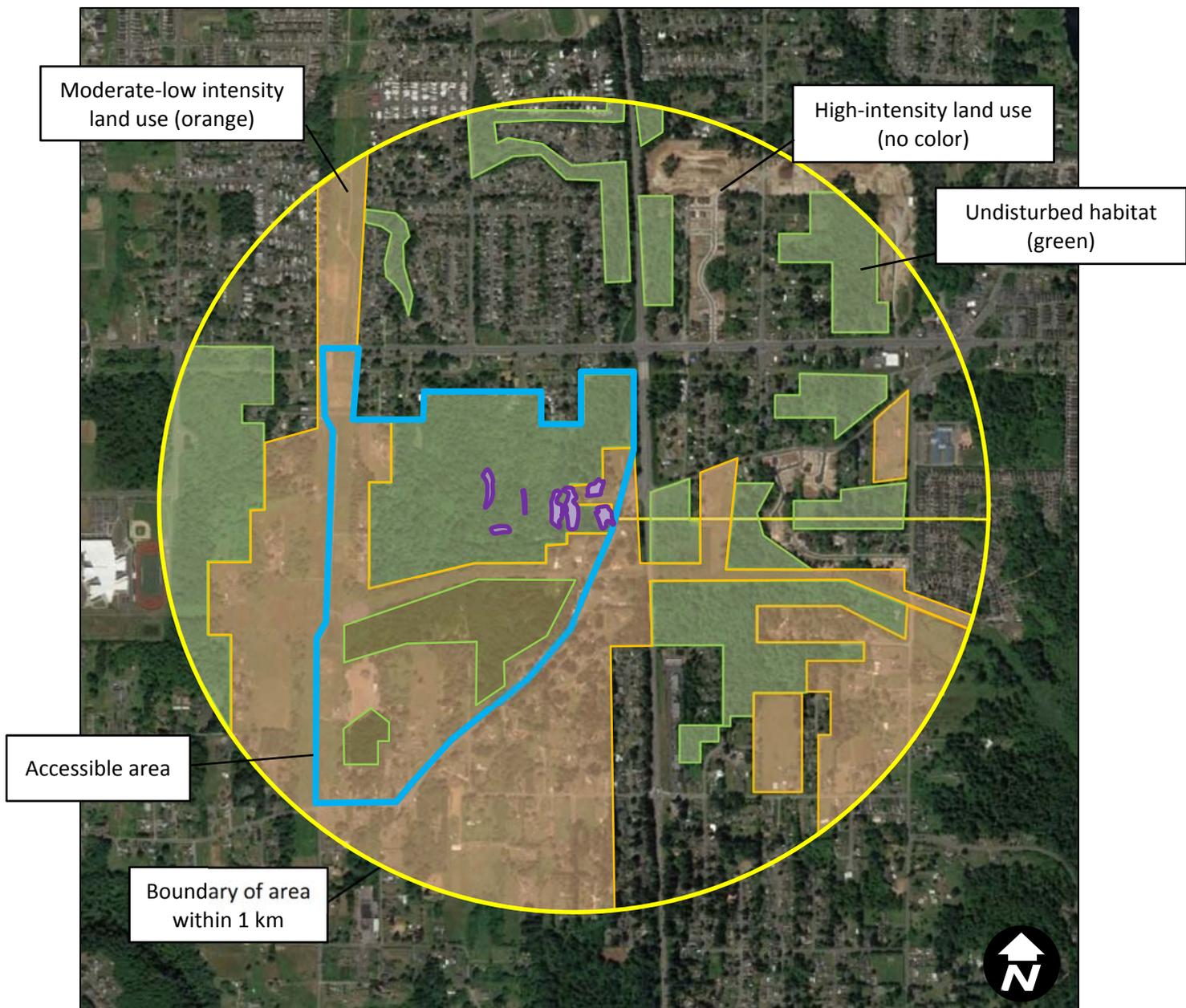


Figure DEF-6. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2. 2, H2.3

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

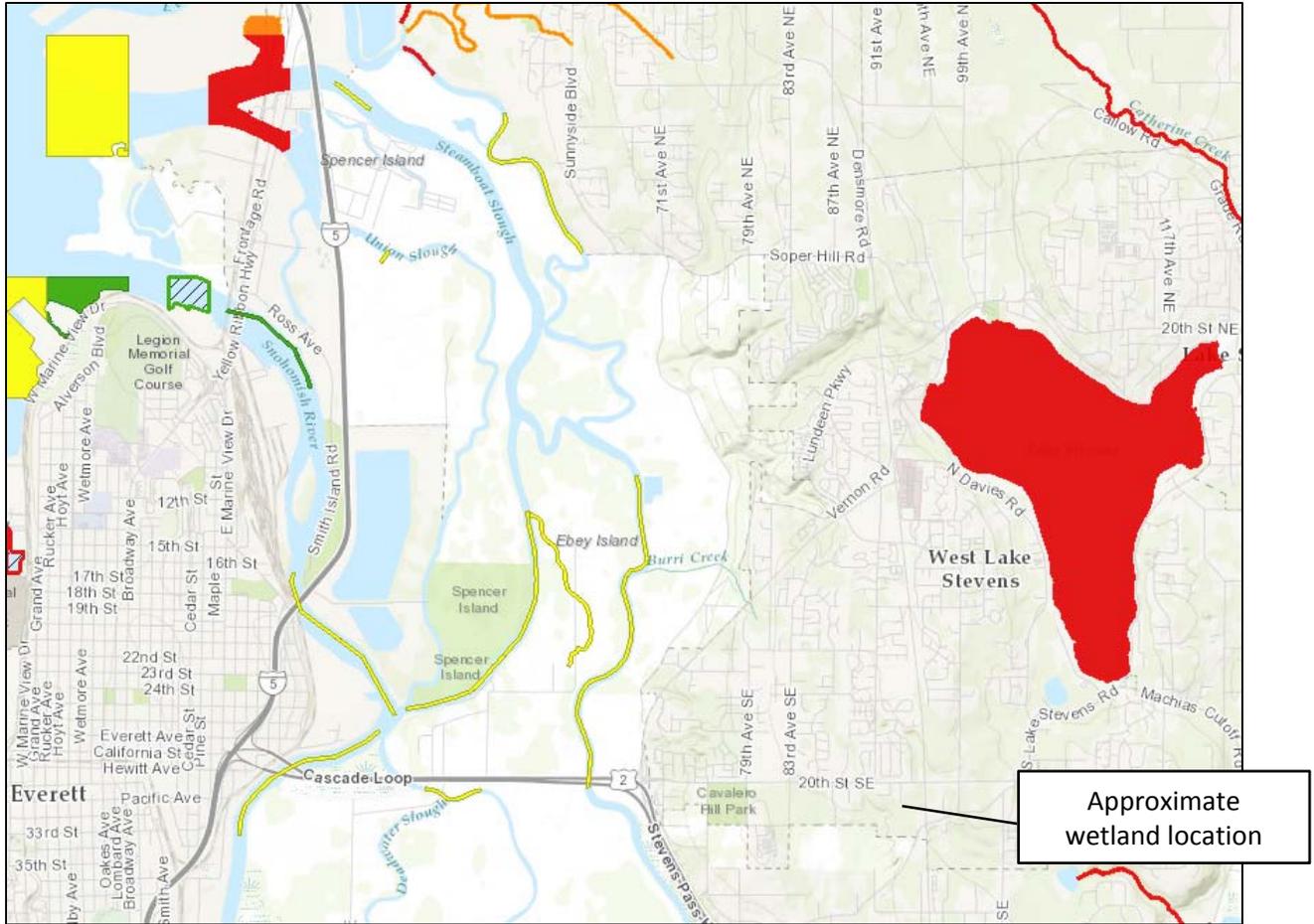


Figure DEF-7. Screen-capture of 303(d) listed waters in basin – D3.1, D3.2

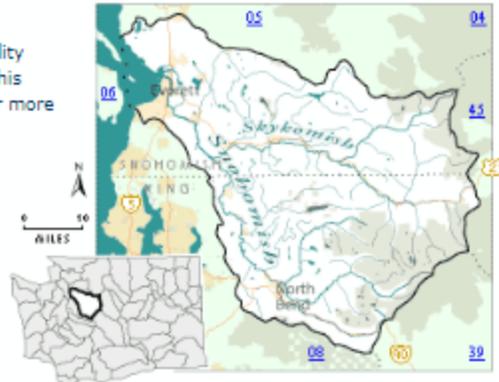
Features depicted are not to scale. Sketches are based on available data and best professional judgment.

# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 7: Snohomish

## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



### Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Lake Loma</a>	Total Phosphorus	Straight to implementation project under development	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Snohomish River</a>	<a href="#">French Creek / Pilchuck River</a>	Under development	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Dissolved Oxygen</li> <li>• Temperature</li> </ul>		
	<a href="#">Dioxin</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<a href="#">Estuary</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Ammonia</li> <li>• BOD</li> </ul>		
<a href="#">Tributaries</a>	<ul style="list-style-type: none"> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Tributaries: <ul style="list-style-type: none"> <li>• Allen Creek</li> <li>• Quilceda Creek</li> <li>• French Creek</li> <li>• Woods Creek</li> <li>• Pilchuck River</li> <li>• Marshlands (Wood Creek) {2}</li> </ul>		
<a href="#">Snoqualmie River</a>	<ul style="list-style-type: none"> <li>• Ammonia-N</li> <li>• BOD (5-day)</li> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Temperature	EPA approved Has an implementation plan	

Figure DEF-8. Screen-capture of TMDL list for WRIA in which unit is found – D3.3

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

Wetland name or number: Wetland H

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland H Date of site visit: 7/27/2017

Rated by: S. Payne, P. Heltzel Trained by Ecology?  Y  N Date of training: June 2017

HGM Class used for rating: Riverine

Wetland has multiple HGM classes?  Y  N

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

Source of base aerial photo/map: Google maps, Snohomish County PDS

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

#### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H (M) L	H (M) L	H (M) L	
Landscape Potential	(H) M L	(H) M L	H (M) L	
Value	H M (L)	(H) M L	(H) M L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	6	8	7	21

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

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

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

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

Wetland name or number: Wetland H

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

### Riverine Wetlands

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



Wetland name or number: H

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

Wetland name or number: H

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**

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

<b>R 1.0. Does the site have the potential to improve water quality?</b>		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
<input type="checkbox"/> Depressions cover $\geq$ 3/4 area of wetland	points = 8	2
<input type="checkbox"/> Depressions cover > 1/2 area of wetland	points = 4	
<input checked="" type="checkbox"/> Depressions present but cover < 1/2 area of wetland	points = 2	
<input type="checkbox"/> No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, <b>not</b> Cowardin classes)		
<input checked="" type="checkbox"/> Trees or shrubs > 2/3 area of the wetland	points = 8	8
<input type="checkbox"/> Trees or shrubs > 1/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 2/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 1/3 area of the wetland	points = 3	
<input type="checkbox"/> Trees, shrubs, and ungrazed herbaceous < 1/3 area of the wetland	points = 0	
<b>Total for R 1</b>	<b>Add the points in the boxes above</b>	<b>10</b>

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

*Record the rating on the first page*

<b>R 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
R 2.1. Is the wetland within an incorporated city or within its UGA?	<input checked="" type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for R 2</b>	<b>Add the points in the boxes above</b>	<b>3</b>

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

*Record the rating on the first page*

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

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

*Record the rating on the first page*

Wetland name or number: H

## RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 4.0. Does the site have the potential to reduce flooding and erosion?		
<p>R 4.1. Characteristics of the overbank storage the wetland provides:  <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i></p> <p> <input type="checkbox"/> If the ratio is more than 20 <span style="float: right;">points = 9</span>  <input type="checkbox"/> If the ratio is 10-20 <span style="float: right;">points = 6</span>  <input checked="" type="checkbox"/> If the ratio is 5-&lt;10 <span style="float: right;">points = 4</span>  <input type="checkbox"/> If the ratio is 1-&lt;5 <span style="float: right;">points = 2</span>  <input type="checkbox"/> If the ratio is &lt; 1 <span style="float: right;">points = 1</span> </p>		4
<p>R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt;90% cover at person height. These are <u>NOT</u> Cowardin classes).</i></p> <p> <input checked="" type="checkbox"/> Forest or shrub for &gt; 1/3 area OR emergent plants &gt; 2/3 area <span style="float: right;">points = 7</span>  <input type="checkbox"/> Forest or shrub for &gt; 1/10 area OR emergent plants &gt; 1/3 area <span style="float: right;">points = 4</span>  <input type="checkbox"/> Plants do not meet above criteria <span style="float: right;">points = 0</span> </p>		7
Total for R 4		11

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

*Record the rating on the first page*

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

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

*Record the rating on the first page*

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

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

*Record the rating on the first page*

Wetland name or number: H

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

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

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

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

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

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

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

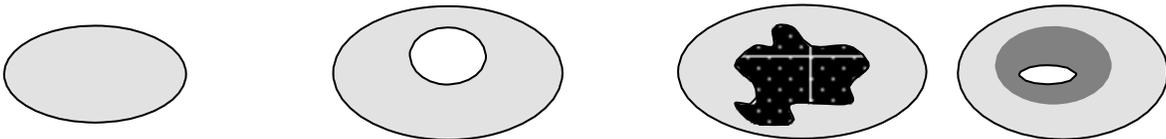
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

1

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

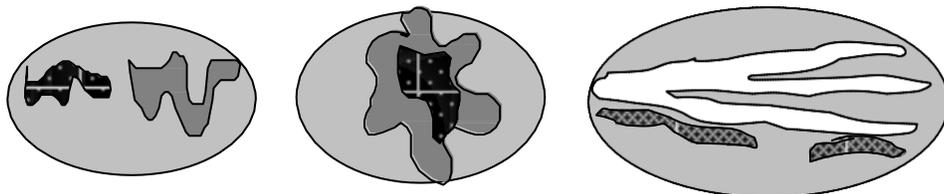
**Low** = 1 point

**Moderate** = 2 points

2

All three diagrams in this row are

**HIGH** = 3points



Wetland name or number: H

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

**Rating of Site Potential** If score is:  15-18 = H  7-14 = M  0-6 = L

*Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	0
<p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span></p>	3

**Rating of Landscape Potential** If score is:  4-6 = H  1-3 = M  < 1 = L

*Record the rating on the first page*

Wetland name or number: H

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

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

*Record the rating on the first page*

Wetland name or number: H

## 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: H

**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> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 1.1</b>   <input checked="" type="checkbox"/> No = <b>Not an estuarine wetland</b></span></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?  <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No - Go to <b>SC 1.2</b></span></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> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)  <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Category II</b></span></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? <span style="float: right;"><input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b>   <input type="checkbox"/> No – Go to <b>SC 2.3</b></span></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></span></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a>  <span style="float: right;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No – Go to <b>SC 3.2</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No = <b>Is not a bog</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No – Go to <b>SC 3.4</b></span>  <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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No = <b>Is not a bog</b></span></p>	<b>Cat. I</b>

Wetland name or number: H

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

# WETLAND H (RIVERINE)



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

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



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

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



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

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

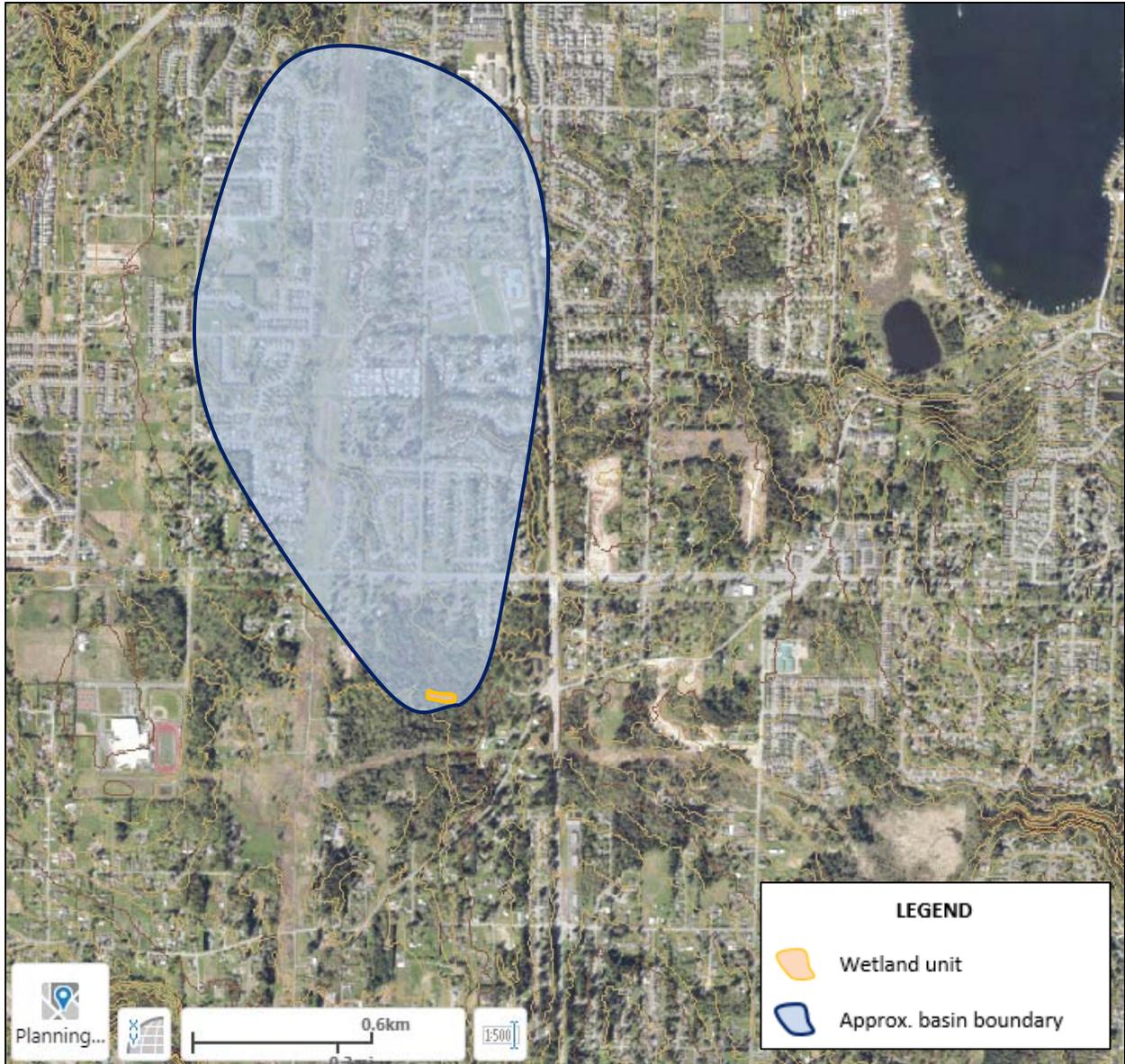


Figure H-4. Map of the contributing basin – R2.2, R2.3, R5.2

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

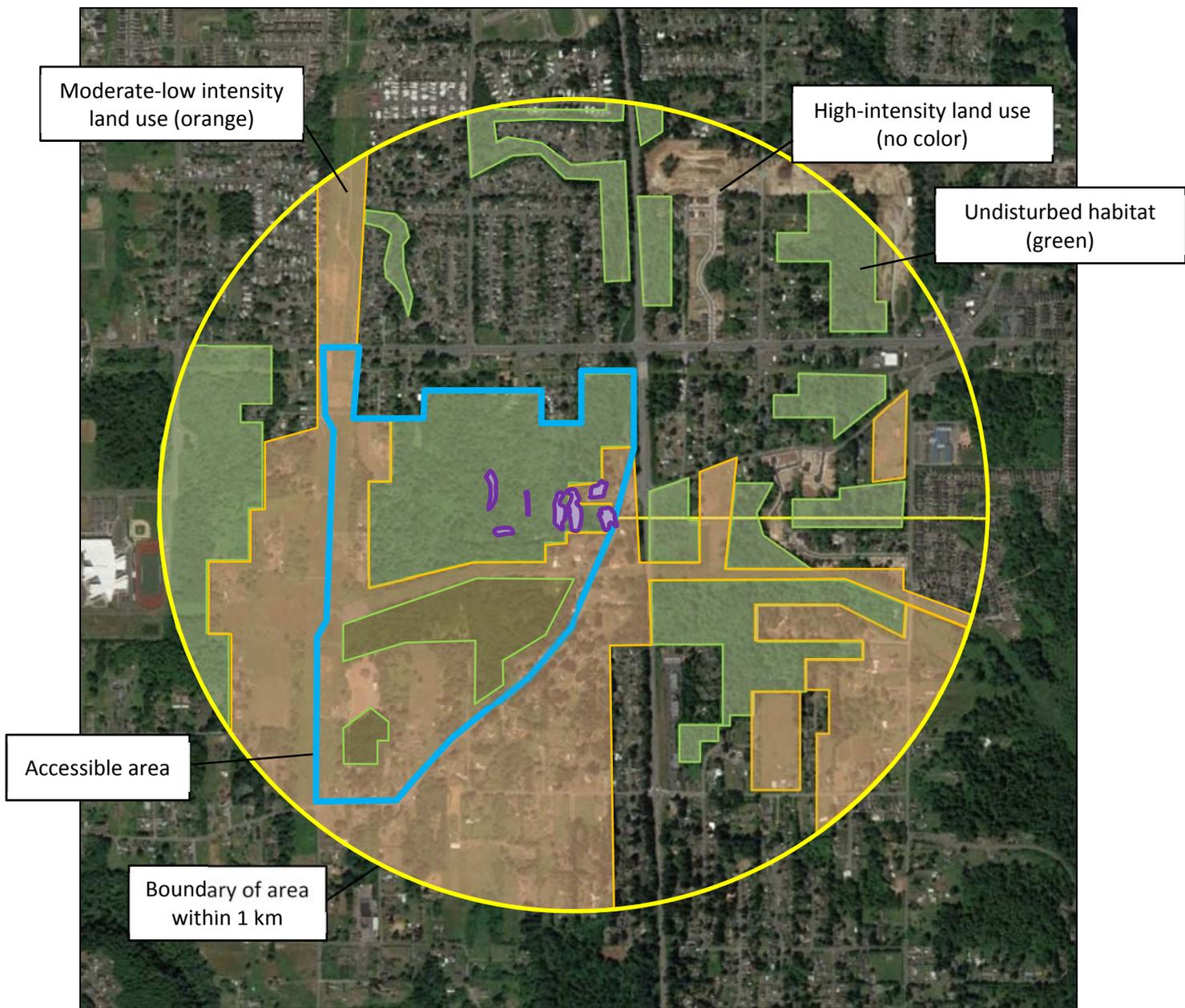


Figure H-5. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2.2, H2.3

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

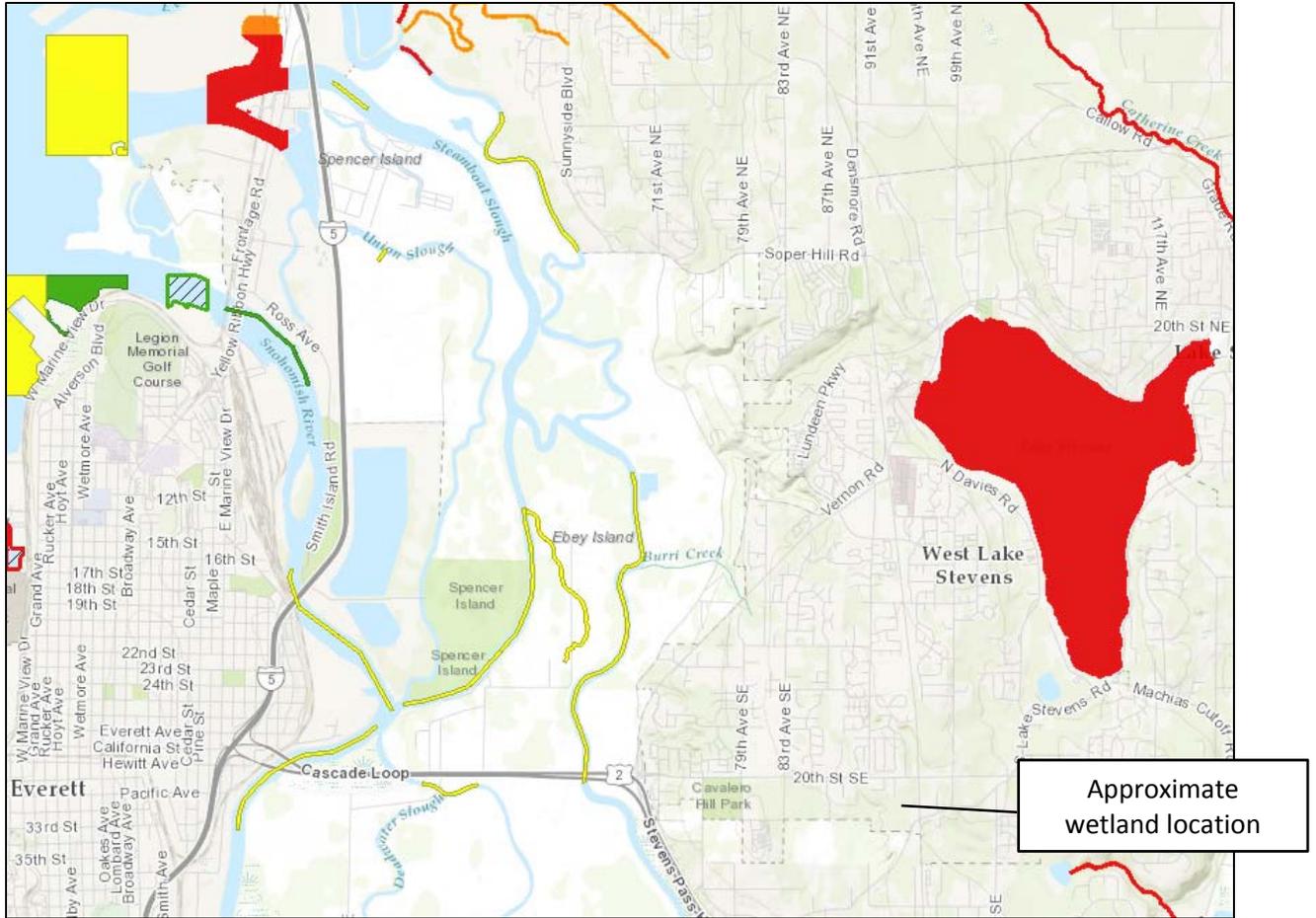


Figure H-6. Screen-capture of 303(d) listed waters in basin – R3.1

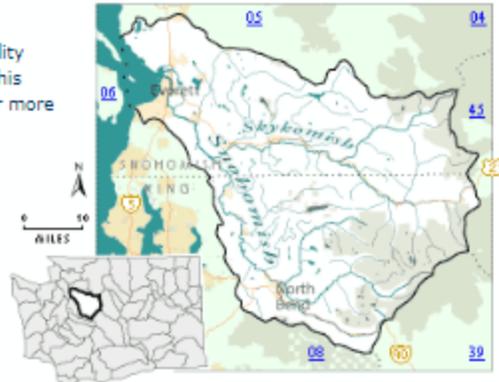
Features depicted are not to scale. Sketches are based on available data and best professional judgment.

# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 7: Snohomish

## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



### Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Lake Loma</a>	Total Phosphorus	Straight to implementation project under development	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Snohomish River</a>	<a href="#">French Creek / Pilchuck River</a>	Under development	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Dissolved Oxygen</li> <li>• Temperature</li> </ul>		
	<a href="#">Dioxin</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<a href="#">Estuary</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Ammonia</li> <li>• BOD</li> </ul>		
<a href="#">Tributaries</a>	<ul style="list-style-type: none"> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Tributaries: <ul style="list-style-type: none"> <li>• Allen Creek</li> <li>• Quilceda Creek</li> <li>• French Creek</li> <li>• Woods Creek</li> <li>• Pilchuck River</li> <li>• Marshlands (Wood Creek) {2}</li> </ul>		
<a href="#">Snoqualmie River</a>	<ul style="list-style-type: none"> <li>• Ammonia-N</li> <li>• BOD (5-day)</li> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Temperature	EPA approved Has an implementation plan	

Figure H-7. Screen-capture of TMDL list for WRIA in which unit is found – R3.2, R3.3

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

Wetland name or number: Wetland J

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland J      Date of site visit: July 25, 2017      Rated by: S. Payne, R. Kahlo

Trained by Ecology?  Y  N      Date of training: June 2017

HGM Class used for rating: Depressional

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: Bing Maps, Snohomish County PDS Mapper

## OVERALL WETLAND CATEGORY (based on functions or special characteristics 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	(M)	L	H	(M)	L	H	M	(L)	
Landscape Potential	H	M	(L)	H	M	(L)	H	(M)	L	
Value	H	(M)	L	(H)	M	L	(H)	M	L	
Score Based on Ratings	5			6			6			TOTAL 17

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

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

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

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

Wetland name or number: Wetland J

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

### Depressional Wetlands

<b>Map of:</b>	<b>To answer questions:</b>	<b>Figure #</b>
Cowardin plant classes	D 1.3, H 1.1, H 1.4	J-1
Hydroperiods	D 1.4, H 1.2	J-2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	J-2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	J-2
Map of the contributing basin	D 4.3, D 5.3	J-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	J-4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	J-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	J-6

## HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

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

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

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

**YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number: Wetland J

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

<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. <b>Characteristics of surface water outflows from the wetland:</b>		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		3
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2		
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. <b>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</b> <input type="checkbox"/> Yes = 4 <input checked="" type="checkbox"/> No = 0		0
D 1.3. <b>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</b>		
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		5
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > 1/2 of area points = 3		
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1		
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0		
D 1.4. <b>Characteristics of seasonal ponding or inundation:</b> <i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
<input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		2
<input checked="" type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2		
<input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0		
<b>Total for D 1</b>	Add the points in the boxes above	10

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 2</b>	Add the points in the boxes above	0

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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)?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 3</b>	Add the points in the boxes above	1

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

*Record the rating on the first page*

**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>		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet).	points = 4	4
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet.	points = 7	3
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet.	points = 5	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland.	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit.	points = 5	3
<input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit.	points = 0	
<input type="checkbox"/> 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>10</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>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?</b>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>0</b>

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

Record the rating on the first page

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</b>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• <input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	2
• <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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.		
<i>Explain why: ....</i>	points = 0	
<input type="checkbox"/> 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>		
	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<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

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

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

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

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

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

0

H 1.2. Hydroperiods  
 Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

Permanently flooded or inundated 4 or more types present: points = 3  
 Seasonally flooded or inundated 3 types present: points = 2  
 Occasionally flooded or inundated 2 types present: points = 1  
 Saturated only 1 type present: points = 0  
 Permanently flowing stream or river in, or adjacent to, the wetland  
 Seasonally flowing stream in, or adjacent to, the wetland  
 **Lake Fringe wetland** **2 points**  
 **Freshwater tidal wetland** **2 points**

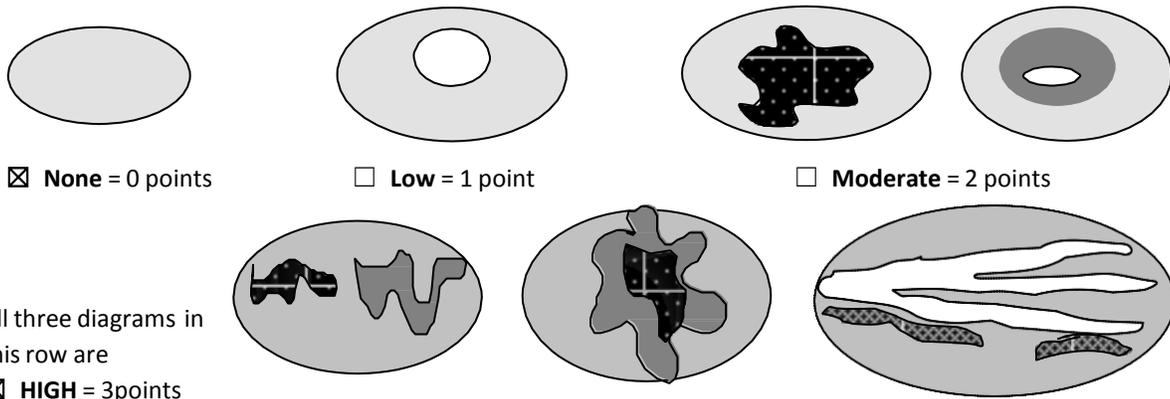
0

H 1.3. Richness of plant species  
 Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.  
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

1

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.*



0

Wetland name or number: Wetland J

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

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).  <i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i>          If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  <i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	0
<p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span></p>	3

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

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

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

Wetland name or number: Wetland J

## 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.

**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> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="margin-left: 100px;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b></span> <input checked="" type="checkbox"/> 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;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> 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> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)  <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No= <b>Category II</b></span></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? <span style="margin-left: 100px;"><input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No – Go to <b>SC 2.3</b></span></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?   <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <input checked="" type="checkbox"/> 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?   <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a> <span style="margin-left: 100px;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <input checked="" type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <input checked="" type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No – Go to <b>SC 3.4</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No = <b>Is not a</b></span></p>	<b>Cat. I</b>



# WETLAND J (DEPRESSIONAL)



Figure J-1. Cowardin plant classes – D1.3, H1.1, H1.4

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

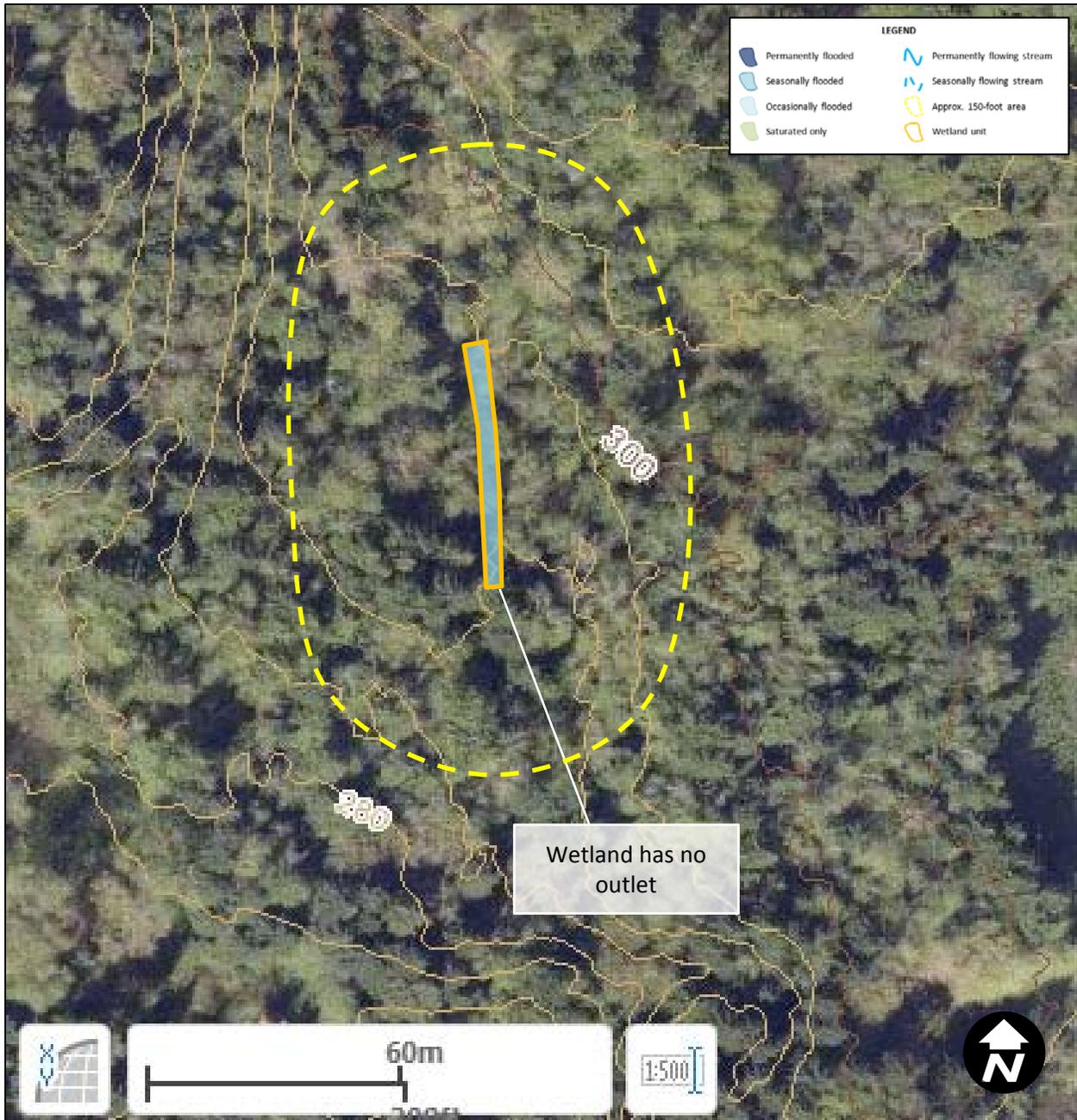


Figure J-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

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



Figure J-3. Map of the contributing basin – D4. 3, D5.3

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

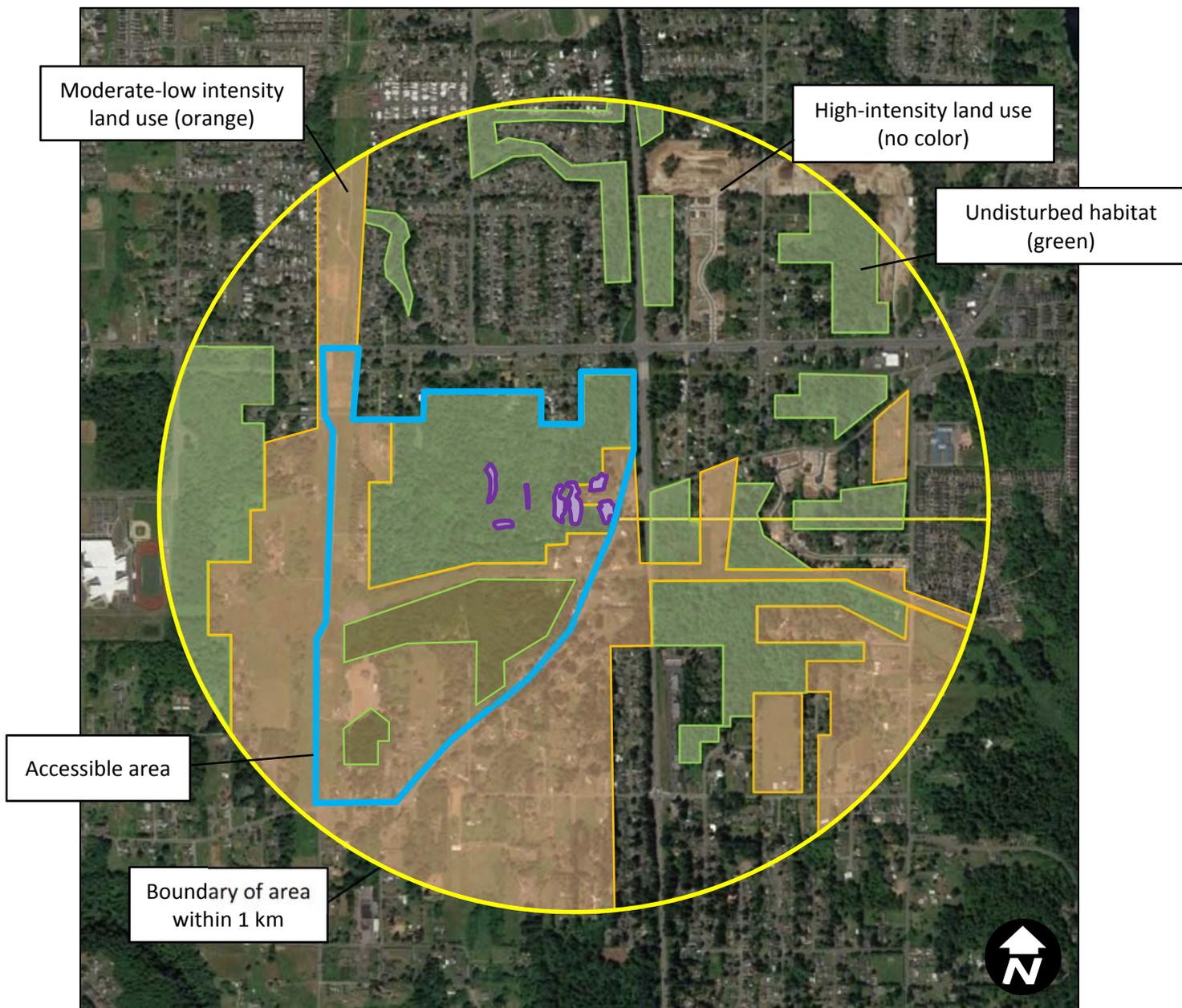


Figure J-4. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2.2, H2.3

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

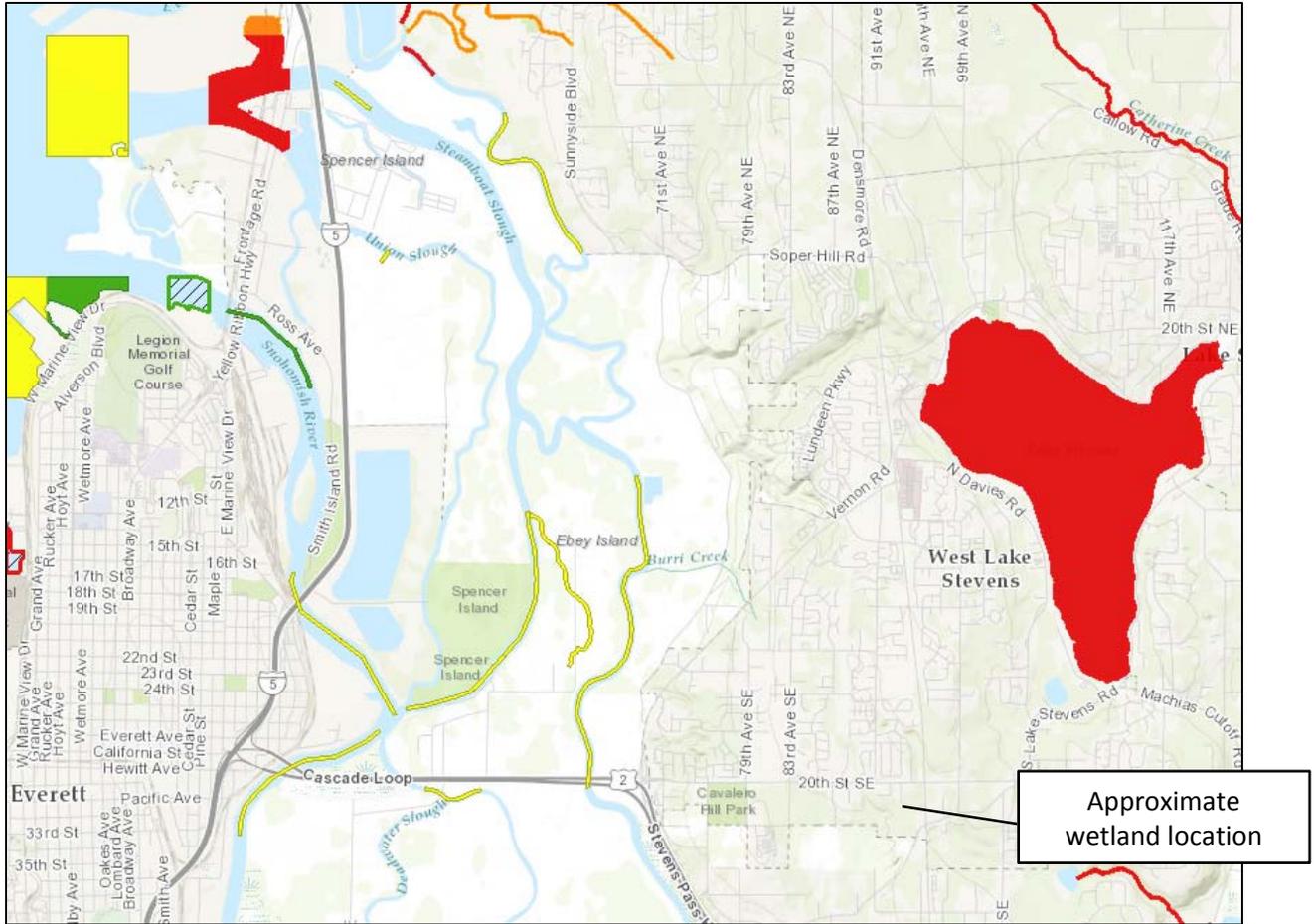


Figure J-5. Screen-capture of 303(d) listed waters in basin – D3.1, D3.2

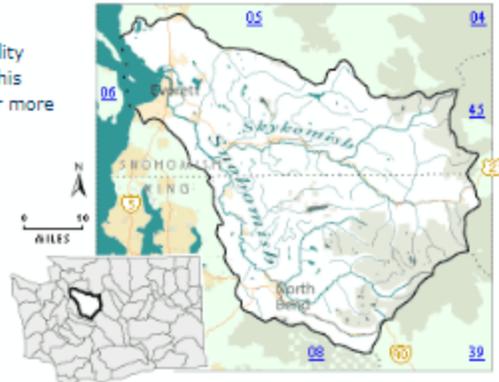
Features depicted are not to scale. Sketches are based on available data and best professional judgment.

# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 7: Snohomish

## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



### Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Lake Loma</a>	Total Phosphorus	Straight to implementation project under development	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Snohomish River</a>	<a href="#">French Creek / Pilchuck River</a>	Under development	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Dissolved Oxygen</li> <li>• Temperature</li> </ul>		
	<a href="#">Dioxin</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<a href="#">Estuary</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Ammonia</li> <li>• BOD</li> </ul>		
<a href="#">Tributaries</a>	<ul style="list-style-type: none"> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Tributaries: <ul style="list-style-type: none"> <li>• Allen Creek</li> <li>• Quilceda Creek</li> <li>• French Creek</li> <li>• Woods Creek</li> <li>• Pilchuck River</li> <li>• Marshlands (Wood Creek) {2}</li> </ul>		
<a href="#">Snoqualmie River</a>	<ul style="list-style-type: none"> <li>• Ammonia-N</li> <li>• BOD (5-day)</li> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Temperature	EPA approved Has an implementation plan	

Figure J-6. Screen-capture of TMDL list for WRIA in which unit is found – D3.3

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

Revised May 30, 2018

**WETLAND AND STREAM DELINEATION REPORT**

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Report.

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# WETLAND AND STREAM DELINEATION REPORT

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## 24<sup>TH</sup> STREET SOUTHEAST EXTENSION

### 1 EXECUTIVE SUMMARY

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A wetland and stream delineation study was previously conducted on undeveloped land within the City of Lake Stevens for a new road construction project. This report has been provided to confirm the boundaries of that previous wetland and stream delineation, as well as to classify wetlands according to the updated 2014 Wetland Rating System for Western Washington.

Flags from the previous delineation studies remaining onsite allowed us to confirm the accuracy of the wetland boundaries. Most of the wetlands are located at the bases of slopes that define the wetland boundaries and are therefore topographically confined and not likely to change over time. Wetlands A, D, E, F, and H have boundaries that were found to be unchanged. A previously delineated wetland, Wetland I, does not meet wetland criteria, and should not be considered a wetland for regulatory purposes. One additional wetland, Wetland J, was identified and flagged onsite. Observations of flagging from the previous delineation indicate the Mosher Creek ordinary high water mark has not changed since the previous delineation.

### 2 INTRODUCTION

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#### 2.1 Purpose

The City of Lake Stevens (City) is proposing to add an extension to 24<sup>th</sup> Street Southeast through primarily undeveloped land. Wetlands within the preliminary road alignment were previously delineated by Altmann Oliver Associates, LLC and were classified in a wetland rating system that has become obsolete. The purpose of this report is to verify the accuracy of delineated wetland boundaries, delineate wetlands that may have been missed, and reclassify wetlands according to the updated 2014 Wetland Rating System.

## 2.2 Study Area / Location Map

The study area includes the footprint of the proposed roadway and detention pond located near the intersection of State Route 9 and 20<sup>th</sup> Street Southeast in the City of Lake Stevens, Washington (Figure 1).

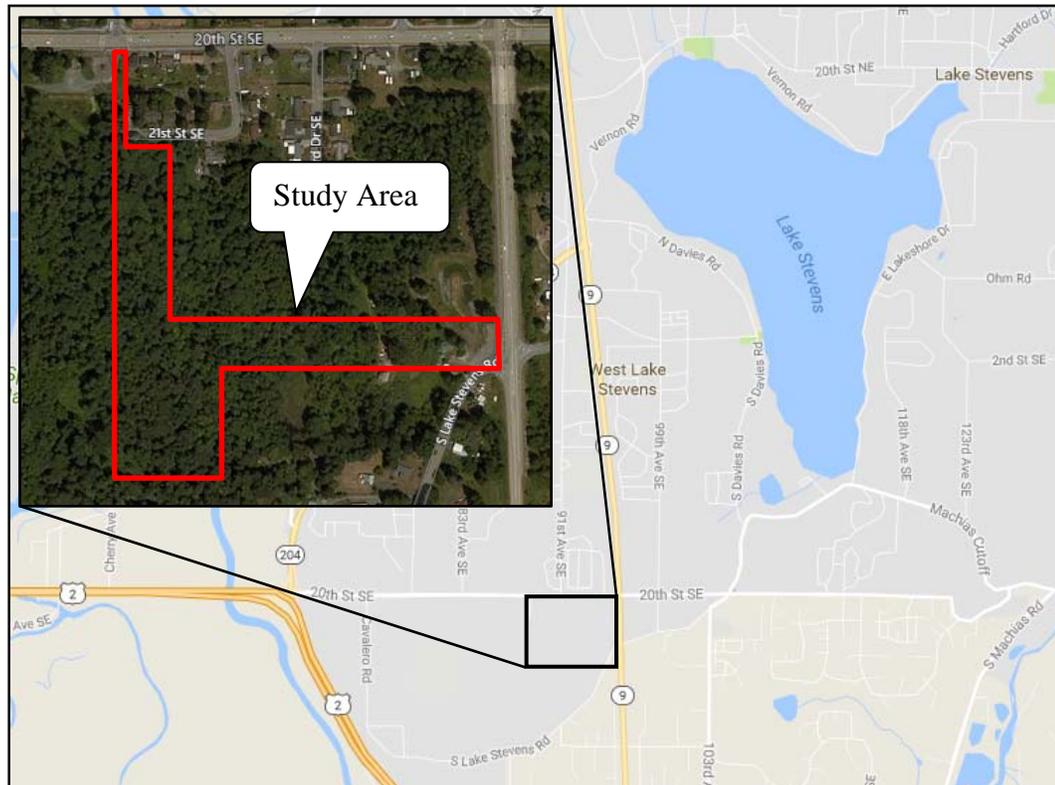


Figure 1. Study area and vicinity map.

# 3 METHODS

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## 3.1 Public Domain Information

Public-domain information on the subject properties was reviewed for this delineation study and included the following:

- USDA Natural Resources Conservation Service, Web Soil Survey (WSS) application
- U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps
- Washington Department of Fish and Wildlife interactive mapping programs (PHS on the Web, SalmonScape)

- Washington Department of Natural Resources, Forest Practices Application Mapping Tool (FPARS)
- Washington Department of Natural Resources, Wetlands of High Conservation Value Map Viewer
- Snohomish County PDS Web Map
- City of Lake Stevens maps

## 3.2 Wetlands

The study area was evaluated for wetlands using methodology from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (Regional Supplement) (US Army Corps of Engineers [Corps] May 2010). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Regional Supplement were determined to be wetland. Soil, vegetation, and hydrologic parameters were sampled at several locations in the study area to make the determination. Wetland data were recorded in locations where the findings of this study conflict with the findings of the previous study.

Identified wetlands within the study area were classified using the *2014 Update to the Western Washington Wetland Rating System* (Publication #14-06-029) (Rating System).

Characterization of climatic conditions for precipitation was determined using the WETS table methodology from the USDA NRCS document Part 650 Engineering Field Handbook, National Engineering Handbook, Hydrology Tools for Wetland Identification and Analysis, Chapter 19 (September 2015). The Seattle-Tacoma International AP station as recorded by NOAA (<http://agacis.rcc-acis.org/>) was used as a source for precipitation data. The WETS table methodology uses climate data from the three months prior to the site visit month to determine if normal conditions are present.

## 3.3 Streams

The study area was also evaluated for streams based on the presence or absence of an ordinary high water mark (OHWM) as defined by the Revised Code of Washington (RCW) 90.58.030 and the Washington Administrative Code (WAC) 220-660-030. The OHWM edge was located by examining the bed and bank physical characteristics and vegetation.

Onsite streams were classified using the stream typing system established by WAC 222-16-030, per City regulations.

# 4 FINDINGS

## 4.1 Site Information

The project site is located in sub-basins HUC 171100110203 and HUC 171100110103, within the Snohomish River Watershed Resource Inventory Area (WRIA 7); Township 29 North; Range 5 East; Section 25. Other than a residential property on the eastern boundary, the entire study area is within undeveloped forest land. Topography generally slopes from north to south, defining a southerly flow for streams within the study area. Wetlands were typically observed in topographic low points at the bases of mounds and hills.

As previously mentioned, public-domain information on the subject properties was reviewed for this study. A summary of findings is provided in Table 1.

Table 1. Summary of online mapping and inventory resources.

Resource	Summary
USDA Natural Resources Conservation Service, Web Soil Survey (WSS) application	Tokol gravelly medial loam, 0 to 8 and 8 to 15 percent slopes; Mukilteo muck
U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps	Freshwater Emergent Wetland, Freshwater Pond
Washington Department of Fish and Wildlife, Priority Habitats and Species (PHS on the Web)	Freshwater Emergent Wetland, Freshwater Pond
Washington Department of Fish and Wildlife, SalmonScape	No salmonids mapped near project site
Washington Department of Natural Resources, Forest Practices Application Mapping Tool (FPARS)	No mapped streams in study area
Snohomish County PDS Web Map	Mosher Creek (Unknown Stream Type), Mapped Wetlands
City of Lake Stevens maps	Mosher Creek, Mapped Wetlands

## 4.2 Wetlands

### 4.2.1 Wetland A

Wetland A is a riverine wetland associated with Mosher Creek on the western edge of the study area. Flagging from the previous delineation was still present during the site visit at the correct wetland boundary, indicating that the wetland area has not changed since the previous delineation.

Cowardin vegetation classifications in the wetland include palustrine scrub-shrub and forested. The forested area consists of western red cedar and western hemlock with an understory of salmonberry, vine maple, sword fern, skunk cabbage, and false lily of the valley. Plants within the wetland meet the hydrophytic vegetation indicator Dominance Test.

Soils are black and have a high organic content composed of mineral or modified mucks. Hydrology is provided primarily by overbank flooding from Mosher Creek and associated hyporheic groundwater. Areas within the wetland were saturated and had a groundwater table at or near the surface at the time of the inspection.



Figure 2. Wetland vegetation including skunk cabbage in the Mosher Creek channel through Wetland A.

### 4.2.2 Wetland D

Wetland D is a depressional wetland near South Lake Stevens Road. Although former wetland delineation flags are no longer present at this wetland, previously mapped wetlands are consistent with what was observed in the field. The wetland edge is defined by an abrupt change in topography.

Cowardin vegetation classifications in the wetland include palustrine emergent, scrub-shrub, and forested. The forested area consists of black cottonwood, red alder, and Pacific willow with an understory of Himalayan blackberry, field horsetail, creeping buttercup, red-osier dogwood, and Douglas spiraea. Emergent areas were dominated by primarily field horsetail and reed canarygrass.

Wetland hydrology was evident from saturation observed during the site visit. The wetland drains east under South Lake Stevens Road through a culvert.



Figure 3. Fields of reed canarygrass and Douglas spiraea in Wetland D.

### 4.2.3 Wetland E

Wetland E is depressional wetland near the center of the study area that is primarily forested and includes a relatively large ponded area. Some flags from previous delineations were found near the wetland boundary in the correct

location, confirming the wetland boundary has not changed. The Wetland E boundary is defined by an abrupt change in topography and is unlikely to change over time.

Cowardin vegetation classifications include palustrine aquatic bed, scrub-shrub, and forested. The ponded area is entirely covered in yellow pond lily (*Nuphar Polysepala*). The forested community consists of black cottonwood, red alder, and Pacific willow with an understory of Sitka willow, salmonberry, Douglas spiraea, cattail, and reed canarygrass.

Soils are primarily black mineral with a high organic content and redoximorphic features near the surface. Hydrology was evident from inundation, saturation, and high water table observed at the time of the study.



Figure 4. Ponded area behind cattail and reed canarygrass at Wetland E.

#### **4.2.4 Wetland F**

Wetland F is a depressional wetland on the eastern part of the study area. Wetland delineation flags from former studies were found at the wetland boundary in the correct location, indicating that the boundary has not changed since previously surveyed. The wetland is located along an abrupt break in topography and its boundary is not likely to change over time.

Cowardin vegetation communities include palustrine scrub-shrub and forested. The forest community is dominated by black cottonwood, red alder, and Pacific willow with an understory of Sitka willow, salmonberry, Douglas spiraea, red-osier dogwood, skunk cabbage, and reed canarygrass.

Soils are black mineral with a high organic content and redoximorphic features near the surface. Wetland hydrology was evident from saturation and a high water table observed at the time of the study.



Figure 5. Looking east into a forested area of Wetland F with a dense shrub understory.

#### **4.2.5 Wetland H**

Wetland H is a slope and riverine wetland surrounding Mosher Creek. Remaining flags from a former delineation indicates that the boundary has not changed.

The Cowardin vegetative classifications for the wetland include palustrine scrub-shrub and forested. The forest community is dominated by western red cedar and red alder with an understory of salmonberry, vine maple, skunk cabbage, water parsley, sword fern, and lady fern.

Soils are black mineral with redox masked by high organic content. Wetland hydrology was evident from saturation and a high water table observed at the time of our study.



Figure 6. Close up of the wet area of Mosher Creek through Wetland H.

#### **4.2.6 Wetland I**

Nearly all Wetland I flags were found during field investigations, however, the previously delineated area did not meet technical wetland criteria. Data point DP-4 was recorded to document the lack of wetland conditions.

Dominant vegetation within the previously delineated boundary includes a combination of facultative plants (species equally likely to occur in wetlands and non-wetlands) and facultative upland plants (species that usually occur in non-wetlands). The area is forested with a canopy of western red cedar and black cottonwood and an understory dominated by vine maple, osoberry, salmonberry, sword fern, and false lily of the valley. The plant community marginally met the hydrophytic vegetation indicator Dominance Test, depending on the precise location. However, most of the dominant plants are ubiquitous across Western Washington and occur in wetlands and non-wetlands with equal frequency. Remaining dominant plants (sword fern, osoberry) are

generally associated with non-wetland areas. Devils club, spiny wood fern, and stink currant were also found sparsely throughout the flagged area.

Soil investigation included data collection at numerous sub-surface pits to determine if hydric soils were present. Of these pits, DP-4 was the most representative. Although tree and shrub roots are very dense in the area, making it difficult to penetrate the soil, pits were opened at various locations. Soils are dark (5YR 2.5/2 and 10YR 2/2) and lacked redoximorphic indicators for wetland soils.

No observations or indicators of wetland hydrology were found and soils were completely dry to a depth exceeding 18 inches in all observed pits, including the recorded data point DP-4.

Since the area previously flagged as Wetland I only marginally met the vegetation criterion, did not have hydric soils or wetland hydrology indicators, it does not meet the technical wetland criteria.



Figure 7. Typical vegetation community in Wetland I.

#### **4.2.7 Wetland J**

Wetland J was not included in the previous delineation. Wetland J is located within a remnant ditch or stream channel that has been impounded behind an old road crossing. The feature has steep, straight sides that appear to have been manually excavated. The wetland boundary was marked with pink and black

flagging. Although it meets wetland hydrology criteria, it showed no signs of flowing water such as scour or hydraulically sorted sediments.

The Cowardin vegetation classification for the wetland is palustrine forested, since many of the trees are rooted within the wetland area. Dominant plant species include red alder, lady fern, skunk cabbage, and salmonberry. The plant community meet the hydrophytic vegetation indicator Dominance Test.

Soils within the wetland have a dark top layer (10YR 2/2) over a layer with a depleted matrix and abundant redoximorphic iron concentrations. Soils were very moist but not saturated during the site visit but met secondary wetland hydrology indicators Water Stained Leaves (B9), Geomorphic Position (D2), and FAC-Neutral Test (D5).

While Wetland J appears to be located in an excavated or partially excavated, ditch-like feature, its historical status is not known, and the feature is not actively maintained as a stormwater conveyance. Therefore, Wetland J is likely regulated as a jurisdictional wetland.



Figure 8. Skunk cabbage growing in Wetland J.

### 4.3 Marginal Wetland Areas

The remnant stream channel or ditch of Wetland J continues on the other side of the old road in a small depression meeting wetland hydric soil and hydrology

indicators. Since this area is unvegetated, it does not meet wetland criteria. An old bridge across the feature has collapsed and soil has accumulated on top, filling the ditch and appearing to stop any flow moving from up-gradient areas.

#### 4.4 Non-wetland Areas

Non-wetland areas within the study area are forested on gently rolling hills upslope from wetland areas. Forests are dominated by Douglas-fir, western red cedar, and red alder with an understory of vine maple, salmonberry, sword fern, and osoberry. These areas generally lack hydric soil indicators and do not feature wetland hydrology indicators.

#### 4.5 Mosher Creek

Mosher Creek is a small stream flowing south through the study area. City maps indicate the stream ends when it intersects with South Lake Stevens Road, however, it is likely that it eventually drains into Ebey Slough. The stream was approximately 10 feet wide between ordinary high water marks and a few inches deep during the site visit. It was flowing within Wetland A but not Wetland H during field investigations. Mosher Creek is not depicted on most public stream inventories (SalmonScape, PHS Data, FPARS); it is depicted on Snohomish County's SnoScape as fish-bearing just downstream of the study area and "unknown" within the study area. However, Mosher Creek is presumed to be a fish-bearing stream in the study area due to its size, flow, gradient, and lack of barriers to fish passage.

#### 4.6 Local Regulations

Critical areas in Lake Stevens are regulated by Lake Stevens Municipal Code (LSMC) Chapter 14.88, Critical areas. **Notably, amendments to LSMC Chapter 14.88 are currently under consideration by the City Council. Proposed amendments in Ordinance No. 984 would set forth major changes to LSMC Chapter 14.88 that could impact the project.** The timeline for adoption of Ordinance No. 984 is unknown. This section includes a review of both current and proposed critical areas regulations.

##### 4.6.1 Buffers and Setbacks

Under both the current and proposed regulations, wetlands are rated as one of four categories based on the Rating System. Under the Rating System, Wetlands A, D, E, and H are classified as Category II and Wetlands F and J are classified as Category III.

Under the current regulations, wetland buffer widths are based on a combination of the wetland category, habitat score (a component of the rating system), and the adjacent land use intensity. Based upon the fact that a new road corridor will

be a high intensity land use, and that all wetlands have a moderate habitat score, Wetlands A, D, E, F, H, and J currently require a buffer of 95 feet.

Under the proposed regulations, wetland buffers are based on wetland category, habitat score, and buffer condition. The standard buffer width may be used when the buffer is vegetated or will be planted; otherwise, an increased buffer is required when limited vegetation exists or no mitigation is proposed to enhance buffer functions. Assuming use of the standard buffer width, Wetlands A, D, E, H and J would require a 165-foot buffer, and Wetland F would require a 105-foot buffer.

Stream buffers are determined based on the classification of the aquatic area. Mosher Creek meets the criteria of a Type F stream since it provides fish habitat. Under both the current and proposed regulations, Mosher Creek requires a 100-foot buffer.

It is noted that the City's current and proposed critical areas regulations also require that stream buffers within a ravine with banks greater than 10 feet extend 25 feet from the top of the ravine (LSMC 14.88.430[c][1]). Within the study area, Mosher Creek flows through areas with ravine-like characteristics, and non-ravine areas. However, the LSMC does not provide a definition for a ravine. The NRCS defines a ravine as "a small stream channel; narrow, steep-sided, commonly V-shaped in cross section and longer than a gully, cut in unconsolidated materials" (USDA NRCS 2017). The City's critical areas regulations state "Steep slopes shall include any slope greater than or equal to 40 percent" (LSMC 14.88.600[b][3][ii]). Slopes near Mosher Creek are estimated to be no more than 25 percent (based on estimates from Snohomish County PDS elevation contours). Since the area does not have steep slopes, it does not meet the geologic definition of a ravine. Therefore, LSMC 14.88.430(c)(1) is not applicable when considering buffers for the proposed project.

Wetland and stream buffers under both current and proposed critical area regulations are set forth below in Table 2.

Further, under both the current and proposed regulations, Lake Stevens requires a 10-foot building setback from the edges of all critical area buffers. Notably, building setbacks may contain impervious ground surfaces with specified drainage provisions (LSMC 14.88.285).

Table 2. Summary of wetland rating scores, classification and standard buffer widths under current and proposed critical areas regulations.

	Water Quality	Hydrologic	Habitat	Total	Category or Type	Standard Buffer Width under Current Code (feet) <sup>1</sup>	Standard Buffer Width under Proposed Code (feet) <sup>2</sup>
Wetland A	6	8	7	21	II	95	165
Wetland D	7	7	6	20	II	95	165
Wetland E	6	7	7	20	II	95	165
Wetland F	6	7	5	18	III	95	105
Wetland H	6	8	7	21	II	95	165
Wetland J	5	6	6	17	III	95	165
Mosher Creek	N/A	N/A	N/A	N/A	F	100	100

<sup>1</sup> Assumes high intensity adjacent land use

<sup>2</sup> Assumes buffer is vegetated or will be planted

#### 4.6.2 Avoidance and Minimization

Under both the current and proposed critical area regulations, a project proponent must make all reasonable efforts to avoid and minimize impacts to critical areas and buffers (LSMC 14.88.010[a]).

The proposed regulations include a table of measures (Table 14.88-III) intended to minimize impacts to wetlands that must be implemented if applicable to a specific proposal. This table is reproduced below for ease of reference.

Table 3. Required measures to minimize impacts to wetlands under proposed critical areas regulations.

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> <li>• Direct lights away from wetland</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Locate activity that generates noise away from wetland</li> </ul>

	<ul style="list-style-type: none"> <li>• If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source</li> <li>• For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10-foot heavily vegetated buffer strip immediately adjacent to the outer wetland buffer</li> </ul>
Toxic runoff	<ul style="list-style-type: none"> <li>• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered</li> <li>• Establish covenants limiting use of pesticides within 150-feet of wetland</li> <li>• Apply integrated pest management</li> </ul>
Stormwater runoff	<ul style="list-style-type: none"> <li>• Retrofit stormwater detention and treatment for roads and existing adjacent development</li> <li>• Prevent channelized flow from lawns that directly enters the buffer</li> <li>• Use Low Intensity Development techniques (for more information refer to the drainage ordinance and manual)</li> </ul>
Change in water regime	<ul style="list-style-type: none"> <li>• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns</li> </ul>
Pets and human disturbance	<ul style="list-style-type: none"> <li>• Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion</li> <li>• Place wetland and its buffer in a separate tract or protect with a conservation easement</li> </ul>
Dust	<ul style="list-style-type: none"> <li>• Use best management practices to control dust</li> </ul>

### 4.6.3 Allowed Activities and Uses

Under both the current and proposed critical area regulations, LSMC 14.88.220 sets forth activities that are allowed in all types of critical areas and/or their buffers, subject to certain conditions. Allowed activities that may be pertinent to the proposed road project are presented in the bulleted list below. These allowed activities are slightly different under the current and proposed regulations. Key differences between the current and proposed regulations are noted.

- Site investigative work necessary for land use application submittals, such as surveys, soil logs, percolation tests and other related activities (impacts must be minimized and disturbed areas must be immediately restored).
- Installation or construction of City road right-of-way; or installation, replacement, operation, repair, alteration, or relocation of all water, natural gas, cable communication, telephone, or other utility lines, pipes,

mains, equipment or appurtenances, not including substations or other buildings, only when required by the City and approved by the Planning and Community Development Director and when avoidance of critical areas and impact minimization has been addressed during the siting of roads and other utilities and a detailed report/mitigation plan is submitted, reviewed, and approved by the City prior to permit issuance or land use approval.

- Where buffers and setbacks are larger than 50 feet and slopes are less than 15 percent, stormwater management facilities, limited to stormwater dispersion outfalls and bioswales, may be allowed within the outer 25 percent of the buffer, when location of such facilities will not degrade the function or values of the wetland. Note that under the proposed regulations, the text prior to the word “dispersion” has been removed.

The current and proposed critical areas regulations also include allowances specific to wetlands and streams that may be pertinent to the proposed road project.

The current regulations allow the following uses in a wetland buffer (LSMC 14.88.830[e]):

- For Category III and IV wetlands, stormwater management facilities restricted to the outer 25 percent of the buffer around the wetland.
- For Category III and IV wetlands, development having no feasible alternative location.

The above wetland buffer allowances are not included in the proposed regulations. The proposed regulations include the following allowance specific to wetlands and buffers (LSMC 14.88.820[c]):

- Stormwater management facilities. A wetland or its buffer can be physically or hydrologically altered to meet the requirements of an LID, Runoff Treatment or Flow Control BMP if the following criteria are met:
  1. The location of the stormwater management facility is restricted to the outer 25 percent of the buffer around the wetland;
  2. There will be “no net loss” of functions and values of the wetland;
  3. The wetland does not contain a breeding population of any native amphibian species;
  4. The hydrologic functions of the wetland can be improved;
  5. The wetland lies in the natural routing of the runoff, and the discharge follows the natural routing, and

6. All regulations regarding stormwater and wetland management are followed, including but not limited to local and state wetland and stormwater codes, manuals, and permits;
7. Modifications that alter the structure of a wetland or its soils will require permits. Existing functions and values that are lost would have to be compensated/replaced.
8. Stormwater LID BMPs required as part of New and Redevelopment projects can be considered within wetlands and their buffers. However, these areas may contain features that render LID BMPs infeasible. A site-specific characterization is required to determine if an LID BMP is feasible at the project site.

#### 4.6.4 Buffer Modifications

Under both the current and proposed regulations, wetland and aquatic area buffers may be modified through buffer averaging. Buffers may be averaged when certain criteria are met; however, in no case may averaging reduce the buffer by more than 25 percent of the standard buffer width.

Also, under both the current and proposed codes, wetland buffers may be reduced by 25 percent when certain criteria are met; however, in no case may a reduction reduce the buffer by more than 25 percent of the standard buffer width.

#### 4.6.5 Direct Wetland Impacts

Direct impacts to wetland areas, including allowed impacts, require the following mitigation ratios, under both the current and proposed critical areas regulations (LSMC 14.88.840[f]). However, under the proposed regulations, the “Re-establishment or Creation (R/C) and Enhancement (E)” column has been removed.

Table 4. Wetland mitigation ratios (LMSC Table 14.88-IV).

Affected Wetland	Mitigation Type and Ratio			
Category	Re-establishment or Wetland Creation	Rehabilitation	Re-establishment or Creation (R/C) and Enhancement (E)	Enhancement Only

Category IV	1.5:1	3:1	1:1 R/C and 2:1 E	6:1
Category III	2:1	4:1	1:1 R/C and 2:1 E	8:1
Category II	3:1	6:1	1:1 R/C and 4:1 E	12:1
Category I – Forested	6:1	12:1	1:1 R/C and 10:1 E	24:1
Category I – Score Based	4:1	8:1	1:1 R/C and 10:1 E	16:1
Category I – Bog	Not considered possible	N/A	N/A	N/A

The proposed regulations also clarify that impacts to wetland buffers must be compensated for at a 1:1 ratio.

Finally, the proposed regulations explicitly allow the use of a mitigation bank or in-lieu fee mitigation program to provide mitigation (LSMC 14.88.276).

## 4.7 State and Federal Regulations

Wetlands are also regulated by the Corps under section 404 of the Clean Water Act. Any proposed filling or other direct impacts to Waters of the U.S., including wetlands (except isolated wetlands), would require notification and permits from the Corps. With the exception of Wetland J, none of the onsite wetlands appear to have characteristics of isolated wetlands. Wetland J may be considered isolated, as no surface water connection is present to any Waters of the U.S. in our opinion. A formal isolated status decision can be requested through the jurisdictional determination process.

Federally permitted actions that could affect endangered species may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. Compliance with the Endangered Species Act must be demonstrated for activities within jurisdictional wetlands and the 100-year floodplain. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology and a cultural resource study in accordance with Section 106 of the National Historic Preservation Act.

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

## 5 CONCLUSIONS

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This report documents the presence of six wetlands and one stream within the study area. The current road alignment will intersect with wetlands and wetland buffer, which will require mitigation complying with the City, and state and federal regulations.

The information contained in this report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state and federal regulatory authorities. No other warranty, expressed or implied, is made.

# REFERENCES

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Code Publishing Company. 2017. Lake Stevens Municipal Code. Available online at:  
<http://www.codepublishing.com/WA/LakeStevens/>.

Corps (US Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

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

Hruby, T. (2014). Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2017. National Soil Survey Handbook, Part 629. Available online at:  
[http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054242).

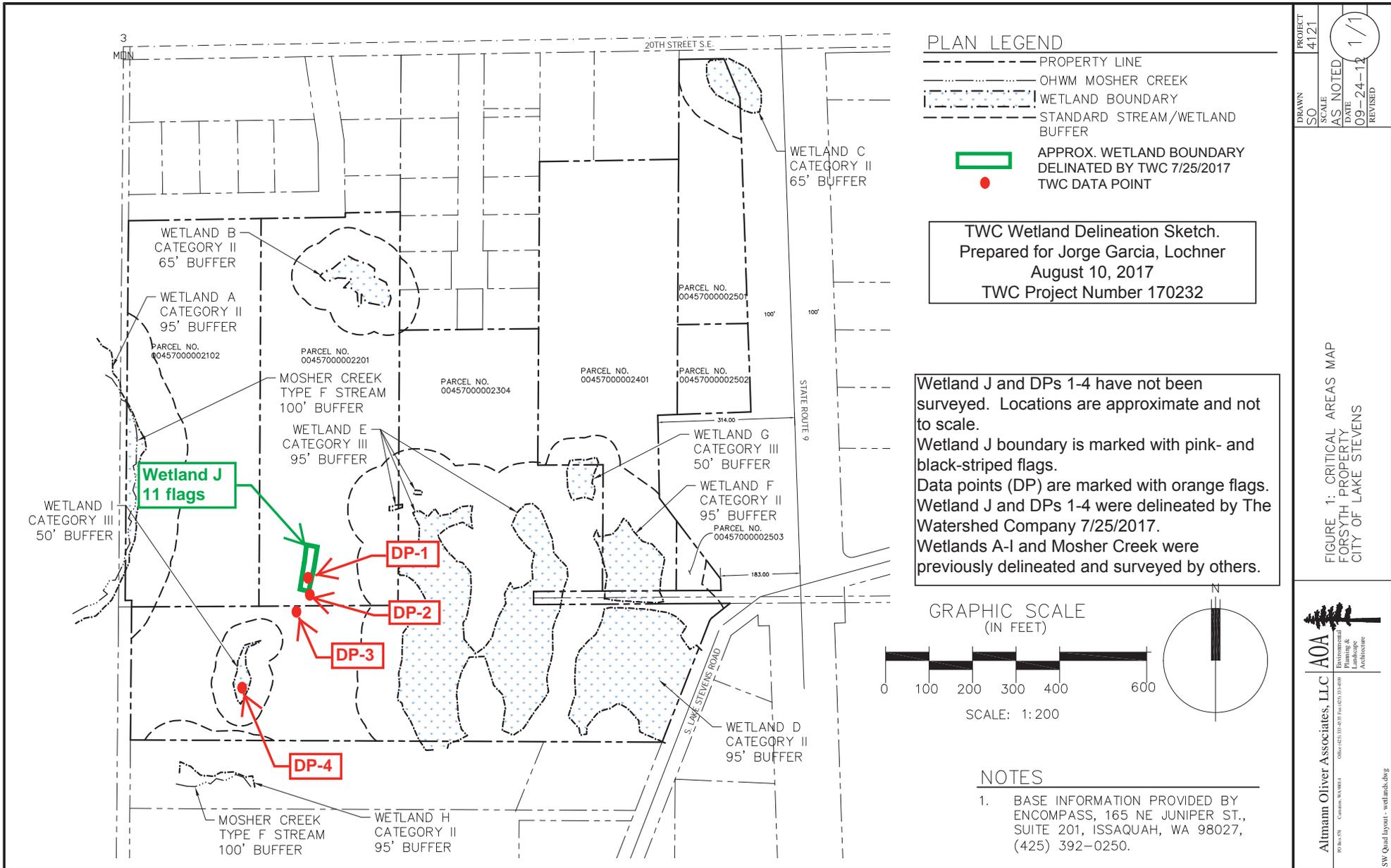
Washington State Office of the Code Reviser. 2017. Revised Code of Washington. Available online at: <http://apps.leg.wa.gov/rcw/>.

Washington State Office of the Code Reviser. 2017. Washington Administrative Code. Available online at: <http://apps.leg.wa.gov/wac/>.

**APPENDIX A**

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Wetland Delineation Field Sketch



PROJECT	4121
SCALE	AS NOTED
DATE	09-24-17
REVISED	1/1

FIGURE 1: CRITICAL AREAS MAP  
FORSYTH PROPERTY  
CITY OF LAKE STEVENS

**AOA**  
Altmann Oliver Associates, LLC  
Environmental  
Planning &  
Architecture  
10100 5th - Camas, WA 98604 - (360) 425-3333 FAX (360) 534-8400

SW Quad layout - wetlands.dwg

**APPENDIX B**

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Wetland Determination Data Forms



**SOIL**

**Sampling Point – DP-1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/2	100					Silt loam	
5-12	2.5Y 5/2	80	10YR 4/6	20	C	M	Gravelly silty loam	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup> Loc: PL=Pore Lining, M=Matrix								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>								
<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"/> 2cm Muck (A10)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>			<input type="checkbox"/> Red Parent Material (TF2)		
<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 checked="" type="checkbox"/> Depleted Matrix (F3)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present): Type: Depth (inches):			<b>Hydric soil present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
Remarks:								

**HYDROLOGY**

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



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 watershedco.com

**DP- 2**

Project Site: <b>LK Stevens 24th St SE</b>		Sampling Date: <b>7/25/2017</b>
Applicant/Owner: <b>City of Lake Stevens</b>		Sampling Point: <b>DP- 2</b>
Investigator: <b>R. Kahlo, S. Payne</b>		City/County: <b>City of Lake Stevens</b>
Sect., Township, Range: <b>S 25 T 29 N R 5 E</b>		State: <b>WA</b>
Landform (hillslope, terrace, etc): <b>Berm</b>	Slope (%): <b>10</b>	Local relief (concave, convex, none): <b>Convex</b>
Subregion (LRR): <b>A</b>	Lat:	Long:
Soil Map Unit Name: <b>Tokol gravelly medial loam, 0 to 8 percent slopes</b>		NWI classification: <b>None</b>
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
(If needed, explain any answers in Remarks.)		

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

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

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

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet			
1. <b><i>Alnus rubra</i></b>	<b>40</b>	<b>Y</b>	<b>FAC</b>	Number of Dominant Species that are OBL, FACW, or FAC:	<b>2</b> (A)		
2.				Total Number of Dominant Species Across All Strata:	<b>2</b> (B)		
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	<b>100</b> (A/B)		
4.	<b>40</b>	= Total Cover					
<b>Sapling/Shrub Stratum (Plot size: 3m diam.)</b>							
1. <b><i>Acer circinatum</i></b>	<b>60</b>	<b>Y</b>	<b>FAC</b>	<b>Prevalence Index Worksheet</b> Total % Cover of <span style="float: right;">Multiply by</span>			
2. <b><i>Acer macrophyllum</i></b>	<b>15</b>	<b>N</b>	<b>FACU</b>				
3.							
4.							
5.							
	<b>75</b>	= Total Cover		OBL species	x 1 =		
				FACW species	x 2 =		
				FAC species	x 3 =		
				FACU species	x 4 =		
				UPL species	x 5 =		
				Column totals	(A) (B)		
Prevalence Index = B / A =							
<b>Herb Stratum (Plot size: 1m diam.)</b>							
1.				<b>Hydrophytic Vegetation Indicators</b> <input checked="" type="checkbox"/> Dominance test is > 50% <input type="checkbox"/> Prevalence test is ≤ 3.0 * Morphological Adaptations * (provide supporting data in remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants * <input type="checkbox"/> Problematic Hydrophytic Vegetation * (explain)			
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
	<b>0</b>	= Total Cover		* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
<b>Woody Vine Stratum (Plot size: )</b>							
1.							
2.							
	<b>0</b>	= Total Cover					
% Bare Ground in Herb Stratum: 100							
Remarks:							

**SOIL**

**Sampling Point – DP-2**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/3	100					Sandy loam	
4-14	10YR 3/2	50					Gravelly sandy loam	Mixed Matrix
4-14	10YR 3/3	50					Gravelly sandy loam	Mixed Matrix

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

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

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

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

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

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

Restrictive Layer (if present): Type: Depth (inches):	<b>Hydric soil present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

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

<p><b>Field Observations</b></p> <p>Surface Water Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (in):</p> <p>Water Table Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (in):</p> <p>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (in):</p>	<p><b>Wetland Hydrology Present?</b>    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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DP- 3

Project Site: <u>LK Stevens 24th St SE</u>		Sampling Date: <u>7/25/2017</u>
Applicant/Owner: <u>City of Lake Stevens</u>		Sampling Point: <u>DP- 3</u>
Investigator: <u>R. Kahlo, S. Payne</u>		City/County: <u>City of Lake Stevens</u>
Sect., Township, Range: <u>S 25 T 29 N R 5 E</u>		State: <u>WA</u>
Landform (hillslope, terrace, etc): <u>Swale</u>	Slope (%): <u>0</u>	Local relief (concave, convex, none): <u>Concave</u>
Subregion (LRR): <u>A</u>	Lat:	Long:
Soil Map Unit Name: <u>Tokul gravelly medial loam, 0 to 8 percent slopes</u>		NWI classification: <u>None</u>
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
(If needed, explain any answers in Remarks.)		

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

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

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

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

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>		
0-5	10YR 2/2	100					Silt loam	
5-12	2.5Y 5/2	80	10YR 4/6	20	C	M	Sandy loam	

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

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

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

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

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

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

Restrictive Layer (if present): Type: Depth (inches):	<b>Hydric soil present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

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

<b>Field Observations</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:    **Likely has WL, swale filled bw/WL 1 & swale cutoff hydrology.**

**DP- 4**

Project Site: <b>LK Stevens 24th St SE</b>		Sampling Date: <b>7/25/2017</b>
Applicant/Owner: <b>City of Lake Stevens</b>		Sampling Point: <b>DP- 4</b>
Investigator: <b>R. Kahlo, S. Payne</b>		City/County: <b>City of Lake Stevens</b>
Sect., Township, Range: <b>S 25 T 29 N R 5 E</b>		State: <b>WA</b>
Landform (hillslope, terrace, etc): <b>Depression</b>	Slope (%): <b>0</b>	Local relief (concave, convex, none): <b>Concave</b>
Subregion (LRR): <b>A</b>	Lat:	Long:
Soil Map Unit Name: <b>Tokul gravelly medial loam, 0 to 8 percent slopes</b>		NWI classification: <b>None</b>
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
(If needed, explain any answers in Remarks.)		

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

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

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

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <b><i>Populus balsamifera</i></b>	<b>25</b>	<b>Y</b>	<b>FAC</b>	Number of Dominant Species that are OBL, FACW, or FAC:	<b>4</b> (A)
2. <b><i>Alnus rubra</i></b>	<b>25</b>	<b>Y</b>	<b>FAC</b>	Total Number of Dominant Species Across All Strata:	<b>5</b> (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	<b>80</b> (A/B)
4.	<b>50</b>	= Total Cover			
Sapling/Shrub Stratum (Plot size: 3m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet	
1. <b><i>Acer circinatum</i></b>	<b>50</b>	<b>Y</b>	<b>FAC</b>		
2. <b><i>Thuja plicata</i></b>	<b>15</b>	<b>N</b>	<b>FAC</b>	OBL species	x 1 =
3. <b><i>Rubus spectabilis</i></b>	<b>35</b>	<b>Y</b>	<b>FAC</b>	FACW species	x 2 =
4.				FAC species	x 3 =
5.				FACU species	x 4 =
	<b>80</b>	= Total Cover		UPL species	x 5 =
				Column totals	(A) (B)
Herb Stratum (Plot size: 1m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B / A =	
1. <b><i>Polystichum munitum</i></b>	<b>35</b>	<b>Y</b>	<b>FACU</b>		
2. <b><i>Rubus ursinus</i></b>	<b>5</b>	<b>N</b>	<b>FACU</b>		
3. <b><i>Maianthemum dilatatum</i></b>	<b>5</b>	<b>N</b>	<b>FAC</b>		
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.	<b>45</b>	= Total Cover			
Woody Vine Stratum (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.					
2.	<b>0</b>	= Total Cover			
% Bare Ground in Herb Stratum: 55 Remarks:					

**SOIL**

**Sampling Point – DP-4**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	5YR 2.5/2	100					Sandy loam	
6-16	10YR 2/2	100					Sandy loam	

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

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

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

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

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 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):	<b>Hydric soil present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

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

<b>Field Observations</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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**APPENDIX C**

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# Wetland Rating Forms and Figures

Wetland name or number: Wetland A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 7/27/2017

Rated by: S. Payne, P. Heltzel Trained by Ecology?  Y  N Date of training: June 2017

HGM Class used for rating: Riverine

Wetland has multiple HGM classes?  Y  N

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

Source of base aerial photo/map: Google maps, Snohomish County PDS

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

#### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	(M)	L	H	(M)	L	H	(M)	L	
Landscape Potential	(H)	M	L	(H)	M	L	H	(M)	L	
Value	H	M	(L)	(H)	M	L	(H)	M	L	
<b>Score Based on Ratings</b>	6			8			7			<b>TOTAL</b> 21

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

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

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

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

Wetland name or number: Wetland A

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

### Riverine Wetlands

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



Wetland name or number: Wetland A

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

Wetland name or number: Wetland A

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**

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

<b>R 1.0. Does the site have the potential to improve water quality?</b>		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
<input type="checkbox"/> Depressions cover $\geq$ 3/4 area of wetland	points = 8	2
<input type="checkbox"/> Depressions cover > 1/2 area of wetland	points = 4	
<input checked="" type="checkbox"/> Depressions present but cover < 1/2 area of wetland	points = 2	
<input type="checkbox"/> No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, <b>not</b> Cowardin classes)		
<input checked="" type="checkbox"/> Trees or shrubs > 2/3 area of the wetland	points = 8	8
<input type="checkbox"/> Trees or shrubs > 1/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 2/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 1/3 area of the wetland	points = 3	
<input type="checkbox"/> Trees, shrubs, and ungrazed herbaceous < 1/3 area of the wetland	points = 0	
<b>Total for R 1</b>	<b>Add the points in the boxes above</b>	<b>10</b>

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

*Record the rating on the first page*

<b>R 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
R 2.1. Is the wetland within an incorporated city or within its UGA?	<input checked="" type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for R 2</b>	<b>Add the points in the boxes above</b>	<b>3</b>

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

*Record the rating on the first page*

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

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

*Record the rating on the first page*

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**

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

R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i>	<input type="checkbox"/> If the ratio is more than 20 points = 9 <input type="checkbox"/> If the ratio is 10-20 points = 6 <input checked="" type="checkbox"/> If the ratio is 5-<10 points = 4 <input type="checkbox"/> If the ratio is 1-<5 points = 2 <input type="checkbox"/> If the ratio is < 1 points = 1	4
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt;90% cover at person height. These are NOT Cowardin classes).</i>	<input checked="" type="checkbox"/> Forest or shrub for > 1/3 area OR emergent plants > 2/3 area points = 7 <input type="checkbox"/> Forest or shrub for > 1/10 area OR emergent plants > 1/3 area points = 4 <input type="checkbox"/> Plants do not meet above criteria points = 0	7
Total for R 4		11

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

Record the rating on the first page

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

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

Record the rating on the first page

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

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

Record the rating on the first page

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

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

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

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

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

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

2

H 1.3. Richness of plant species

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

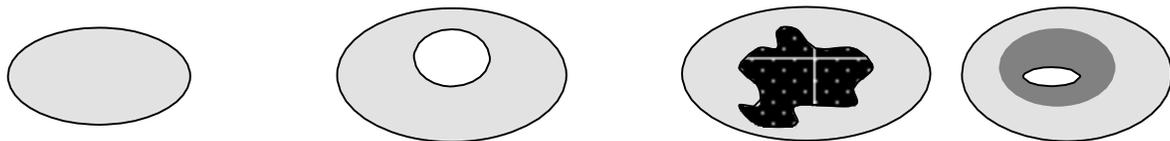
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

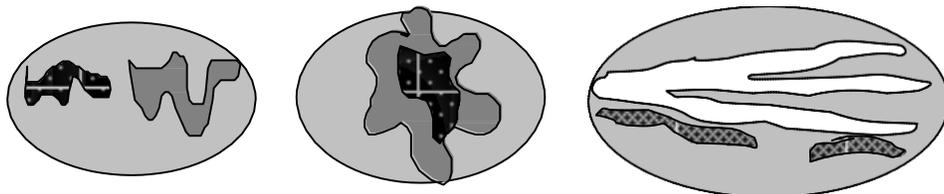
2

H 1.4. Interspersion of habitats

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



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



All three diagrams in this row are

- HIGH** = 3points

3

Wetland name or number: Wetland A

<p>H 1.5. Special habitat features:          Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li><input checked="" type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland.</li> <li><input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>AND/OR</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m).</li> <li><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) <b>OR</b> signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>).</li> <li><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>).</li> <li><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>).</li> </ul>	4
<p>Total for H 1 <span style="float: right;">Add the points in the boxes above</span></p>	13

**Rating of Site Potential** If score is:  15-18 = H  7-14 = M  0-6 = L

*Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	0
<p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span></p>	3

**Rating of Landscape Potential** If score is:  4-6 = H  1-3 = M  < 1 = L

*Record the rating on the first page*

Wetland name or number: Wetland A

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

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

*Record the rating on the first page*

Wetland name or number: Wetland A

## WDFW Priority Habitats

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

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

**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> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 1.1</b>   <input checked="" type="checkbox"/> No = <b>Not an estuarine wetland</b></span></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?  <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No - Go to <b>SC 1.2</b></span></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> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)  <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Category II</b></span></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? <span style="float: right;"><input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b>   <input type="checkbox"/> No – Go to <b>SC 2.3</b></span></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></span></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a>  <span style="float: right;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No – Go to <b>SC 3.2</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No = <b>Is not a bog</b></span></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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No – Go to <b>SC 3.4</b></span>  <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? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No = <b>Is not a bog</b></span></p>	<b>Cat. I</b>

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

# WETLAND A (RIVERINE)

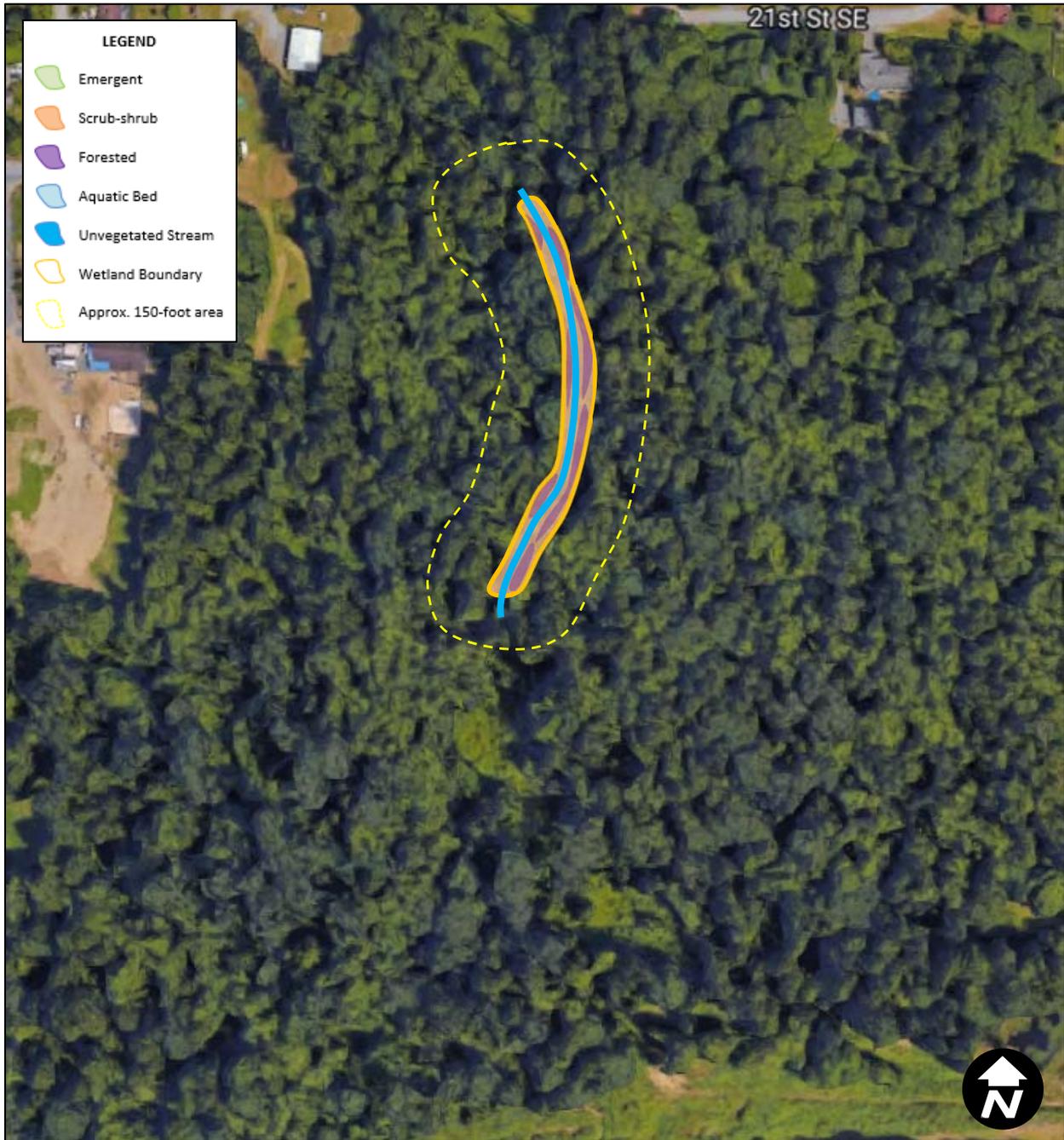


Figure A-1. Cowardin plant classes and 150-ft area – H1.1, H1.4, R2.4

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

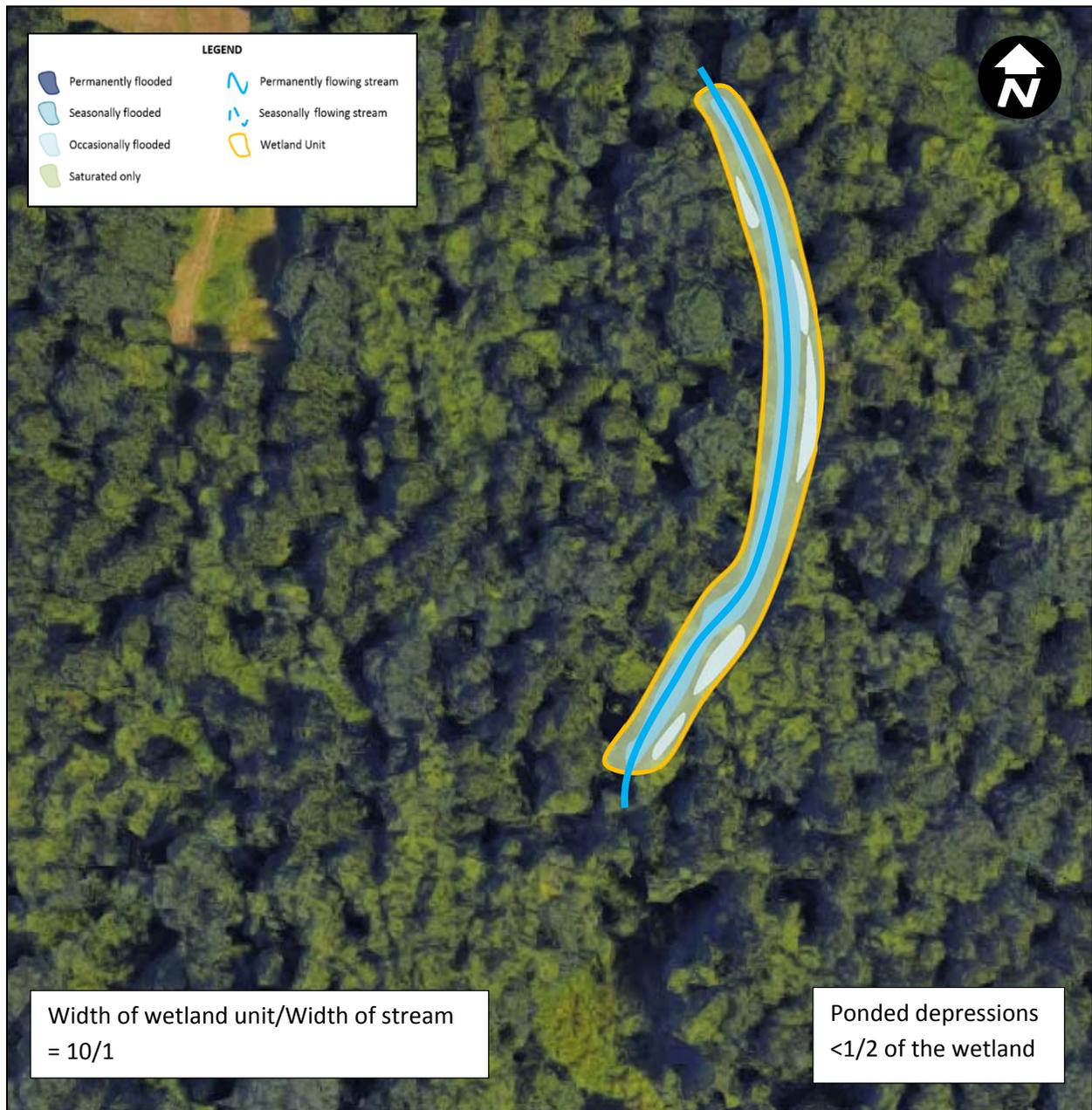


Figure A-2. Hydroperiods, poned depressions, and wetland-width-to-stream-width ratio – H1.2, R1.1, R4.1

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



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

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

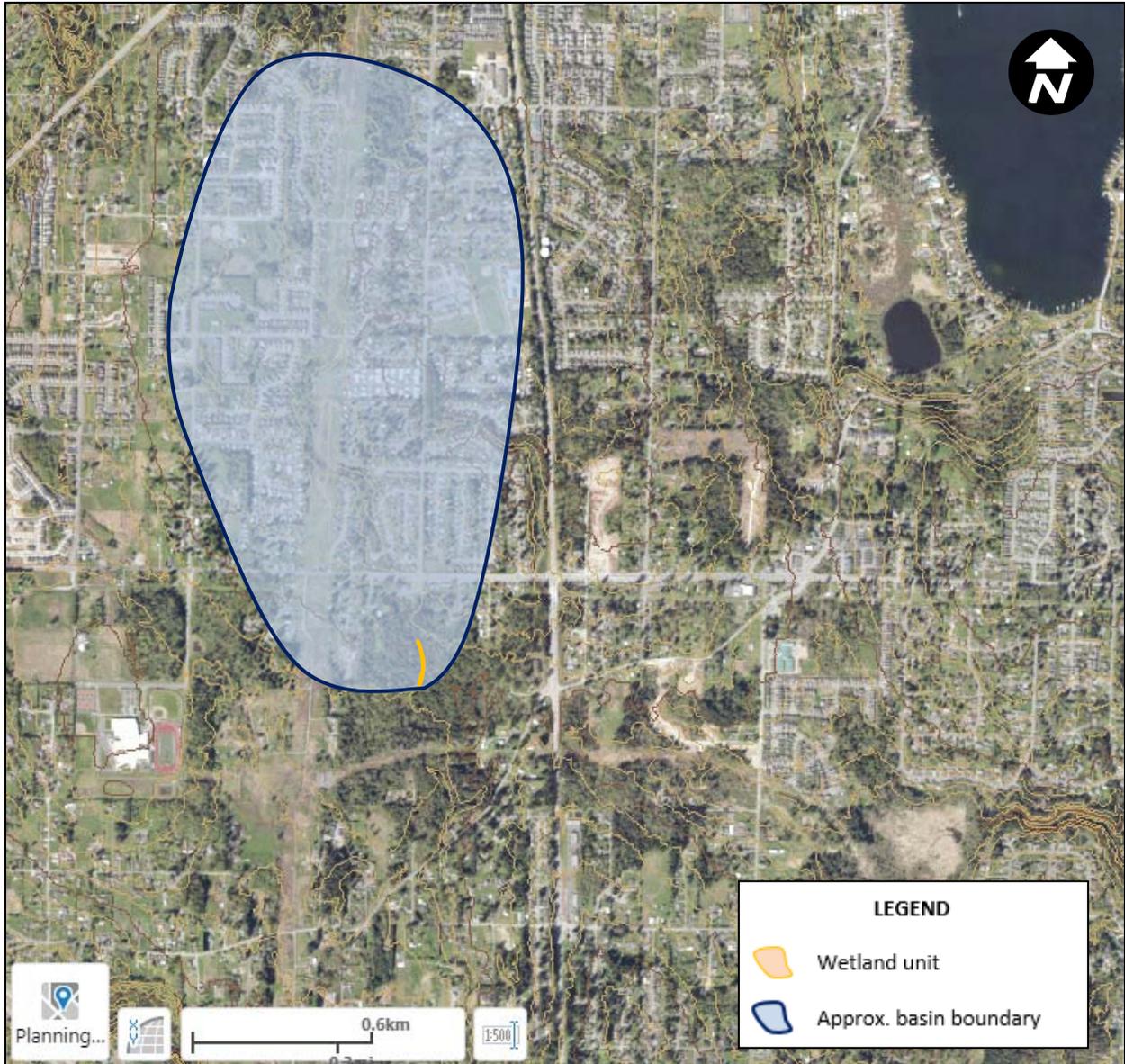


Figure A-4. Map of the contributing basin – R2.2, R2.3, R5.2

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

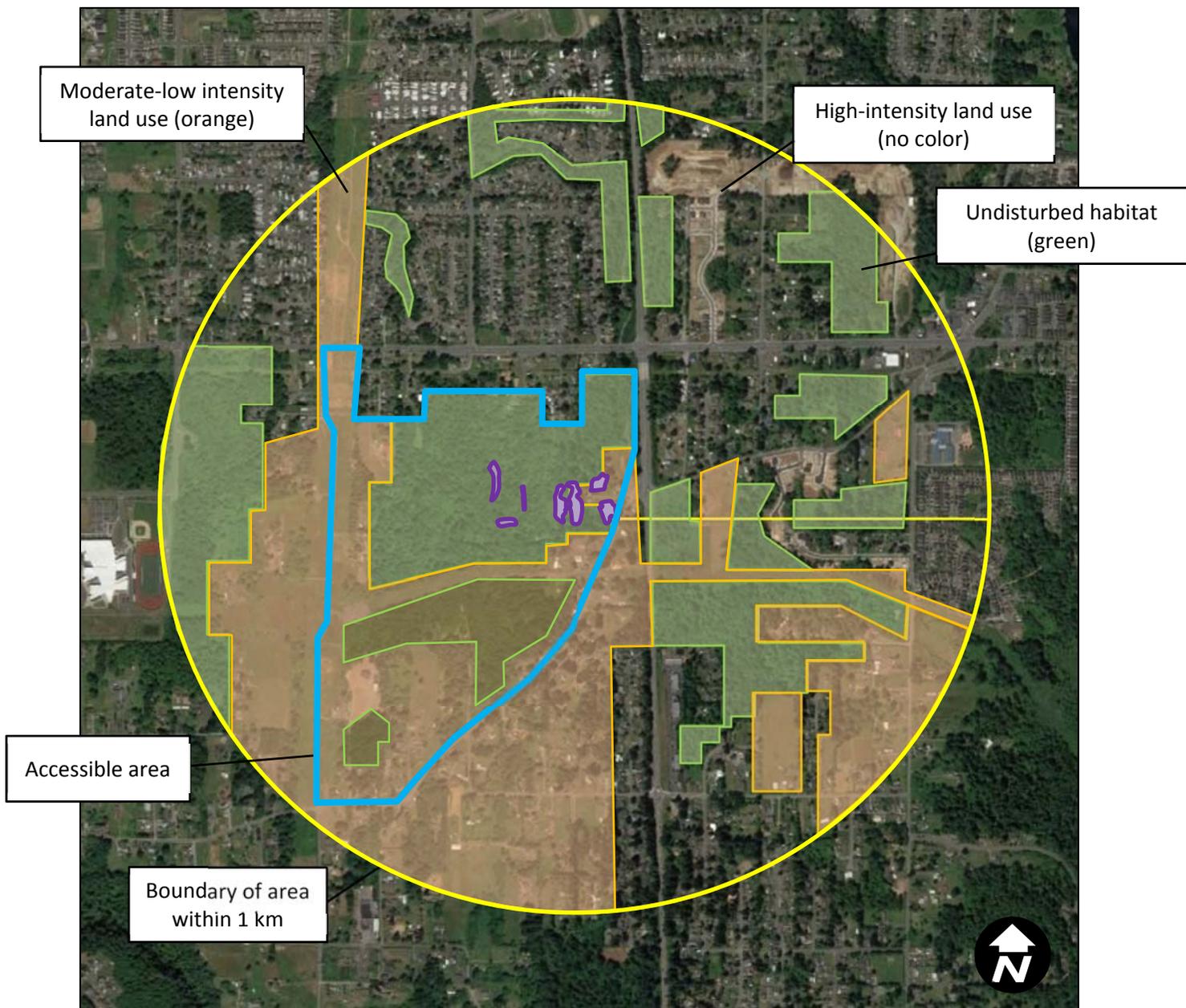


Figure A-5. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2.2, H2.3

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

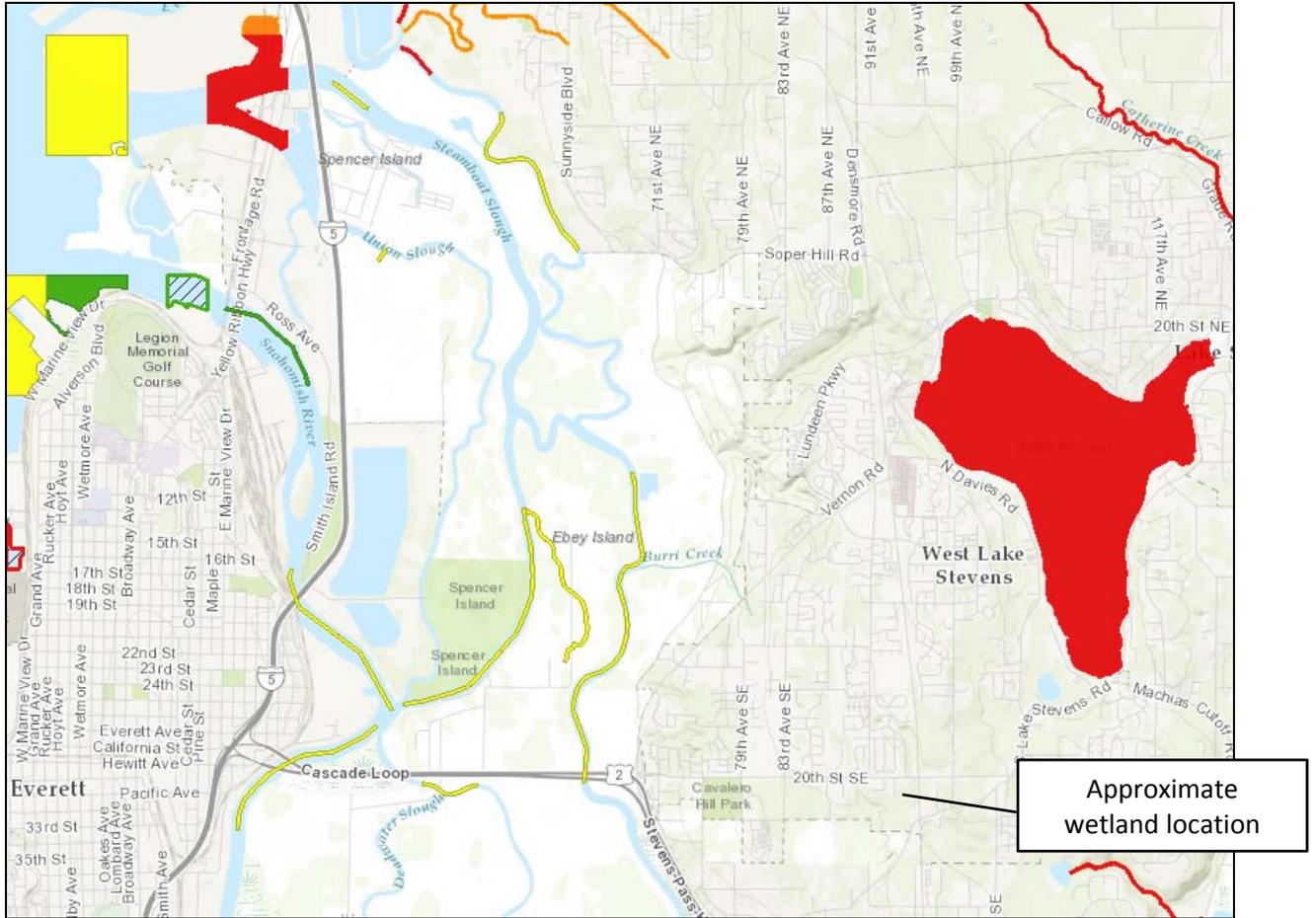


Figure A-6. Screen-capture of 303(d) listed waters in basin – R3.1

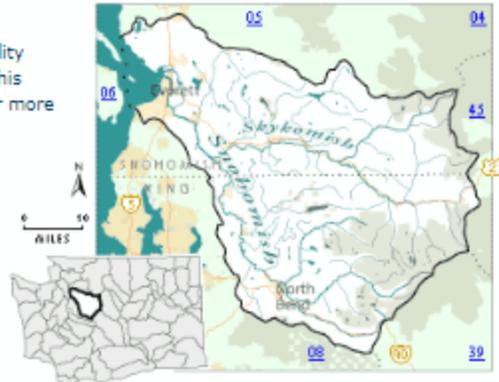
Features depicted are not to scale. Sketches are based on available data and best professional judgment.

# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 7: Snohomish

## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



### Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Lake Loma</a>	Total Phosphorus	Straight to implementation project under development	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Snohomish River</a>	<a href="#">French Creek / Pilchuck River</a>	Under development	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Dissolved Oxygen</li> <li>• Temperature</li> </ul>		
	<a href="#">Dioxin</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<a href="#">Estuary</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Ammonia</li> <li>• BOD</li> </ul>		
<a href="#">Tributaries</a>	<ul style="list-style-type: none"> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Tributaries: <ul style="list-style-type: none"> <li>• Allen Creek</li> <li>• Quilceda Creek</li> <li>• French Creek</li> <li>• Woods Creek</li> <li>• Pilchuck River</li> <li>• Marshlands (Wood Creek) {2}</li> </ul>		
<a href="#">Snoqualmie River</a>	<ul style="list-style-type: none"> <li>• Ammonia-N</li> <li>• BOD (5-day)</li> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Temperature	EPA approved Has an implementation plan	

Figure A-7. Screen-capture of TMDL list for WRIA in which unit is found – R3.2, R3.3

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

Wetland name or number: Wetland D

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland D Date of site visit: July 25, 2017 Rated by: S. Payne, R. Kahlo

Trained by Ecology?  Y  N Date of training: June 2017

HGM Class used for rating: Depressional

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: Bing Maps, Snohomish County PDS Mapper

## OVERALL WETLAND CATEGORY (based on functions or special characteristics 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H (M) L	H (M) L	H (M) L	
Landscape Potential	(H) M L	H (M) L	H (M) L	
Value	H (M) L	(H) M L	H (M) L	TOTAL
Score Based on Ratings	7	7	6	20

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

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

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

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

Wetland name or number: Wetland D

## 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	DEF-1
Hydroperiods	D 1.4, H 1.2	DEF-2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	DEF-2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	DEF-2
Map of the contributing basin	D 4.3, D 5.3	DEF-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	DEF-6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	DEF-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	DEF-8

## HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

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

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

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

**YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number: Wetland D

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

<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> <input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 <input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 <input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1 <input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> <input type="checkbox"/> Yes = 4 <input checked="" type="checkbox"/> No = 0	0	
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): <input type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 <input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1 <input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0	3	
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> <input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4 <input checked="" type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2 <input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0	2	
<b>Total for D 1</b>	Add the points in the boxes above	7

**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?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 2</b>	Add the points in the boxes above	3

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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)?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 3</b>	Add the points in the boxes above	1

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

Record the rating on the first page

**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>		
<input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet).	points = 4	2
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet.	points = 7	0
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet.	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland.	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water.	points = 1	
<input checked="" type="checkbox"/> 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>		
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit.	points = 5	5
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit.	points = 0	
<input type="checkbox"/> 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>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

<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>	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
<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>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<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

<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):		
• <input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	2
• <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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.		
<i>Explain why: ....</i>	points = 0	
<input type="checkbox"/> 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>		
	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<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

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

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

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

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

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

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3  
 Seasonally flooded or inundated 3 types present: points = 2  
 Occasionally flooded or inundated 2 types present: points = 1  
 Saturated only 1 type present: points = 0  
 Permanently flowing stream or river in, or adjacent to, the wetland  
 Seasonally flowing stream in, or adjacent to, the wetland  
 **Lake Fringe wetland** **2 points**  
 **Freshwater tidal wetland** **2 points**

2

H 1.3. Richness of plant species

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

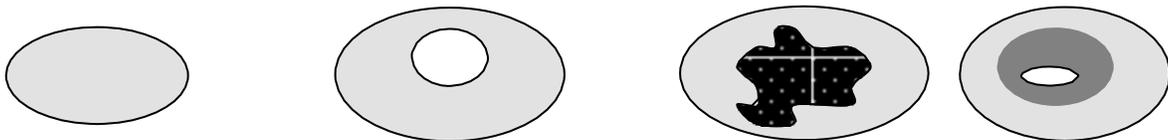
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

1

H 1.4. Interspersion of habitats

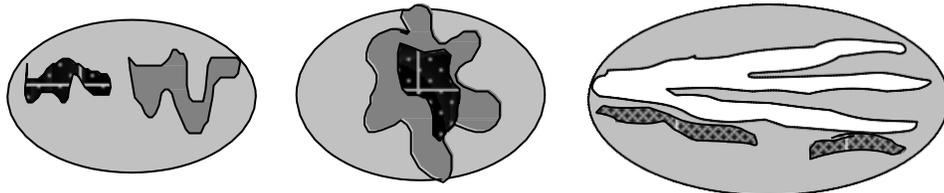
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



**None** = 0 points

**Low** = 1 point

**Moderate** = 2 points



All three diagrams in this row are

**HIGH** = 3points

3

Wetland name or number: Wetland D

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

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).  <i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i>            If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  <i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	0
<p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span></p>	3

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

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

**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.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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



Wetland name or number: Wetland E

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland E      Date of site visit: July 25, 2017      Rated by: S. Payne, R. Kahlo

Trained by Ecology?  Y  N      Date of training: June 2017

HGM Class used for rating: Depressional

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: Bing Maps, Snohomish County PDS Mapper

## OVERALL WETLAND CATEGORY (based on functions or special characteristics 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	(M)	L	(H)	M	L	H	(M)	L	
Landscape Potential	H	(M)	L	H	M	(L)	H	(M)	L	
Value	H	(M)	L	(H)	M	L	(H)	M	L	
Score Based on Ratings	6			7			7			TOTAL 20

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

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

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

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

Wetland name or number: Wetland E

## 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	DEF-1
Hydroperiods	D 1.4, H 1.2	DEF-2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	DEF-2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	DEF-2
Map of the contributing basin	D 4.3, D 5.3	DEF-4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	DEF-6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	DEF-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	DEF-8

## HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

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

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

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

**YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number: Wetland E

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

<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> <input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 <input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 <input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1 <input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> <input type="checkbox"/> Yes = 4 <input checked="" type="checkbox"/> No = 0	0	
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): <input type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 <input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1 <input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0	3	
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> <input checked="" type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4 <input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2 <input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0	4	
<b>Total for D 1</b>	Add the points in the boxes above	9

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 2</b>	Add the points in the boxes above	1

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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)?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 3</b>	Add the points in the boxes above	1

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

Record the rating on the first page

**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>		
<input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet).	points = 4	2
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet.	points = 7	5
<input checked="" type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet.	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland.	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water.	points = 1	
<input type="checkbox"/> 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>		
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit.	points = 5	5
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit.	points = 0	
<input type="checkbox"/> 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>12</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>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?</b>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>0</b>

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

Record the rating on the first page

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</b>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• <input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	2
• <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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.		
<i>Explain why: ....</i>	points = 0	
<input type="checkbox"/> 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>		
	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<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

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

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

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

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

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

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

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

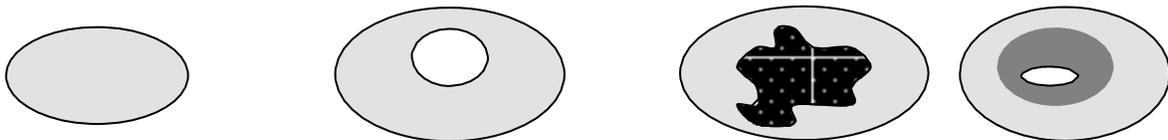
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

2

H 1.4. Interspersion of habitats

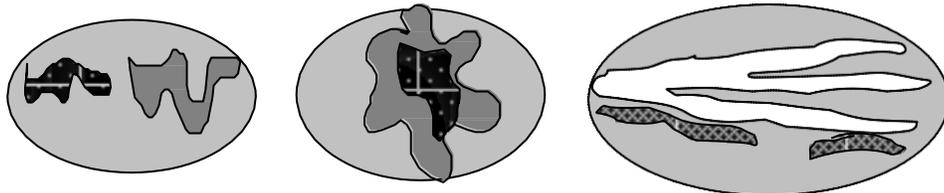
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



**None** = 0 points

**Low** = 1 point

**Moderate** = 2 points



All three diagrams in this row are

**HIGH** = 3points

3

Wetland name or number: Wetland E

<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 checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input checked="" 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) <b>OR</b> signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>).</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>		2
Total for H 1	Add the points in the boxes above	12

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat + [(% moderate and low intensity land uses)/2] = <b>10% + (5%/2) = 12.5%</b></p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat + [(% moderate and low intensity land uses)/2] = <b>22% + (32%/2) = 38%</b></p> <p><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>		0
Total for H 2	Add the points in the boxes above	3

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

H 3.0. Is the habitat provided by the site valuable to society?		
<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><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><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</p> <p><input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p><input type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>		2

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

## 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.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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



Wetland name or number: Wetland F

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland F Date of site visit: July 25, 2017 Rated by: S. Payne, R. Kahlo

Trained by Ecology?  Y  N Date of training: June 2017

HGM Class used for rating: Depressional

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: Bing Maps, Snohomish County PDS Mapper

## OVERALL WETLAND CATEGORY (based on functions or special characteristics 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality		Hydrologic		Habitat					
<i>Circle the appropriate ratings</i>										
Site Potential	H	(M)	L	H	(M)	L	H	(M)	L	
Landscape Potential	H	(M)	L	H	(M)	L	H	(M)	L	
Value	H	(M)	L	(H)	M	L	H	M	(L)	TOTAL
Score Based on Ratings	6			7			5		18	

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

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

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

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

Wetland name or number: Wetland F

## 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	DEF-1
Hydroperiods	D 1.4, H 1.2	DEF-2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	DEF-2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	DEF-2
Map of the contributing basin	D 4.3, D 5.3	DEF-5
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	DEF-6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	DEF-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	DEF-8

## HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

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

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

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

**YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number: Wetland F

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

<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. <b>Characteristics of surface water outflows from the wetland:</b>		
<input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2		2
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. <b>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</b> <input type="checkbox"/> Yes = 4 <input checked="" type="checkbox"/> No = 0		0
D 1.3. <b>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</b>		
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > 1/2 of area points = 3		5
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1		
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0		
D 1.4. <b>Characteristics of seasonal ponding or inundation:</b> <i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
<input checked="" type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		4
<input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2		
<input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0		
<b>Total for D 1</b>	Add the points in the boxes above	<b>11</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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 2</b>	Add the points in the boxes above	<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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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)?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 3</b>	Add the points in the boxes above	<b>1</b>

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

*Record the rating on the first page*

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

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

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

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

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

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

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

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

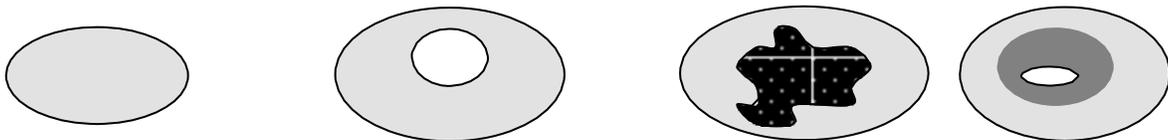
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

1

H 1.4. Interspersion of habitats

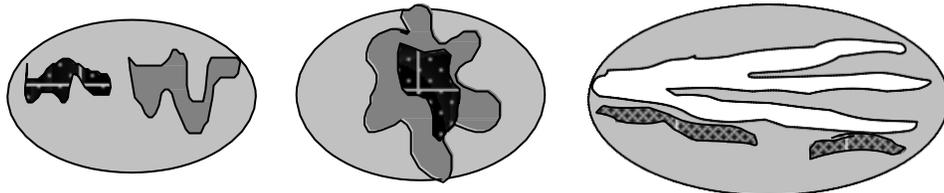
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



**None** = 0 points

**Low** = 1 point

**Moderate** = 2 points



All three diagrams in this row are

**HIGH** = 3points

2

Wetland name or number: Wetland F

<p>H 1.5. Special habitat features:          Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li><input checked="" type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland.</li> <li><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>AND/OR</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m).</li> <li><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) <b>OR</b> signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>).</li> <li><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>).</li> <li><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>).</li> </ul>	2
<p>Total for H 1</p>	<p style="text-align: center;">Add the points in the boxes above</p> <p style="text-align: center;">8</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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	0
<p>Total for H 2</p>	<p style="text-align: center;">Add the points in the boxes above</p> <p style="text-align: center;">3</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> <ul style="list-style-type: none"> <li><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</li> <li><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</li> <li><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</li> <li><input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></li> <li><input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></li> </ul>	0

**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.

**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> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="margin-left: 100px;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b></span> <input checked="" type="checkbox"/> 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;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> 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> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)  <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> 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? <span style="margin-left: 100px;"><input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b></span> <input type="checkbox"/> 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?  <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <input checked="" type="checkbox"/> 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? <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a>  <input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <input type="checkbox"/> No = <b>Not a WHCV</b></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <input type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <input checked="" type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <input checked="" type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <input type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <input type="checkbox"/> No = <b>Is not a</b></p>	<b>Cat. I</b>



# WETLAND D, E, F (DEPRESSIONAL)



Figure DEF-1. Cowardin plant classes – D1.3, H1.1, H1.4

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

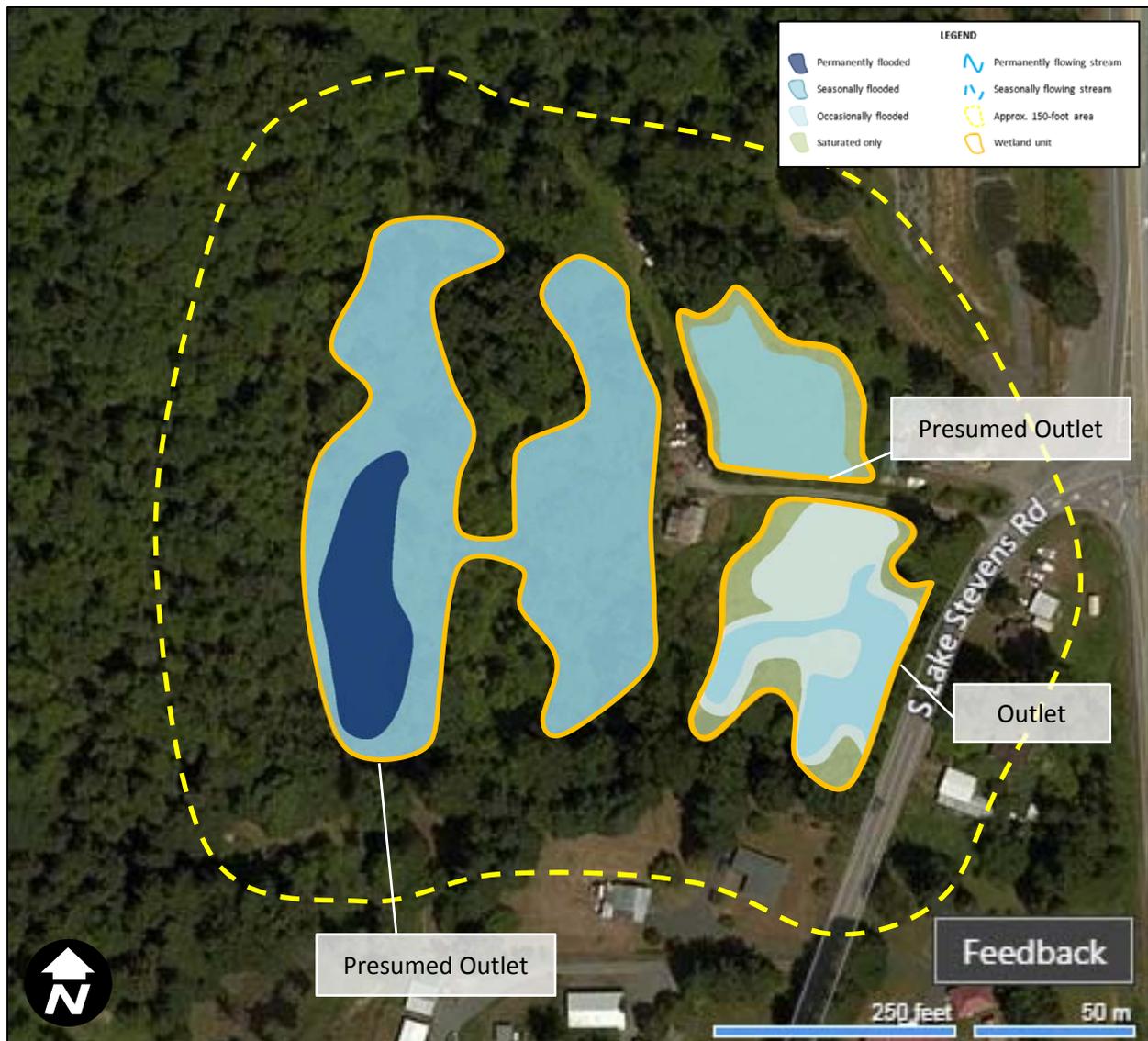


Figure DEF-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

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



Figure DEF-3. Map of Wetland D contributing basin – D4. 3, D5.3

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



Figure DEF-4. Map of Wetland F contributing basin – D4.3, D5.3

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

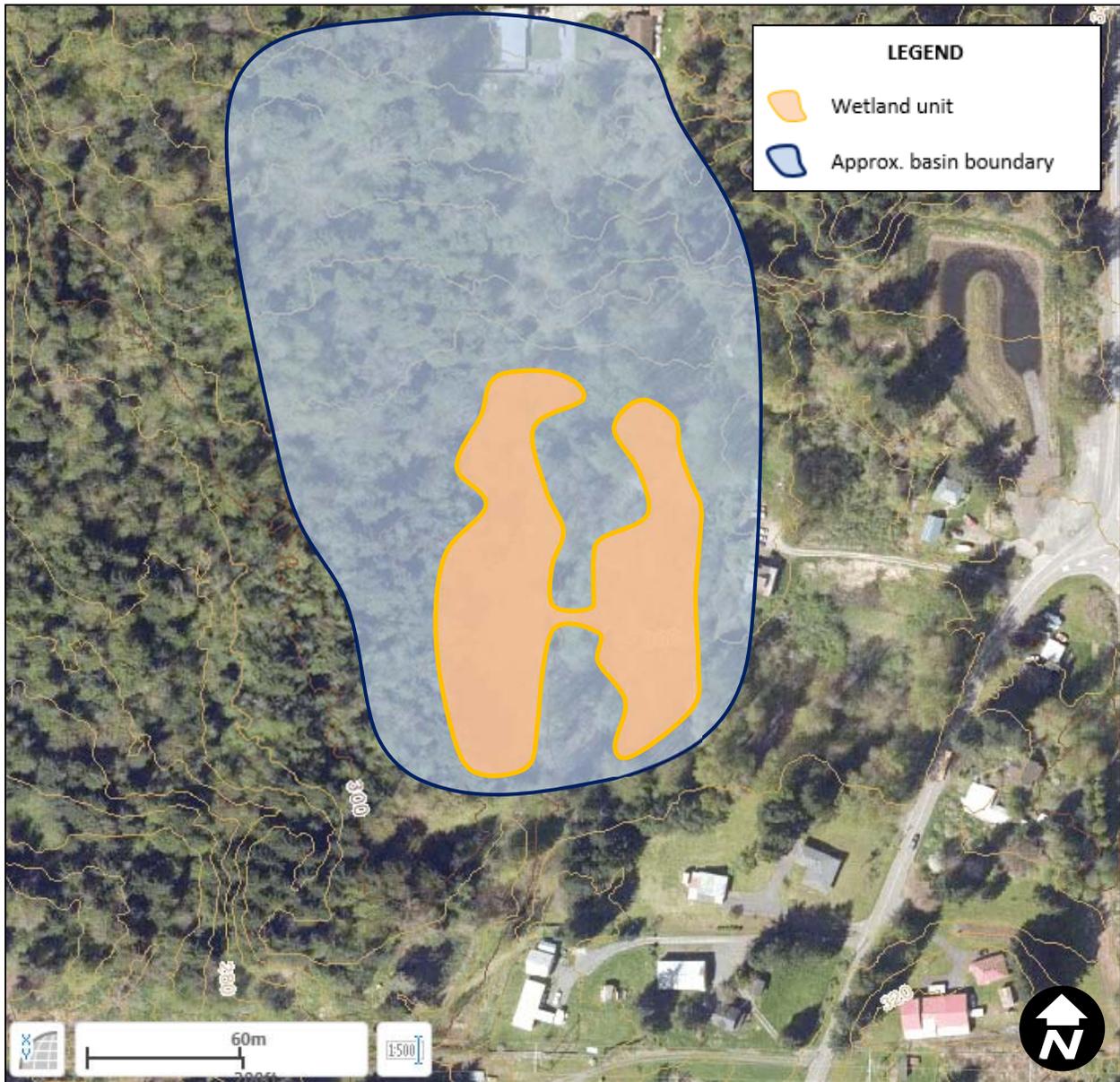


Figure DEF-5. Map of Wetland E contributing basin – D4. 3, D5.3

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

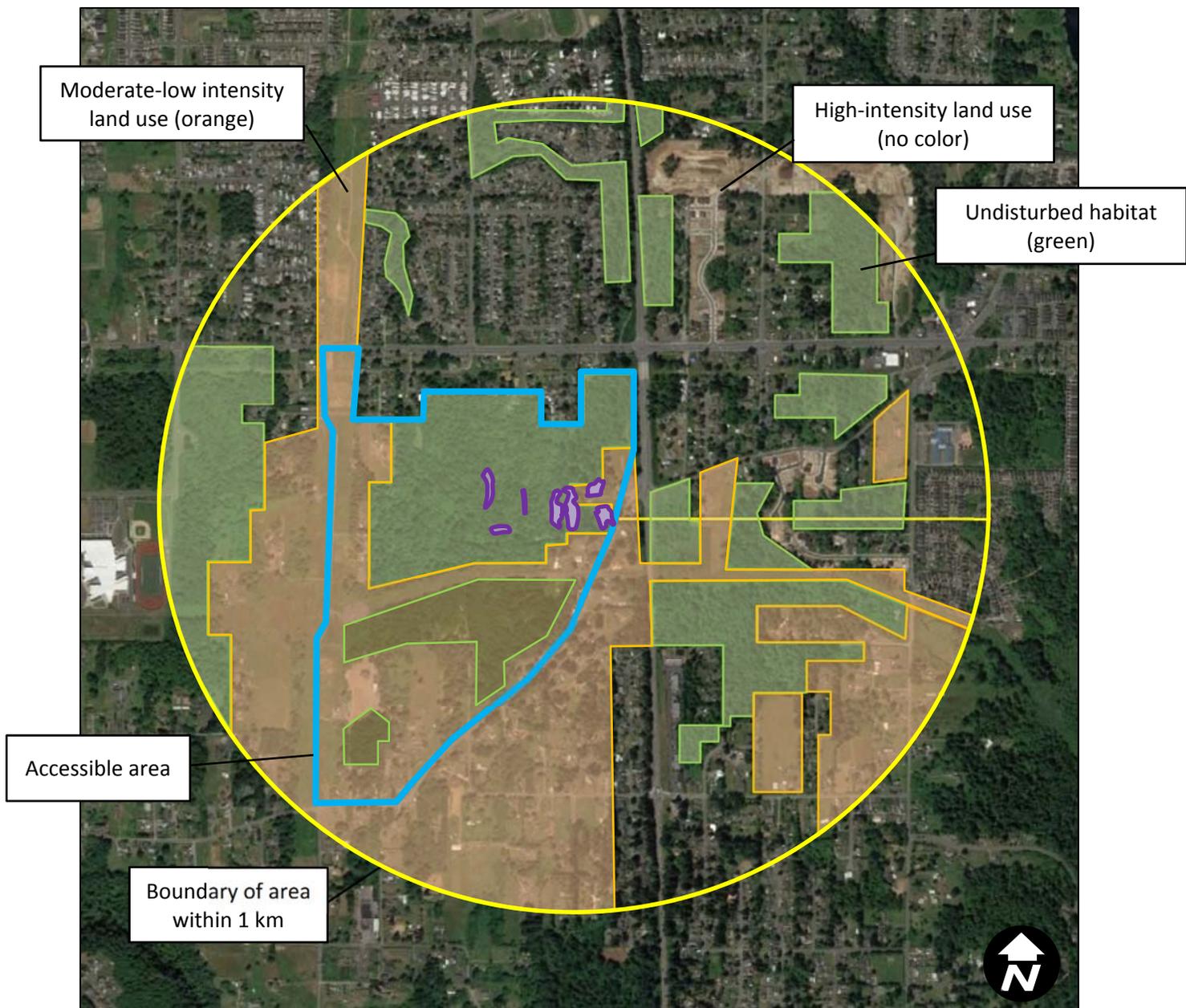


Figure DEF-6. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2. 2, H2.3

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

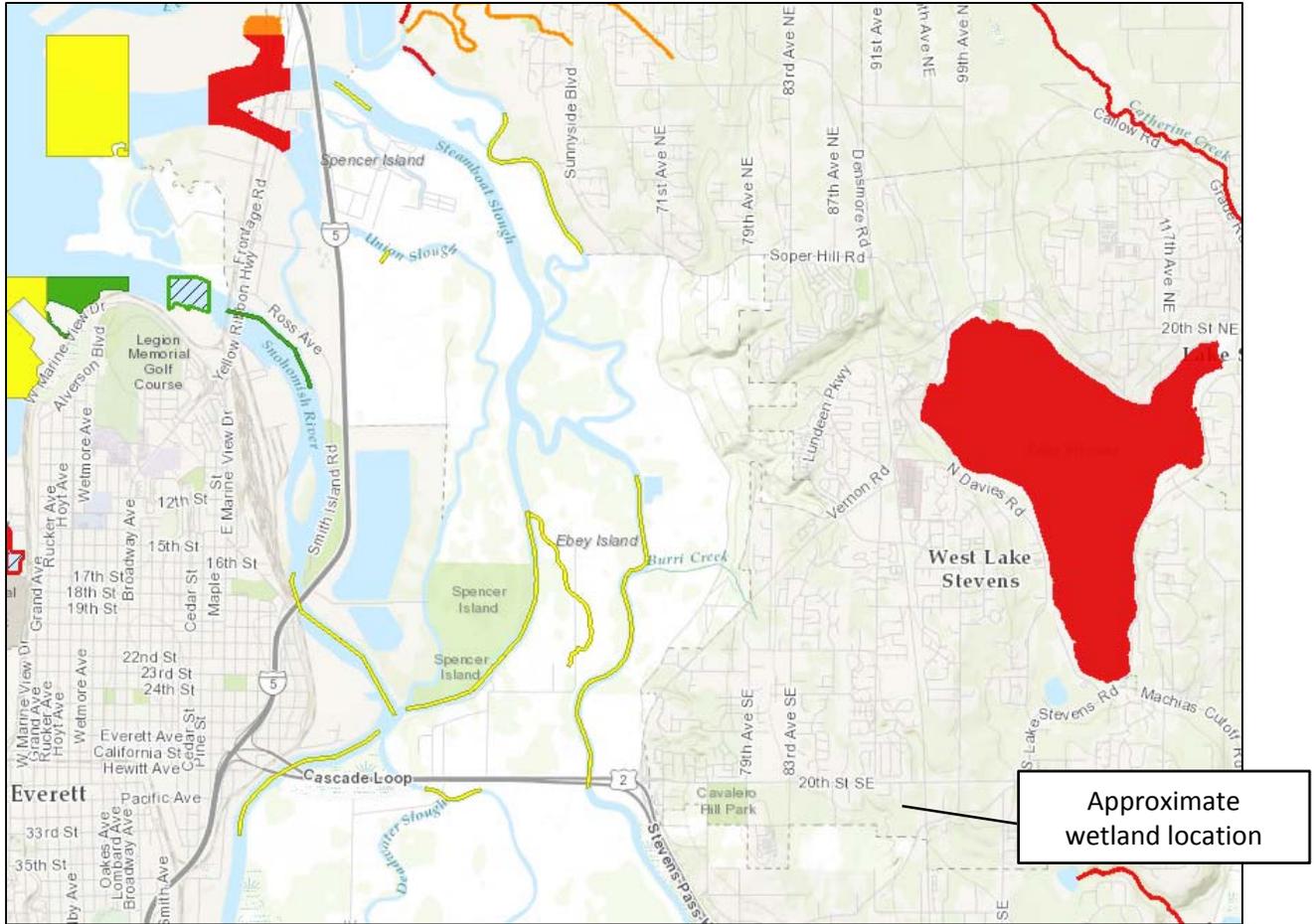


Figure DEF-7. Screen-capture of 303(d) listed waters in basin – D3.1, D3.2

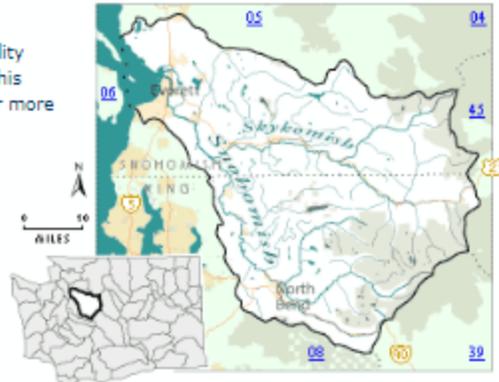
Features depicted are not to scale. Sketches are based on available data and best professional judgment.

# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 7: Snohomish

## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



### Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Lake Loma</a>	Total Phosphorus	Straight to implementation project under development	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Snohomish River</a>	<a href="#">French Creek / Pilchuck River</a>	Under development	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Dissolved Oxygen</li> <li>• Temperature</li> </ul>		
	<a href="#">Dioxin</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<a href="#">Estuary</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Ammonia</li> <li>• BOD</li> </ul>		
<a href="#">Tributaries</a>	<ul style="list-style-type: none"> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Tributaries: <ul style="list-style-type: none"> <li>• Allen Creek</li> <li>• Quilceda Creek</li> <li>• French Creek</li> <li>• Woods Creek</li> <li>• Pilchuck River</li> <li>• Marshlands (Wood Creek) {2}</li> </ul>		
<a href="#">Snoqualmie River</a>	<ul style="list-style-type: none"> <li>• Ammonia-N</li> <li>• BOD (5-day)</li> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Temperature	EPA approved Has an implementation plan	

Figure DEF-8. Screen-capture of TMDL list for WRIA in which unit is found – D3.3

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

Wetland name or number: Wetland H

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland H Date of site visit: 7/27/2017

Rated by: S. Payne, P. Heltzel Trained by Ecology?  Y  N Date of training: June 2017

HGM Class used for rating: Riverine

Wetland has multiple HGM classes?  Y  N

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

Source of base aerial photo/map: Google maps, Snohomish County PDS

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

#### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H (M) L	H (M) L	H (M) L	
Landscape Potential	(H) M L	(H) M L	H (M) L	
Value	H M (L)	(H) M L	(H) M L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	6	8	7	21

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

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

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

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

Wetland name or number: Wetland H

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

### Riverine Wetlands

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



Wetland name or number: H

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

Wetland name or number: H

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**

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

<b>R 1.0. Does the site have the potential to improve water quality?</b>		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
<input type="checkbox"/> Depressions cover $\geq$ 3/4 area of wetland	points = 8	2
<input type="checkbox"/> Depressions cover > 1/2 area of wetland	points = 4	
<input checked="" type="checkbox"/> Depressions present but cover < 1/2 area of wetland	points = 2	
<input type="checkbox"/> No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, <b>not</b> Cowardin classes)		
<input checked="" type="checkbox"/> Trees or shrubs > 2/3 area of the wetland	points = 8	8
<input type="checkbox"/> Trees or shrubs > 1/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 2/3 area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > 1/3 area of the wetland	points = 3	
<input type="checkbox"/> Trees, shrubs, and ungrazed herbaceous < 1/3 area of the wetland	points = 0	
<b>Total for R 1</b>	<b>Add the points in the boxes above</b>	<b>10</b>

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

*Record the rating on the first page*

<b>R 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
R 2.1. Is the wetland within an incorporated city or within its UGA?	<input checked="" type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for R 2</b>	<b>Add the points in the boxes above</b>	<b>3</b>

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

*Record the rating on the first page*

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

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

*Record the rating on the first page*

Wetland name or number: H

### RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 4.0. Does the site have the potential to reduce flooding and erosion?		
<p>R 4.1. Characteristics of the overbank storage the wetland provides:  <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i></p> <p> <input type="checkbox"/> If the ratio is more than 20 <span style="float: right;">points = 9</span>  <input type="checkbox"/> If the ratio is 10-20 <span style="float: right;">points = 6</span>  <input checked="" type="checkbox"/> If the ratio is 5-&lt;10 <span style="float: right;">points = 4</span>  <input type="checkbox"/> If the ratio is 1-&lt;5 <span style="float: right;">points = 2</span>  <input type="checkbox"/> If the ratio is &lt; 1 <span style="float: right;">points = 1</span> </p>		4
<p>R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt;90% cover at person height. These are <u>NOT</u> Cowardin classes).</i></p> <p> <input checked="" type="checkbox"/> Forest or shrub for &gt; 1/3 area OR emergent plants &gt; 2/3 area <span style="float: right;">points = 7</span>  <input type="checkbox"/> Forest or shrub for &gt; 1/10 area OR emergent plants &gt; 1/3 area <span style="float: right;">points = 4</span>  <input type="checkbox"/> Plants do not meet above criteria <span style="float: right;">points = 0</span> </p>		7
Total for R 4		11

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

*Record the rating on the first page*

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

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

*Record the rating on the first page*

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

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

*Record the rating on the first page*

Wetland name or number: H

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

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

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

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

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

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

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

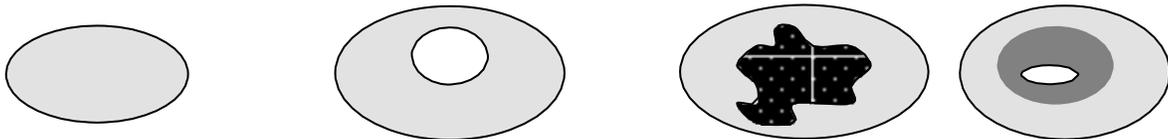
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

1

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.*

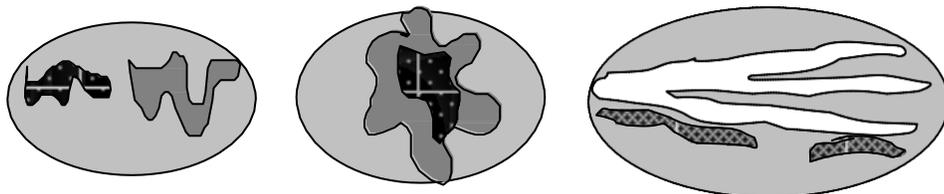


- None** = 0 points
- Low** = 1 point
- Moderate** = 2 points

2

All three diagrams in this row are

- HIGH** = 3points



Wetland name or number: H

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

**Rating of Site Potential** If score is:  15-18 = H  7-14 = M  0-6 = L

*Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  <i>Calculate: % undisturbed habitat + [(%moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>	0
<p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span></p>	3

**Rating of Landscape Potential** If score is:  4-6 = H  1-3 = M  < 1 = L

*Record the rating on the first page*

Wetland name or number: H

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <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 checked="" 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	
<input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span>	
<input type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span>	
	2

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

*Record the rating on the first page*

Wetland name or number: H

## 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: H

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

# WETLAND H (RIVERINE)



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

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



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

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



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

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

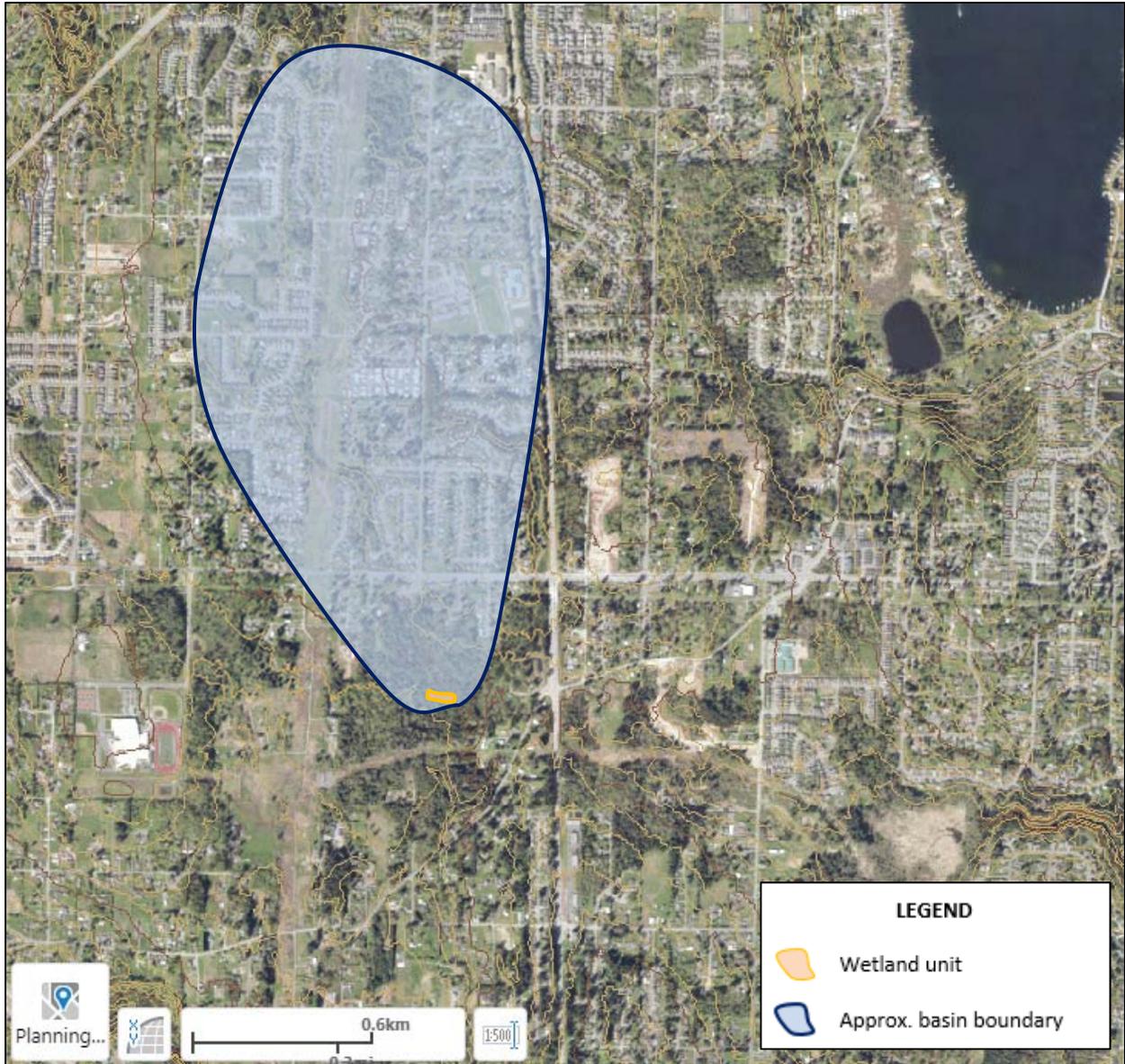


Figure H-4. Map of the contributing basin – R2.2, R2.3, R5.2

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

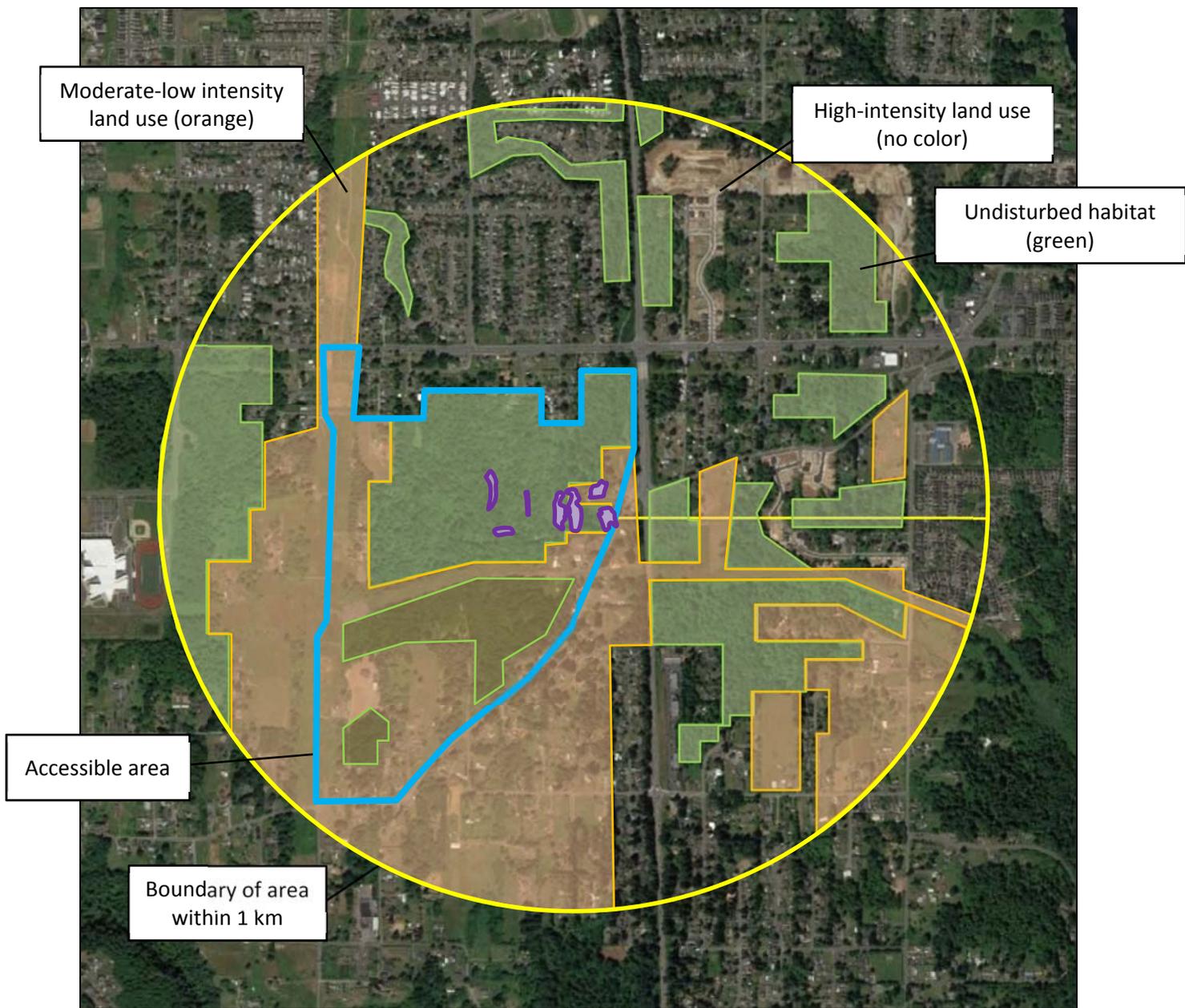


Figure H-5. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2.2, H2.3

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

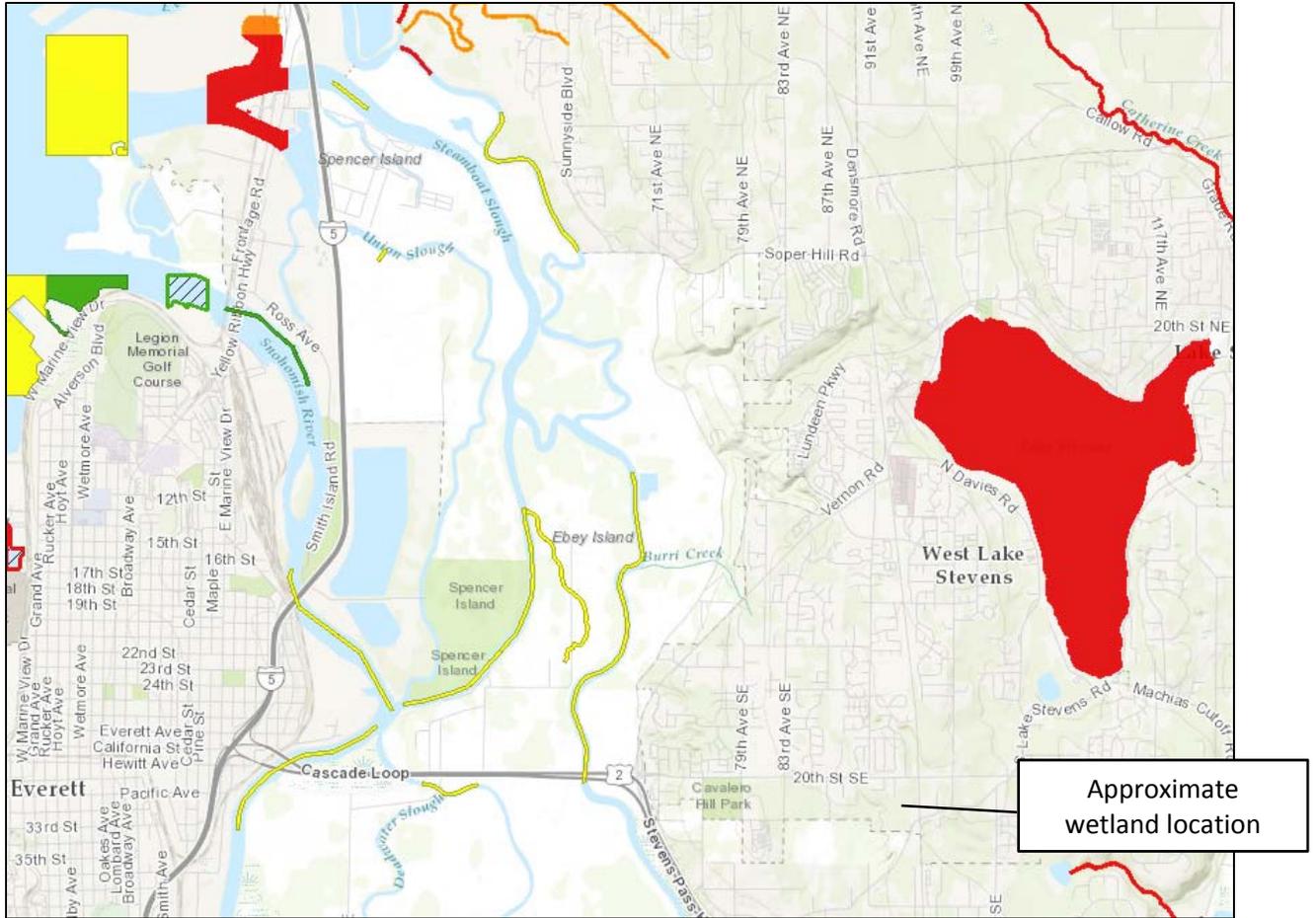


Figure H-6. Screen-capture of 303(d) listed waters in basin – R3.1

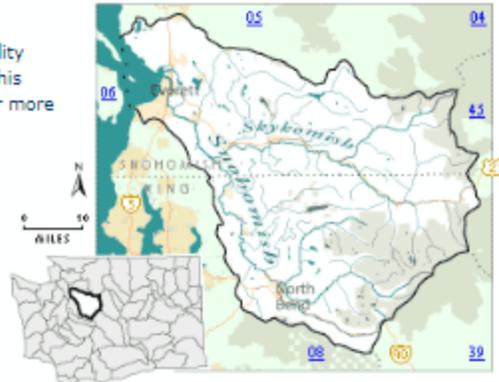
Features depicted are not to scale. Sketches are based on available data and best professional judgment.

# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 7: Snohomish

## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



### Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Lake Loma</a>	Total Phosphorus	Straight to implementation project under development	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Snohomish River</a>	<a href="#">French Creek / Pilchuck River</a>	Under development	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Dissolved Oxygen</li> <li>• Temperature</li> </ul>		
	<a href="#">Dioxin</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<a href="#">Estuary</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Ammonia</li> <li>• BOD</li> </ul>		
<a href="#">Tributaries</a>	<ul style="list-style-type: none"> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Tributaries: <ul style="list-style-type: none"> <li>• Allen Creek</li> <li>• Quilceda Creek</li> <li>• French Creek</li> <li>• Woods Creek</li> <li>• Pilchuck River</li> <li>• Marshlands (Wood Creek) {2}</li> </ul>		
<a href="#">Snoqualmie River</a>	<ul style="list-style-type: none"> <li>• Ammonia-N</li> <li>• BOD (5-day)</li> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Temperature	EPA approved Has an implementation plan	

Figure H-7. Screen-capture of TMDL list for WRIA in which unit is found – R3.2, R3.3

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

Wetland name or number: Wetland J

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland J      Date of site visit: July 25, 2017      Rated by: S. Payne, R. Kahlo

Trained by Ecology?  Y  N      Date of training: June 2017

HGM Class used for rating: Depressional

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: Bing Maps, Snohomish County PDS Mapper

## OVERALL WETLAND CATEGORY (based on functions or special characteristics 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality		Hydrologic		Habitat					
<i>Circle the appropriate ratings</i>										
Site Potential	H	(M)	L	H	(M)	L	H	M	(L)	
Landscape Potential	H	M	(L)	H	M	(L)	H	(M)	L	
Value	H	(M)	L	(H)	M	L	(H)	M	L	TOTAL
Score Based on Ratings	5			6			6		17	

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

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

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

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

Wetland name or number: Wetland J

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

### Depressional Wetlands

<b>Map of:</b>	<b>To answer questions:</b>	<b>Figure #</b>
Cowardin plant classes	D 1.3, H 1.1, H 1.4	J-1
Hydroperiods	D 1.4, H 1.2	J-2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	J-2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	J-2
Map of the contributing basin	D 4.3, D 5.3	J-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	J-4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	J-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	J-6

## HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

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

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

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

**YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number: Wetland J

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

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

<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. <b>Characteristics of surface water outflows from the wetland:</b>		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		3
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2		
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. <b>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</b> <input type="checkbox"/> Yes = 4 <input checked="" type="checkbox"/> No = 0		0
D 1.3. <b>Characteristics and distribution of persistent plants</b> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		5
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > 1/2 of area points = 3		
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1		
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0		
D 1.4. <b>Characteristics of seasonal ponding or inundation:</b> <i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
<input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		2
<input checked="" type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2		
<input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0		
<b>Total for D 1</b>	Add the points in the boxes above	10

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source:	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 2</b>	Add the points in the boxes above	0

**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?	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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)?	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 3</b>	Add the points in the boxes above	1

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

**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>		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet).	points = 4	4
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet.	points = 7	3
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet.	points = 5	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland.	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water.	points = 1	
<input type="checkbox"/> 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>		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit.	points = 5	3
<input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit.	points = 0	
<input type="checkbox"/> 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>10</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>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?</b>	<input type="checkbox"/> Yes = 1 <input checked="" type="checkbox"/> No = 0	0
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>0</b>

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

Record the rating on the first page

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</b>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• <input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	2
• <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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.		
<i>Explain why: ....</i>	points = 0	
<input type="checkbox"/> 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>		
	<input type="checkbox"/> Yes = 2 <input checked="" type="checkbox"/> No = 0	0
<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

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

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

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

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

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

0

H 1.2. Hydroperiods  
 Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

Permanently flooded or inundated 4 or more types present: points = 3  
 Seasonally flooded or inundated 3 types present: points = 2  
 Occasionally flooded or inundated 2 types present: points = 1  
 Saturated only 1 type present: points = 0  
 Permanently flowing stream or river in, or adjacent to, the wetland  
 Seasonally flowing stream in, or adjacent to, the wetland  
 **Lake Fringe wetland** **2 points**  
 **Freshwater tidal wetland** **2 points**

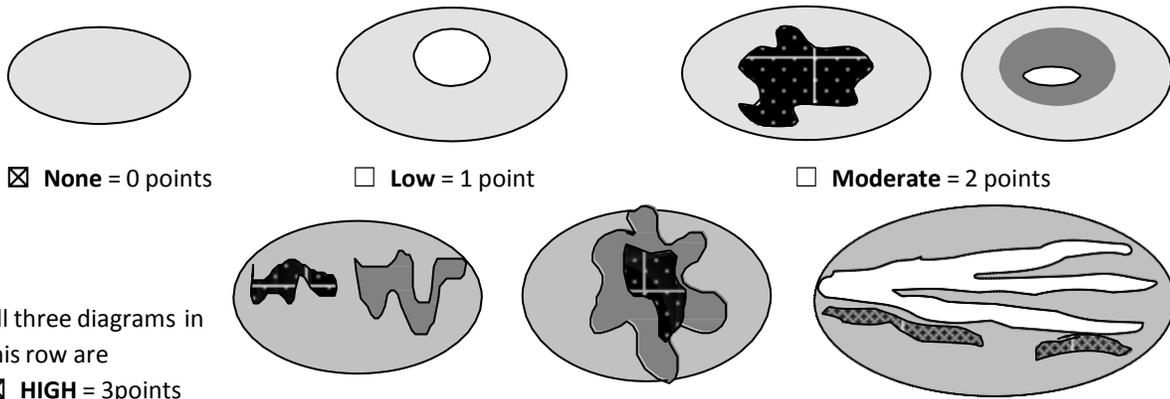
0

H 1.3. Richness of plant species  
 Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.  
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

1

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.*



0

Wetland name or number: Wetland J

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

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 10% + (5%/2) = 12.5%</i></p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li><input type="checkbox"/> 20-33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li><input checked="" type="checkbox"/> 10-19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>		1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 22% + (32%/2) = 38%</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li><input type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>		2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></li> <li><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></li> </ul>		0
Total for H 2	Add the points in the boxes above	3

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

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

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

Wetland name or number: Wetland J

## 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.

**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> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="margin-left: 100px;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b></span> <input checked="" type="checkbox"/> 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?  <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> 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> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)  <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No= <b>Category II</b></span></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? <span style="margin-left: 100px;"><input checked="" type="checkbox"/> Yes – Go to <b>SC 2.2</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No – Go to <b>SC 2.3</b></span></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <a href="http://www.dnr.wa.gov/NHPwetlandviewer">http://www.dnr.wa.gov/NHPwetlandviewer</a> <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <input checked="" type="checkbox"/> 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? <a href="http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf">http://file.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf</a>  <input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <span style="margin-left: 100px;"><input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Category I</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No = <b>Not a WHCV</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <input checked="" type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b></span> <input checked="" type="checkbox"/> 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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No – Go to <b>SC 3.4</b></span></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? <span style="margin-left: 100px;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b></span> <span style="margin-left: 100px;"><input type="checkbox"/> No = <b>Is not a</b></span></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> <p><input type="checkbox"/> <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input checked="" type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 5.1</b>    <input checked="" type="checkbox"/> No = <b>Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 6.1</b>    <input checked="" type="checkbox"/> No = <b>not an interdunal wetland for rating</b></p> <p><b>SC 6.1. 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)?</b>    <input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No – Go to <b>SC 6.2</b></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>    <input type="checkbox"/> Yes = <b>Category II</b>    <input type="checkbox"/> No – Go to <b>SC 6.3</b></p> <p><b>SC 6.3. 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?</b>    <input type="checkbox"/> Yes = <b>Category III</b>    <input type="checkbox"/> No = <b>Category IV</b></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b> If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p>N/A</p>

# WETLAND J (DEPRESSIONAL)



Figure J-1. Cowardin plant classes – D1.3, H1.1, H1.4

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

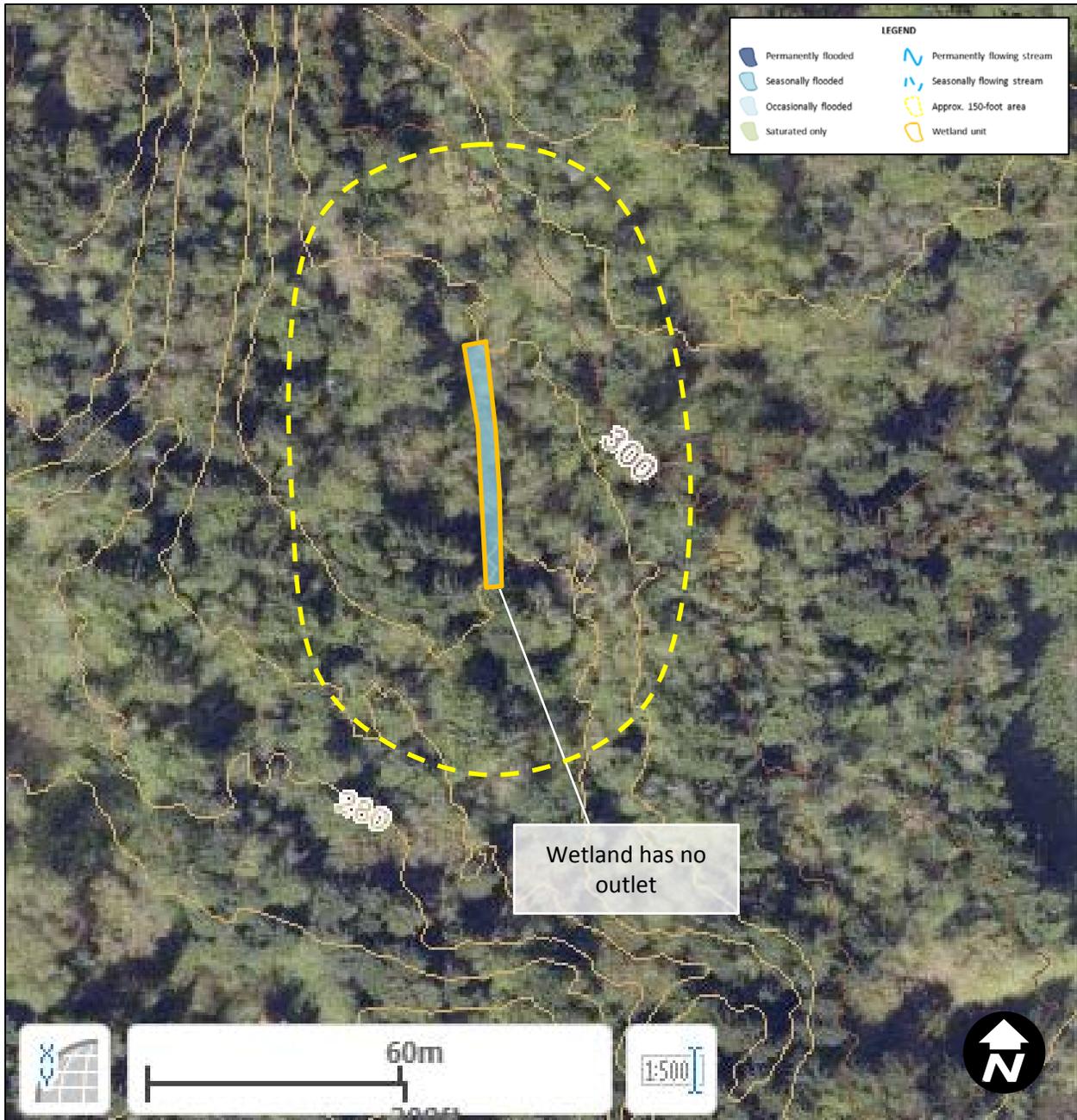


Figure J-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

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



Figure J-3. Map of the contributing basin – D4. 3, D5.3

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

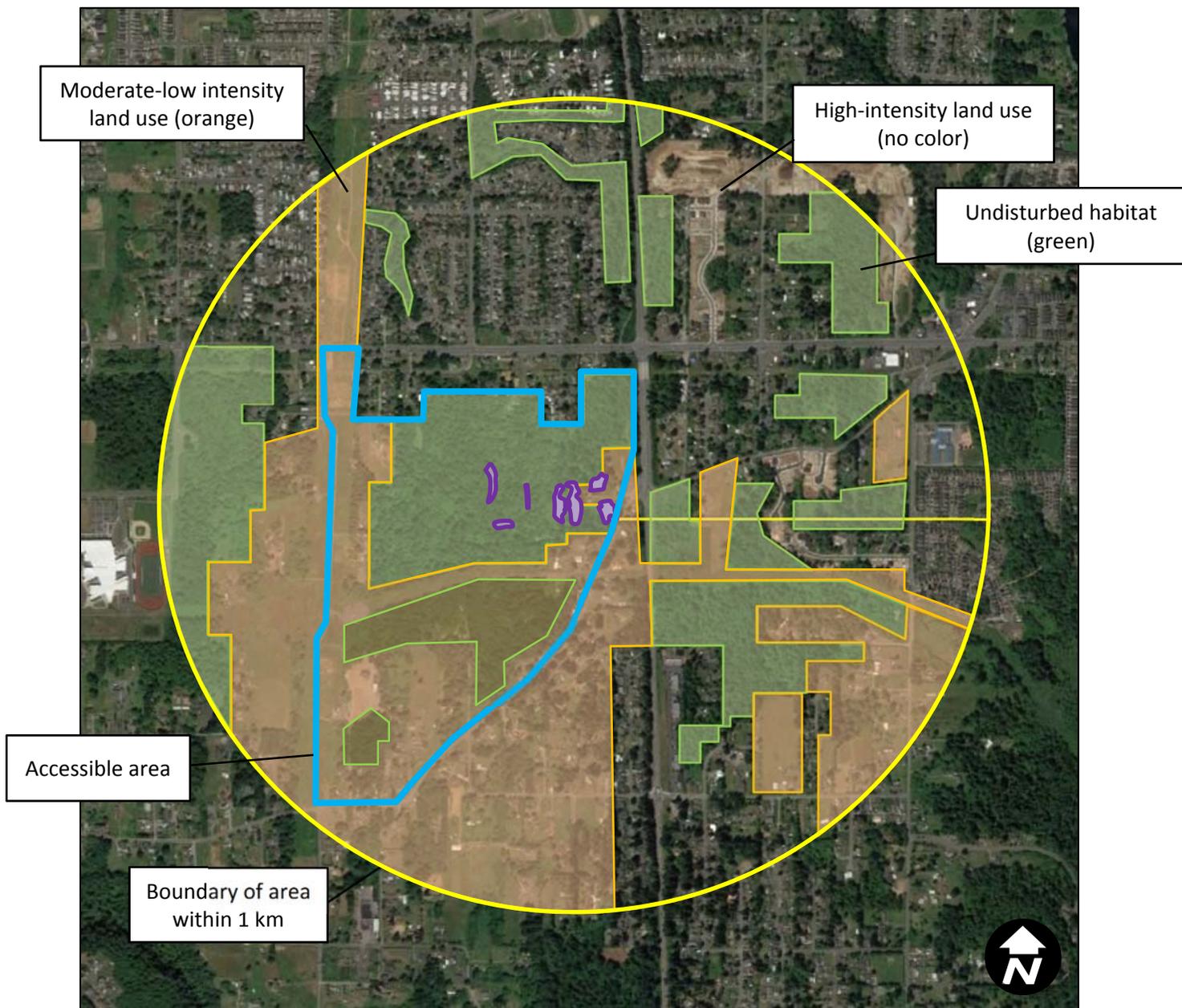


Figure J-4. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2.2, H2.3

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

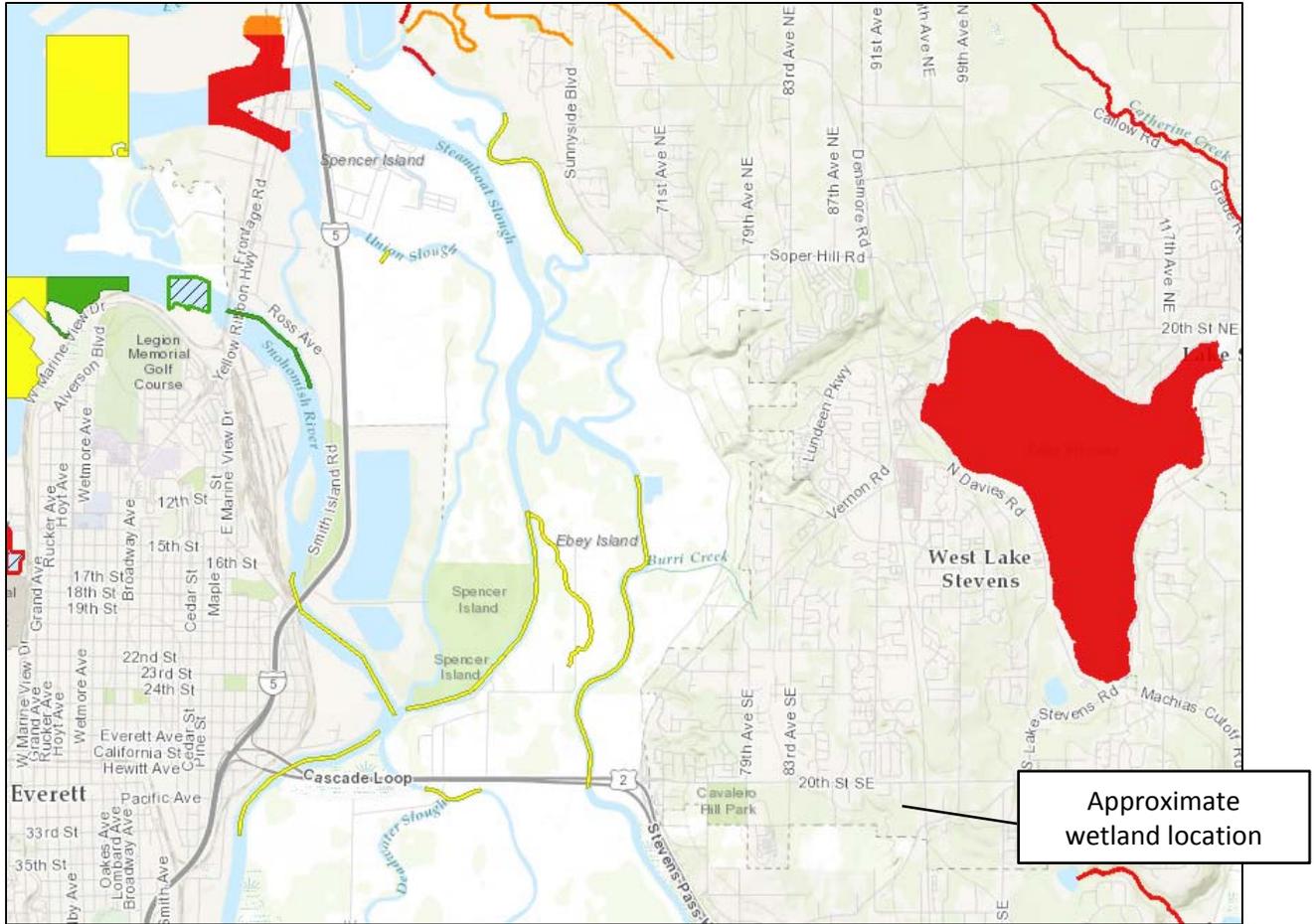


Figure J-5. Screen-capture of 303(d) listed waters in basin – D3.1, D3.2

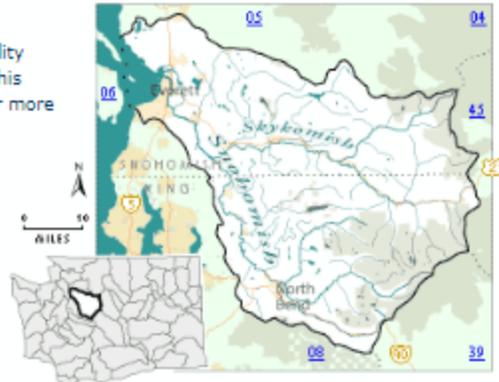
Features depicted are not to scale. Sketches are based on available data and best professional judgment.

# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 7: Snohomish

## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



### Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Lake Loma</a>	Total Phosphorus	Straight to implementation project under development	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Snohomish River</a>	<a href="#">French Creek / Pilchuck River</a>	Under development	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Dissolved Oxygen</li> <li>• Temperature</li> </ul>		
	<a href="#">Dioxin</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<a href="#">Estuary</a>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	<ul style="list-style-type: none"> <li>• Ammonia</li> <li>• BOD</li> </ul>		
<a href="#">Tributaries</a>	<ul style="list-style-type: none"> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Tributaries: <ul style="list-style-type: none"> <li>• Allen Creek</li> <li>• Quilceda Creek</li> <li>• French Creek</li> <li>• Woods Creek</li> <li>• Pilchuck River</li> <li>• Marshlands (Wood Creek) {2}</li> </ul>		
<a href="#">Snoqualmie River</a>	<ul style="list-style-type: none"> <li>• Ammonia-N</li> <li>• BOD (5-day)</li> <li>• Fecal Coliform</li> </ul>	EPA approved	<a href="#">Ralph Svrcek</a> 425-649-7165
	Temperature	EPA approved Has an implementation plan	

Figure J-6. Screen-capture of TMDL list for WRIA in which unit is found – D3.3

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