

# Critical Areas Report (Existing Conditions)

Bastyr University

Kenmore, Washington

5 April 2025



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PREPARED FOR:  
Bastyr University

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**DISCLAIMER**

This report has been prepared by Wet.land, LLC based on our best professional judgment, and is intended for the use outlined in Section 1.3 below. Use of this report or its appendices outside of its intended purpose is a breach of the contract under which this document was prepared.

Any delineations, wetland ratings, stream typings, or general characterizations were completed in accordance with the applicable regulations at the time field work was completed. Where information was provided by Others and not collected directly by Wet.land, LLC, such is stated within the report.

Conclusions presented within this report are based on the information available at the time of report preparation, and are accurate and true to the best of our knowledge. The opinions and conclusions contained within this report are a reflection of our interpretation of applicable regulations and are not final until concurrence is provided by the appropriate agencies.

# 1. Report Purpose

## 1.1 Project Name and Purpose

Bastyr University (King County tax parcel number 242604-9007) is a 50.72-acre property located within the City of Kenmore. The property is partially developed with the existing university facility, including multiple buildings, parking lots, and associated infrastructure. Four (4) wetlands and four (4) streams were identified within the vicinity of the Site.

## 1.2 Applicant

The Applicant is Bastyr University, represented by Devin Byrd, the CEO/President of the university.

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## 1.3 Report Purpose

This report has been prepared in accordance with the requirements of the Kenmore Municipal Code (KMC) Chapter 18.55 *Critical Areas*. This report has also been prepared in light of applicable State and Federal regulations.

## 1.4 Preparer Qualifications

Field investigations and reporting were completed by Jennifer Marriott, PWS and Kristen Numata, PWS (**Appendix A**).

Jennifer Marriott has a Bachelor's Degree and a Master's Degree in Biology from University of Central Florida, and a second Master's Degree in Soil and Environmental Science from the University of Florida. She has over 20 years of experience in wetland delineations and environmental permitting.

Kristen Numata has two Bachelor's Degrees in Biology and Environmental Science from Santa Clara University, and she has over nine years of experience in environmental consulting.

## 2. Project Site

### 2.1 Project Location

Bastyr University (Site) is located at 14500 Juanita Drive Northeast in Kenmore, Washington (**Appendix B, Figure 1**). The latitude/longitude coordinate for the center of the property is 47.7312, -122.2498. The Public Land Survey System location is the NE ¼ of Section 23 and NW ¼ of Section 24, Township 26 North, Range 4 East, Willamette Meridian (W.M.).

The study area for this Site extends 225 feet from the limits of the Site in which critical areas were also examined to determine their potential to impact the Site.

### 2.2 Project Site Description

Bastyr University started in 1978, but the main building on the campus was constructed in 1957. The campus includes the instructional buildings, student housing, recreation facilities, a large garden, and the Sacred Seeds trail system. A number of public and private trails are located across the northeast part of the Site. The trails extend off property to the north and south.

The site is bound by Juanita Drive NE to the east, NE 145<sup>th</sup> Street to the north, and undeveloped land owned by the Washington State Parks Department (St. Edwards State Park) to the south and west. The parcel is zoned Public/Semi-Public. Elevations at the property range from 380 to 440 feet above sea level. The northern half of the parcel is undeveloped, but is dominated by a native coniferous forest over hilly terrain. The managed portions of the Site that aren't buildings or infrastructure are maintained as lawn space used for recreation.

More detail on the existing conditions of these parcels is provided below in **Chapter 3**.

## 3. Existing Site Conditions

In-depth analysis of existing conditions within the Project Site is described below.

### 3.1 Methodology

Prior to field investigations of the Site, a thorough review of existing publicly available databases was completed to determine what has been previously mapped over the Site. These findings are outlined in Section 3.2 below. During field investigations, the routine approach described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (U.S. Army Corps of Engineers, 2010) was used as a baseline for evaluating the Site for the presence of wetlands. This supplement is in addition to the 1987 Corps of Engineers Wetlands Delineation Manual, which serves as the baseline on which the regional supplements build. Wetlands were rated using the Washington State Wetland Rating System for Western Washington (Hruby 2014 as updated in 2023). The presence of streams onsite was determined using the methodology described in *Determining the Ordinary High Water Mark on Streams in Washington State* (Olson and Stockdale, 2010).

### 3.2 Database Review Summary

An in-depth review of Agency database results for this Project Site follows in **Table 1**, below. Databases were reviewed for features on the site and within 225 feet of the site. Copies of database results are provided in **Appendix**

**B.** Databases referenced include:

- Natural Resource Conservation Service (NRCS), Websoils Survey (NRCS)
- US Fish and Wildlife (USFWS), Wetlands Online Mapper (National Wetlands Inventory, NWI) (USFWS)
- Washington State Department of Ecology (ECY) Water Quality Atlas
- Washington State Department of Fish and Wildlife (WDFW) Priority Species and Habitats
- Washington State Department of Natural Resources (WDNR) Forest Practices Application Mapping Tool (FPAMT)
- Statewide Integrated Fish Distribution (SWIFD) Web Map
- Fish Passage Culverts Map
- Google Earth
- Historic Aerials, [www.historicaerials.com](http://www.historicaerials.com)
- King County iMap
- City of Kenmore GIS Map

**Table 1.** Summary of Background Review of Publicly Available Databases (Accessed 27 March 2025).

Database	Agency (Database Manager)	Website
Township, Range, Section Map	WSDOT	NE ¼ of Section 23 and NW ¼ of Section 24, Township 26 North, Range 4 East, W.M.
Watershed Boundaries	ECY	HUC 8 (12) – 17110012(0400) WRIA 8: Cedar – Sammamish Watershed Name: Cedar River/Lake Washington Drainage Basin: East Lake Washington – Kenmore South
Websoils	NRCS	<b>Figure 2.</b> Onsite: AgC – Alderwood gravelly sandy loam, 8-15% slopes Offsite: KpD – Kitsap silt loam, 15-30% slopes Neither soil map units are considered hydric.
National Wetlands Inventory	USFWS	No features within Study Area.
Map Service Center	FEMA	No features within Study Area.
Washington State Water Quality Atlas	ECY	No features within Study Area.  Lake Washington identified downstream within one mile: ID 51592: 2,3,7,8-TCDD (Dioxin) ID 52704: Polychlorinated biphenyls (PCBs) ID 74461: 4,4'-DDE ID 76479: Dieldrin ID 77050: Chlordane  No TMDLs mapped in the watershed.
Priority Habitats and Species (PHS)	WDFW	Northern forested half of parcel identified as Biodiversity Area and Corridor. Township identified for little brown bat ( <i>Myotis lucifugus</i> ).
Forest Practices Application Mapping Tool	WDNR	One Type N stream is mapped south of the Project Site within the study area.
Statewide Integrated Fish Distribution (SWIFD) Web Map	NWIFC	No features within Study Area.
Washington State Fish Passage	WDFW	No features within Study Area.



Database	Agency (Database Manager)	Website
King County iMap	King County	<b>Figure 3.</b> One (1) unclassified stream mapped off-site to the east.
City of Kenmore GIS	City of Kenmore	<b>Figure 4.</b> Moderate landslide hazard areas mapped onsite. One (1) stream is mapped within the study area, as well as high landslide hazard areas and erosion hazards.

### 3.3 Field Investigation Results

The Site was evaluated for critical areas on 12 February 2025. Site photographs are included in **Appendix D**. A summary of these findings is provided below.

#### 3.3.1 Weather

Precipitation data for the three months prior to field work were collected and analysed from the Seattle Sand Point weather station (**Table 2**). It was determined that this period fell within normal rainfall and any primary hydrology indicators will accurately reflect wetland conditions.

**Table 2.** WETS Data 1991 - 2023, Seattle Sand Point Weather Station, WA

Month	30% Chance Will Have		Monthly Total Precipitation	Condition	Value	Weight	Total
	Less Than	More Than					
November	4.29	6.70	5.40	Normal	2	1	2
December	4.06	6.69	6.71	Wet	3	2	6
January	3.95	5.97	2.15	Dry	1	3	3
February 1-11	2.43	4.05	0.93				
<b>Sum</b>							<b>11</b>

<sup>1</sup> Dry = 6 – 9 points; Normal = 10 – 14 points; Wet = 15 – 18 points

#### 3.3.2 Wetlands

Four wetlands (Wetlands A, B, C, and D) were observed on or adjacent to the property (**Figure 5**). No formal delineations were completed, and no datasheets were collected. However, approximate wetland and stream limits were established by using detailed topography combined with field verification of the wetland limits and

conditions. The wetlands are well contained within clear topographic boundaries that identifying the wetlands through this method has a high degree of confidence for the purposes of this report.

Wetland ratings and supporting figures are provided in **Appendix E**.

#### Wetland A

Wetland A is a forested depressional and slope wetland located in the northwest corner of the property. This wetland is contained within a shallow valley. This wetland is hydrologically supported by stormwater from the Bastyr campus that's routed to the south end of this wetland. The wetland drains to the north through a culvert under NE 145<sup>th</sup> Street into Stream 1, which is discussed below. This culvert placement is causing some water to back up within Wetland A that is causing the ponding of water during high rainfall events. This appears to indicate that the culvert is either undersized or at least partially clogged. Otherwise, this wetland mostly acts as a slope wetland. Wetland A was dominated by black cottonwood (*Populus balsamifera*), red alder (*Alnus rubra*), and salmonberry (*Rubus spectabilis*).

#### Wetland B

Wetland B is a large forested and scrub-shrub riverine and depressional wetland located in the northeast corner of the property. This wetland begins near the east central edge of the Site near the top of a ridge and drains to the north. A topographic divide is located near where this wetland begins, where surface runoff flows either north or south. No stream or wetland conditions were found near the south (upper) end of the wetland that would indicate hydrology extending any further south. The lower/northern limits of this wetland are controlled by a culvert under NE 145<sup>th</sup> Street. Wetland conditions extend north on the downstream side of this culvert. This is a large riparian corridor that collects area runoff before conveying that runoff north towards Lake Washington.

Wetland B receives runoff from the east side of Juanita Drive NE through a series of culverts that convey area runoff under Juanita Drive NE, through Wetland C and Streams 1 and 2, before entering Wetland B.

Dominant species include western red cedar (*Thuja plicata*), black cottonwood, red alder and salmonberry. The southern (upper) limits of this wetland were dominated by large areas of open water during the site visit that constricted down into more stream-like conditions with adjacent vegetation. There are two (2) pedestrian bridges onsite where a walking trail crosses this wetland.

#### Wetland C

Wetland C is a small scrub-shrub slope wetland located between Wetland B and Juanita Drive NE. The wetland is dominated by salmonberry, and drains to the southwest to Wetland B via Stream 2. This wetland is located where the stream channel flattens out topographically a bit immediately uphill of a bridged pedestrian crossing over Stream 2 is located.

#### Wetland D

Wetland D is a small emergent slope wetland located north of Holmes Point Drive NE. Dominant vegetation includes small-fruited bulrush (*Scirpus microcarpus*) and reed canarygrass (*Phalaris arundinacea*). The wetland drains to the west along the road prism to the offsite portion of Stream 4.

### 3.3.3 Streams

Four streams (Streams 1, 2, 3, and 4) were observed on or adjacent to the property (**Figure 5**). An analysis of contours was conducted between the Site and Lake Washington, and the streams were determined to be not accessible by fish because of stream gradients greater than 16 percent.

#### Stream 1

Stream 1 is the outlet for Wetland A, and starts north of NE 145<sup>th</sup> Street at the outlet of the culvert associated with Wetland A. This feature flows generally west along the north segment of NE 145<sup>th</sup> Street towards the Saint Edward State Park parking area. This feature was not followed in the field beyond the study area.

#### Stream 2

Stream 2 enters the Site through a culvert under Juanita Drive NE, flows through Wetland C and ends in Wetland B. The ordinary high water mark was less than two (2) feet wide. Pedestrian trails are located near this stream with the only crossing located immediately downhill of Wetland C.

#### Stream 3

Stream 3 enters the Site through a culvert under Juanita Drive NE and ends in Wetland B. The ordinary high water mark was less than two (2) feet wide. A pedestrian trail crossing exists over this stream at two (2) locations.

#### Stream 4

Stream 4 is located offsite, but within the study area. This stream appears to originate from area stormwater routed from within the City of Kirkland under Juanita Drive NE and into a stream channel that continues downhill towards Lake Washington. The stream was observed at the Holmes Point Road Drive NE crossings, and ranged from three (3) to five (5) feet wide. Despite the channel width, this stream was determined to be non-fish-bearing due to its gradient exceeding 16 percent downslope of this location. No connection was observed between Wetland B and Stream 4.

### 3.3.4 Native Vegetation

Native vegetation is dominant in the northern half of the parcel. Dominant species included Douglas fir (*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), western red cedar, big leaf maple (*Acer macrophyllum*), western hemlock (*Tsuga heterophylla*), swordfern (*Polystichum munitum*), salal (*Gaultheria shallon*), and dull Oregon grape (*Mahonia nervosa*). The upland vegetation onsite was typical of the Douglas fir dominated forests common in this area.

### 3.3.5 Invasive Species

Invasive species were generally sparse in the natively vegetated areas. Identified invasive species observed onsite include English holly (*Ilex aquifolium*), Himalayan blackberry (*Rubus armeniacus*) and English ivy (*Hedera helix*).

## 3.4 Wildlife

General observations on expected and observed wildlife usage is below.

### 3.4.1 General Wildlife Usage

The Site is adjacent to Saint Edwards State Park. Small, medium, and large mammals are expected to move through the Site as connectivity for land-based wildlife is expansive, particularly with the connectivity to Lake Washington. Land-based connectivity is quite good given the urban nature of the area as other local parks are present to the south that offer large undeveloped tracts of land, though much of this undeveloped land occurs over steep slopes. Connectivity beyond this localized series of state and local parks is poor due to the intense urban areas.

### 3.4.2 Federally Listed Species

No habitat occurs onsite that would support federally listed species. No salmonids have the potential to occur within the on-site streams. There is the potential of Bald Eagle flyovers or perching on trees within the Site because of the proximity to Lake Washington, but no evidence of nesting or roosting was observed, nor are any mapped on or adjacent to the Site.

The Site is located within the greater Pacific Flyway so migratory birds are expected to fly over the use, and have the potential to use the site for layovers.

### 3.4.3 State Listed Species

State priority habitats on the Site include wetlands, aquatic areas (instream and riparian habitat), priority snags and logs, mature forest, and a biodiversity area and corridor. Priority snags and logs were observed or expected to occur on-site given the composition of the forest. The northern half of the Site is mapped as a biodiversity area and corridor due to its proximity and connectivity to Saint Edwards State Park.

The entire township is identified on PHS for little brown bat (*Myotis lucifugus*).

### 3.4.4 Local Species

KMC 18.55.500 outlines criteria for fish and wildlife habitats of importance. There are seven (7) criteria for habitats of importance:

1. Documented presence of species listed by the federal government or the State of Washington as endangered, threatened or sensitive; or
2. Great blue heron rookeries or active nesting trees; or
3. Pileated woodpecker breeding habitat as mapped by the Washington Department of Fish and Wildlife in its Priority Habitats and Species Program; or
4. Biodiversity areas and corridors as mapped by the Washington Department of Fish and Wildlife in its Priority Habitats and Species Program; or
5. Bald eagle habitat, protected pursuant to the Federal Bald and Golden Eagle Protection Act; or
6. Anadromous fish habitat; or
7. Habitat for species nominated and approved by the City per subsection C of this section.

The northern half of the Site is mapped as a Biodiversity Area and Corridor and is classified as a fish and wildlife habitat of local importance. The onsite forests have the potential to provide suitable habitat for Pileated Woodpeckers, though none were heard during the site visit. A survey targeting Pileated Woodpeckers was not

completed. No other species listed above (Great Blue Heron, Bald Eagle, Anadromous fish) were observed or would be expected to occur onsite based on the available habitat onsite, or lack thereof.

## 4. Regulatory Review

The Site falls under the jurisdiction of the City of Kenmore, State of Washington, and the US Army Corps of Engineers. A summary of the relevant regulations follows.

### 4.1 Federal Regulations

Waters of the US, including wetlands and streams, occur on or adjacent to the Site and may be subject to applicable Federal regulations. Wetland and stream impacts are regulated at the Federal level by Sections 404 and 401 of the Clean Water Act. The US Army Corps of Engineers (USACE) is responsible for administering compliance with Section 404 via the issuance of Nationwide or Individual Permits for any fill or dredging activities within wetlands under Corps jurisdiction. If no actions are proposed that would directly impact a wetland or stream, then no coordination with the USACE is necessary for Section 404 compliance. Culvert replacements and similar work in or over streams typically require coordination with the USACE.

### 4.2 State Regulations

Wetlands on the Site are subject to applicable State regulations. However, City regulations pertaining to wetlands and streams are based on state guidelines and will dictate critical areas protections, such as establishing buffer widths.

#### 4.2.1 Washington State Department of Ecology (ECY)

Any project that is subject to Section 404 permitting is also required to comply with Section 401 Water Quality Certification, which is administered by the Washington State Department of Ecology (ECY). If no actions are proposed that would directly impact a wetland or stream, then no coordination with the USACE is necessary for Section 404 compliance, which would also include Section 401 compliance. Additional coordination with ECY may be necessary for other permitting requirements, such as SEPA or stormwater permits.

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

Hydraulic Project Application (HPA) permits are only required for impacts that have the potential to affect the bed, bank, and flow of streams or other waterbodies. Replacement of culverts or pedestrian bridges, or construction of a stormwater outfall within proximity to a stream, would likely require coordination with WDFW for an HPA.

### 4.3 Local Regulations

The Site falls within the City of Kenmore limits and is subject to the regulations of the Kenmore Municipal Code (KMC).

#### 4.3.1 Shoreline Jurisdiction

The Site does not occur within Shoreline jurisdiction.

#### 4.3.2 Non-Shoreline Jurisdiction

Critical areas on the Site are subject to the regulations of KMC 18.55 – *Critical Areas*. A summary is outlined in **Table 3** below.

**Table 3. Critical Areas Summary**

Critical Area ID	Wetland Category (Habitat Score)/ Stream Typing	Standard Buffer (ft)	Minimum Buffer (ft) with Averaging
Wetland A	II (7)	110	82.5
Wetland B	II (8)	225	168.75
Wetland C	III (7)	110	82.5
Wetland D	III (7)	100	82.5
Stream 1	Type Ns	25	
Stream 2	Type Ns	25	
Stream 3	Type Ns	25	
Stream 4	Type Ns	25	

#### Wetlands

Wetland limits onsite were determined through a combination of detailed topography through a mapping exercise with field verification. For the purposes of site planning, an additional 10 feet was added to the wetland buffers in other documents in order to maximize protections towards wetlands. The intent is to clearly identify the critical area pockets within the Site that will be avoided moving forward.

Wetlands identified on the Site and within the Study Area were rated using the most recent update to the wetland rating system. Wetland buffers within the City of Kenmore are driven by the habitat score more than the wetland category. Category II or III wetlands with a habitat score of 7 require a standard buffer of 110 feet. Category II wetlands with a habitat score of 8 require a standard buffer of 225 feet.

Per KMC 18.55.325.C, wetland buffers may be terminated at legally established roadways, such as Juanita Drive NE and NE 145<sup>th</sup> Street if the following conditions are met:

1. Does not provide additional protection to the proposed development from flooding or other hazard, or to the wetland; and
2. Provides insignificant biological, geological or hydrological buffer functions relating to the other portion of the buffer adjacent to the wetland.

Wetland buffers may be reduced through wetland buffer averaging per KMC 18.55.325.B. The following conditions must be met:

1. Additional protection to the wetland will be provided through implementation of a buffer enhancement plan;

2. It will not reduce wetland functions or values;
3. The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation, and the wetland would benefit from a wider buffer in places and would not be adversely impacted by a narrower buffer in other places;
4. The total area contained in the buffer after averaging is no less than that which would be contained within the standard buffer; and
5. The buffer width shall not be reduced by more than 25 percent in any one place.

### Streams

All streams identified on or adjacent to the property were classified as Type Ns due to the inaccessible gradient to salmonids. Type Ns streams require a standard buffer of 25 feet.

### Building/Structure Setback

Critical area buffers require a 15-foot building setback line to prevent encroachment into the critical areas following construction (KMC 18.55.270). This setback only applies to structures. Typical allowed uses within a structure setback include roads, parking, or landscaping, among other non-structure uses.

### Biodiversity Area and Corridor

The undeveloped portion of the Site is mapped as a Biodiversity Area and Corridor. This designation does not preclude development, but does require that consideration during site planning be given to the species that have the potential to use the Site. Consideration can be given through careful planning of road and building locations, reducing impacts to the trees onsite, and offering compensation through actions elsewhere onsite that enhance habitat for the target species. For this site, Pileated Woodpeckers are the only clearly designated species that has the likelihood to use the onsite forests. WDFW has management guidelines to address Pileated Woodpecker habitat that can be applied to this Site during the permitting process [*Management Recommendations for Washington's Priority Species Volume IV: Birds*, May 2004, as revised 2012, WDFW]. A Habitat Management Plan would be required for the property to address the remaining undeveloped areas onsite (KMC 18.55.510).

#### 4.3.3 Flood Hazard Area

No 100-year floodplains are mapped on or adjacent to the Site.



## 5. Summary

Bastyr University is located in Kenmore, Washington. Four (4) wetlands and four (4) streams were identified on or adjacent to the property. Wetlands A, C, and D require standard buffers of 110 feet, and Wetland B requires a standard buffer of 225 feet. Wetland buffers may be reduced through buffer averaging by up to 25%. Streams 1, 2, 3, and 4 require a 25-foot standard buffer. An additional 10 feet was added to the buffers of Wetlands A and B for site planning to ensure no impacts would occur to critical areas through the site planning process. The intent is to avoid the need for future critical area assessments by ensuring the maximum buffer widths are applied with the additional 10-foot offset as well as the required structure setbacks.

The undeveloped portion of the property is mapped as a priority habitat (Biodiversity Area and Corridor) that will require special consideration during site planning. A Habitat Management Plan would be required that would be implemented upon completion of the permitted actions for the Site.

## 6. References

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2. Cowardin, L. M., Carter, V., Golet, F. C., & LaRoe, E. T. (1979). *Classification of Wetlands and Deepwater Habitats of the United States*. Washington, DC: U.S. Department of the Interior, Fish and Wildlife Service.
3. Environmental Laboratory. (1987). "*Corps of Engineers Wetlands Delineation Manual*," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
4. Hrubby, T. (2014). *Washington State Wetland Rating System for Western Washington: 2014 Update* (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.
5. Kenmore Municipal Code (KMC) Chapter 18.55 Critical Areas (accessed 27 March 2025).
6. Lichvar, R. (2012). The National Wetland Plant List. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory. Retrieved from [http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac=\\$N/1012381](http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac=$N/1012381)
7. U.S. Army Corps of Engineers. (2010, May). Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). U. S. Army Corps of Engineers. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
8. United States Department of Agriculture, Natural Resources Conservation Service. 2024. *Field Indicators of Hydric Soils in the United States, Version 9.0*. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

# APPENDIX A

Jennifer Marriott, PWS – Resume

Kristen Numata, PWS - Resume

## Jennifer M. Marriott, PWS

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### QUALIFICATIONS

- 🌿 Master of Science, Soil Science, University of Florida, Gainesville, FL, 2010
- 🌿 Master of Science, Biology (Ecology), University of Central Florida, Orlando, FL, 2003
- 🌿 Bachelor of Science, Biology, University of Central Florida, Orlando, FL, 2001
- 🌿 Professional Wetland Scientist (No. 1891)

### FOCUS AND EXPERTISE

- 🌿 Project Management
- 🌿 Project Summaries and Rapid Environmental Due Diligence Reports
- 🌿 Wetland and Stream Delineations/Habitat Evaluation
- 🌿 Wetland (Critical Areas) Permitting
- 🌿 Mitigation Planning
- 🌿 Wetland Functional Assessment
- 🌿 Hydric Soil Determinations
- 🌿 Training and Mentoring

### EXPERIENCE

- 🌿 Senior Ecologist/Owner; Wet.land, LLC; March 2020 - Present
- 🌿 Senior Ecologist/Project Manager; Talasaea Consultants, Inc.; June 2015 – March 2020
- 🌿 Senior Project Scientist; BL Companies, Inc.; July 2012 – July 2014
- 🌿 Environmental Scientist 3; RETTEW Associates, Inc.; March 2011 – February 2012
- 🌿 Ecologist; Cardno-ENTRIX, Inc. (formerly known as ENTRIX, Inc., fka Biological Research Associates); July 2003 – March 2011

### SKILLS, TRAINING & PROFESSIONAL MEMBERSHIPS

- 🌿 Washington (Coastal Training Program Workshops)
  - Multiple hydric soils training workshops (2008 to present; Florida, Pennsylvania, Ohio, Washington)
  - Revised Washington State Wetland Rating System, 2014 (April 2015, October 2022)
  - Using the Credit-Debit Method for Estimating Mitigation Needs (October 2015)
  - Using Field Indicators for Hydric Soils (November 2015)
  - Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats (March 2016)
  - How to Determine the Ordinary High Water Mark (September 2016)
  - WSDOT Biological Assessment Training (2022)
  - Salmon Ecology and Habitat Restoration (NWETC, 2023)

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### QUALIFICATIONS

- 🌿 Wetland Science and Management Certificate, University of Washington Professional Continuing Education, Seattle, WA, 2016
- 🌿 Bachelor of Science, Biology, Santa Clara University, Santa Clara, CA, 2014
- 🌿 Bachelor of Science, Environmental Science, Santa Clara University, Santa Clara, CA, 2014
- 🌿 Professional Wetland Scientist (No. 3412)
- 🌿 Certified Erosion and Sediment Control Lead (No. 70592)

### FOCUS AND EXPERTISE

- 🌿 Critical Areas Delineations and Site Assessments
- 🌿 Wetland Functional Assessment
- 🌿 Geographic Information Systems
- 🌿 Critical Area Permitting
- 🌿 Mitigation Planning and Performance Monitoring
- 🌿 Environmental Compliance and Construction Oversight

### EXPERIENCE

- 🌿 Ecologist/Owner; Wet.land, LLC; January 2022 – Present
- 🌿 Project Biologist; PBS Engineering and Environmental, Inc.; July 2019 – December 2021
- 🌿 Biologist/Environmental Scientist; David Evans and Associates, Inc.; July 2018 – July 2019
- 🌿 Ecologist; Talasaea Consultants, Inc.; July 2015 – July 2018

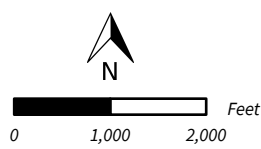
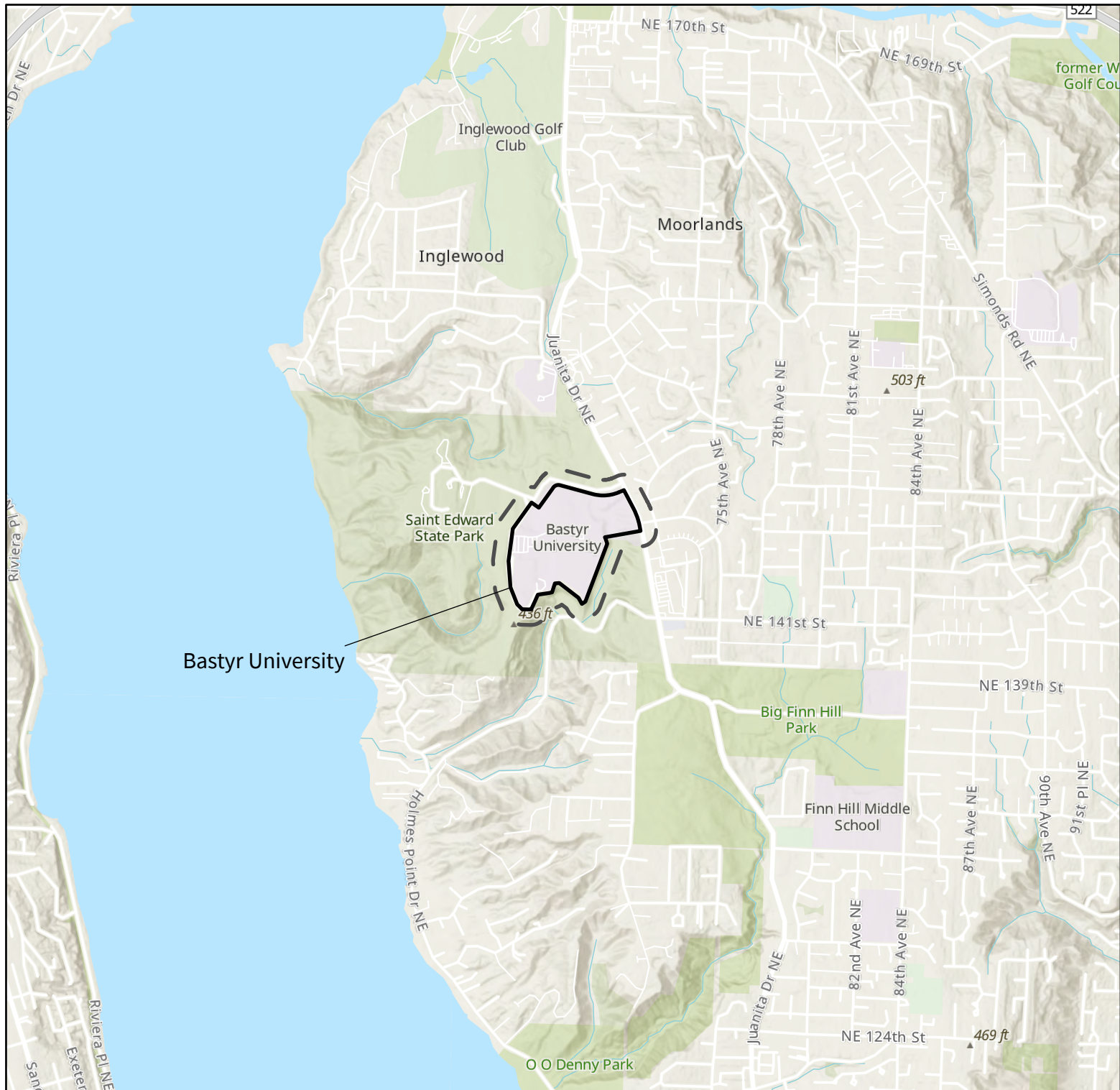
### SKILLS, TRAINING & PROFESSIONAL MEMBERSHIPS

- 🌿 Washington (Coastal Training Program Workshops)
  - Revised Washington State Wetland Rating System, 2014 (March 2016, October 2022)
  - Using the Credit-Debit Method for Estimating Mitigation Needs (April 2017)
  - How to Determine Ordinary High Water Mark (June 2017)
  - Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats (February 2018)
  - Winter Tree and Shrub Identification for Western WA Puget Lowland Habitats (February 2019)
  - Navigating SEPA (March 2019)
- 🌿 Other Technical Training
  - Junior Author, Washington State Department of Transportation (WSDOT) Biological Assessment Preparation for Transportation Projects Training (March 2020)
  - Fish Passage: Inventory and Assessment, Washington Department of Fish and Wildlife, (WDFW) (August 2020)
  - Fish Passage: Habitat Survey, WDFW (August 2020)

# APPENDIX B

## Figures

1. Vicinity Map
2. Web Soil Survey Map
3. King County GIS Map
4. City of Kenmore GIS Map
5. Existing Conditions Map



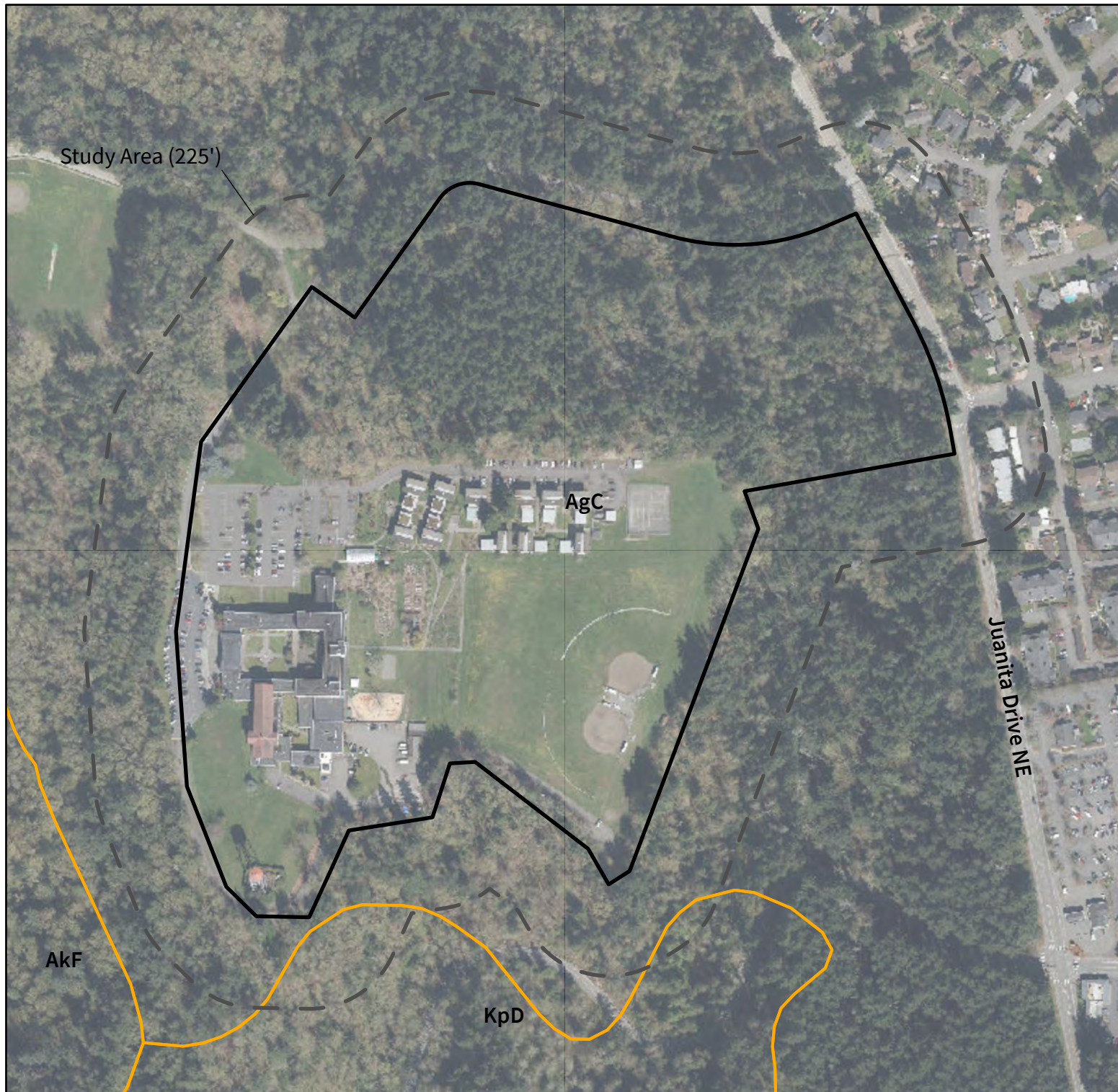
SOURCE: ESRI TOPOGRAPHY AND HILLSHADE



**VICINITY MAP**  
 Bastyr University  
 Critical Areas Report - Existing Conditions  
 14500 Juanita Drive Northeast, Kenmore, Washington

#0222  
 MAR 2025  
**FIGURE 1**





# LEGEND

- Bastyr Campus
- Study Area (225')
- Soil Map Units

## Soil Map Units Within Study Area

AgC - Alderwood gravelly sandy loam, 8-15% slopes  
KpD - Kitsap silt loam, 15-30% slopes

Neither soil map unit considered hydric.



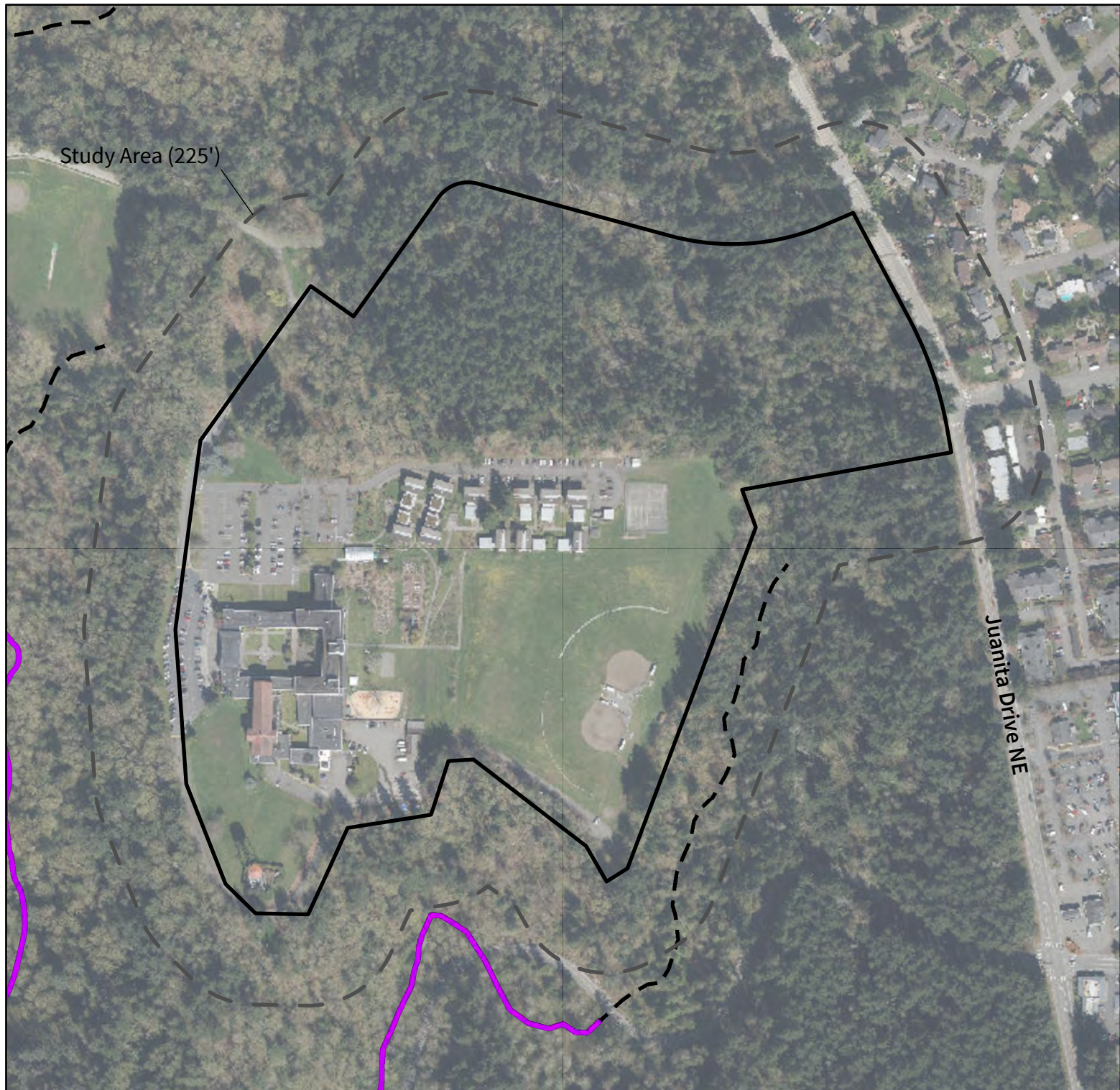
0 170 340 Feet

SOURCE: CITY OF KENMORE AERIAL 2022, WEB SOIL SURVEY GIS

## WEB SOIL SURVEY MAP

Bastyr University  
Critical Areas Report - Existing Conditions  
14500 Juanita Drive Northeast, Kenmore, Washington





# LEGEND

- |             |                             |  |                           |
|-------------|-----------------------------|--|---------------------------|
|             | Bastyr Campus               |  | F - Fish habitat,Physical |
|             | Study Area (225')           |  | F - Fish habitat,Presumed |
| Stream type |                             |  |                           |
|             | S - Shoreline of the state  |  | N - Non-fish bearing      |
|             | F - Fish habitat,Biological |  | Unclassified              |



0 170 340 Feet

SOURCE: CITY OF KENMORE AERIAL 2022, KING COUNTY GIS



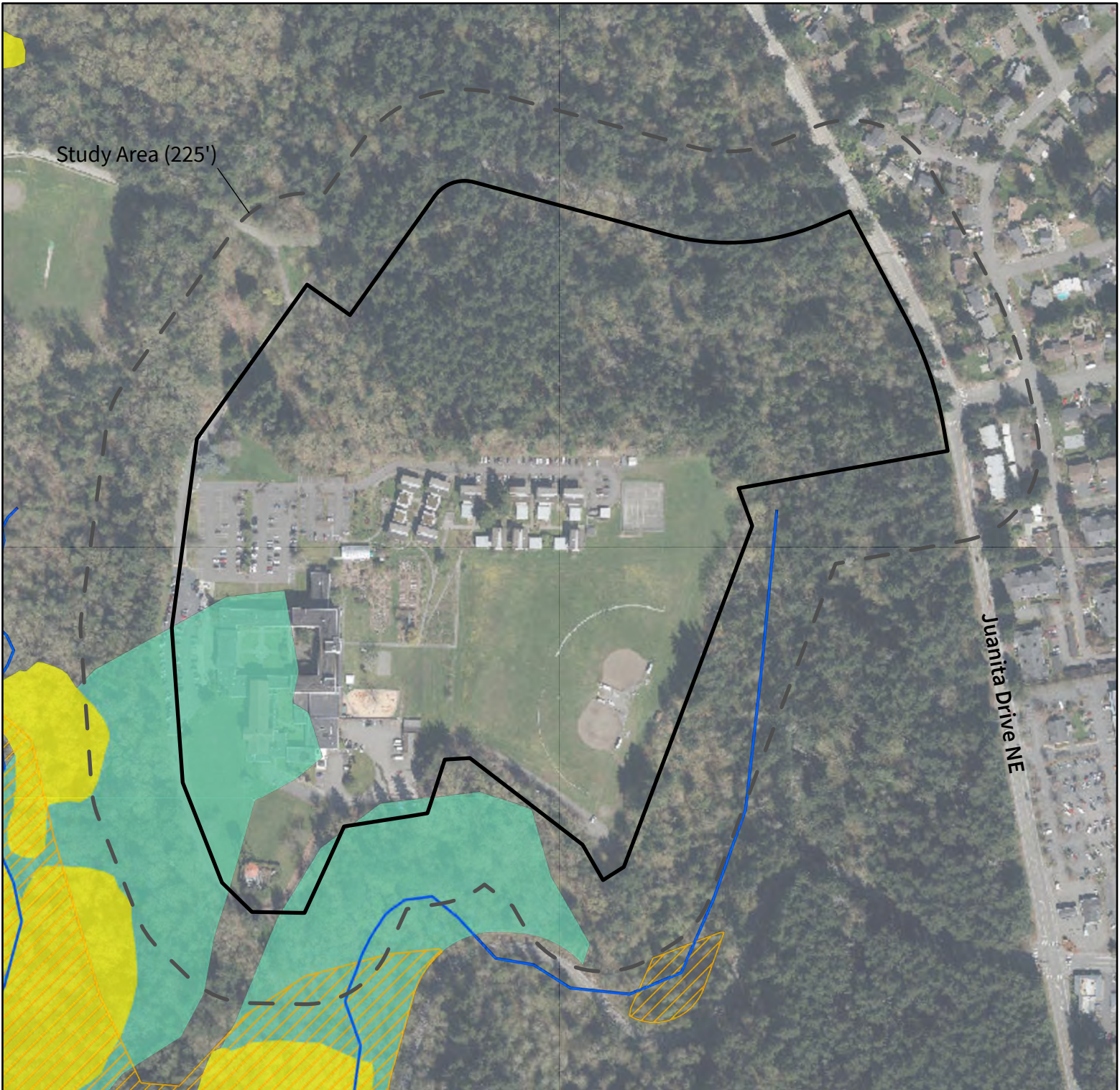
## KING COUNTY GIS MAP

Bastyr University  
Critical Areas Report - Existing Conditions  
14500 Juanita Drive Northeast, Kenmore, Washington

#0222  
MAR 2025

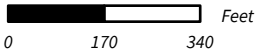
FIGURE 3





LEGEND

- |                   |                                 |
|-------------------|---------------------------------|
| Bastyr Campus     | <b>Landslide Hazards</b>        |
| Study Area (225') | High Landslide Hazard Areas     |
| Streams           | Moderate Landslide Hazard Areas |
| Erosion Hazards   |                                 |



SOURCE: CITY OF KENMORE AERIAL 2022, CITY OF KENMORE GIS

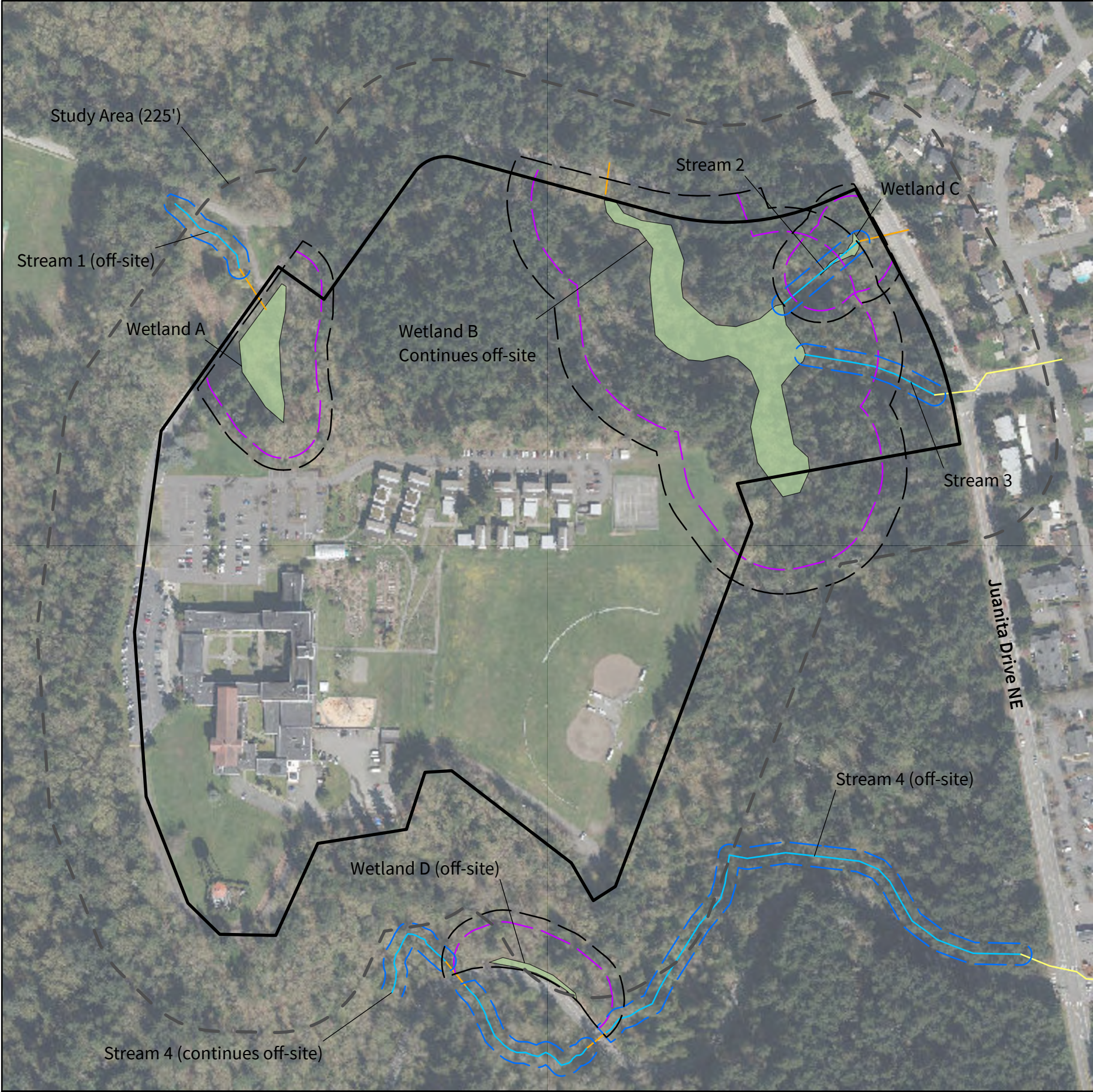


**CITY OF KENMORE GIS MAP**  
 Bastyr University  
 Critical Areas Report - Existing Conditions  
 14500 Juanita Drive Northeast, Kenmore, Washington

#0222  
 MAR 2025

**FIGURE 4**





LEGEND

- Bastyr Campus
- Study Area (225')
- Wetlands
- Standard Buffers
- Stream Buffer (25')
- Wetland Buffer (110 - 225')
- Minimum Wetland Buffer with Averaging
- Culvert
- Pipe
- Stream Centerline

Critical Area ID	Wetland Category (Habitat Score)/ Stream Typing	Standard Buffer (feet) KMC 18.55	Minimum Buffer (feet) with Averaging
Wetland A	II (7)	110	82.5
Wetland B	II (8)	225	168.75
Wetland C	III (7)	110	82.5
Wetland D	III (7)	110	82.5
Stream 1	Type Ns	25	
Stream 2	Type Ns	25	
Stream 3	Type Ns	25	
Stream 4	Type Ns	25	

**NOTE:** Field reconnaissance conducted 12 February 2025.

This map is approximate and is intended for preliminary planning and discussion purposes only. The information in this map is not intended for formal site design. This map does not reflect a field delineation or survey. All wetlands, streams, buffers, and property locations are approximate. Critical area locations and buffers are not final until field delineated, surveyed, and approved by agency staff.

**SOURCE:** CITY OF KENMORE AERIAL 2022, NOAA LIDAR CONTOURS, WET.LAND GPS DATA



# APPENDIX C

## Agency Database Results

## Agency Database Websites

Database	Agency (Database Manager)	Website
Township, Range, Section Map	WSDOT	<a href="https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=97a5ae98d8d04458860f64e201d155c4">https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=97a5ae98d8d04458860f64e201d155c4</a>
Watershed Boundaries	ECY	<a href="https://apps.ecology.wa.gov/waterqualityatlas/wqa/map">https://apps.ecology.wa.gov/waterqualityatlas/wqa/map</a>
Websoils	NRCS	<a href="https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
National Wetlands Inventory	USFWS	<a href="https://www.fws.gov/wetlands/data/Mapper.html">https://www.fws.gov/wetlands/data/Mapper.html</a>
Map Service Center	FEMA	<a href="https://msc.fema.gov/portal/home">https://msc.fema.gov/portal/home</a>
Washington State Water Quality Atlas	ECY	<a href="https://apps.ecology.wa.gov/waterqualityatlas/wqa/map">https://apps.ecology.wa.gov/waterqualityatlas/wqa/map</a>
Priority Habitats and Species (PHS)	WDFW	<a href="https://geodataservices.wdfw.wa.gov/hp/phs/">https://geodataservices.wdfw.wa.gov/hp/phs/</a>
Forest Practices Application Mapping Tool	WDNR	<a href="https://fpamt.dnr.wa.gov/default.aspx">https://fpamt.dnr.wa.gov/default.aspx</a>
Statewide Integrated Fish Distribution (SWIFD) Web Map	NWIFC	<a href="https://geo.nwifc.org/swifd/">https://geo.nwifc.org/swifd/</a>
Washington State Fish Passage	WDFW	<a href="https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html">https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html</a>
King County iMap	King County	<a href="https://gismaps.kingcounty.gov/iMap/">https://gismaps.kingcounty.gov/iMap/</a>
City of Kenmore GIS	City of Kenmore	<a href="https://experience.arcgis.com/experience/37357782e594497dade1aa6d9b55b023">https://experience.arcgis.com/experience/37357782e594497dade1aa6d9b55b023</a>



U.S. Fish and Wildlife Service

# National Wetlands Inventory

## Wetlands



March 27, 2025

### Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



# National Flood Hazard Layer FIRMette



122°15'20"W 47°44'1"N



Basemap Imagery Source: USGS National Map 2023

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

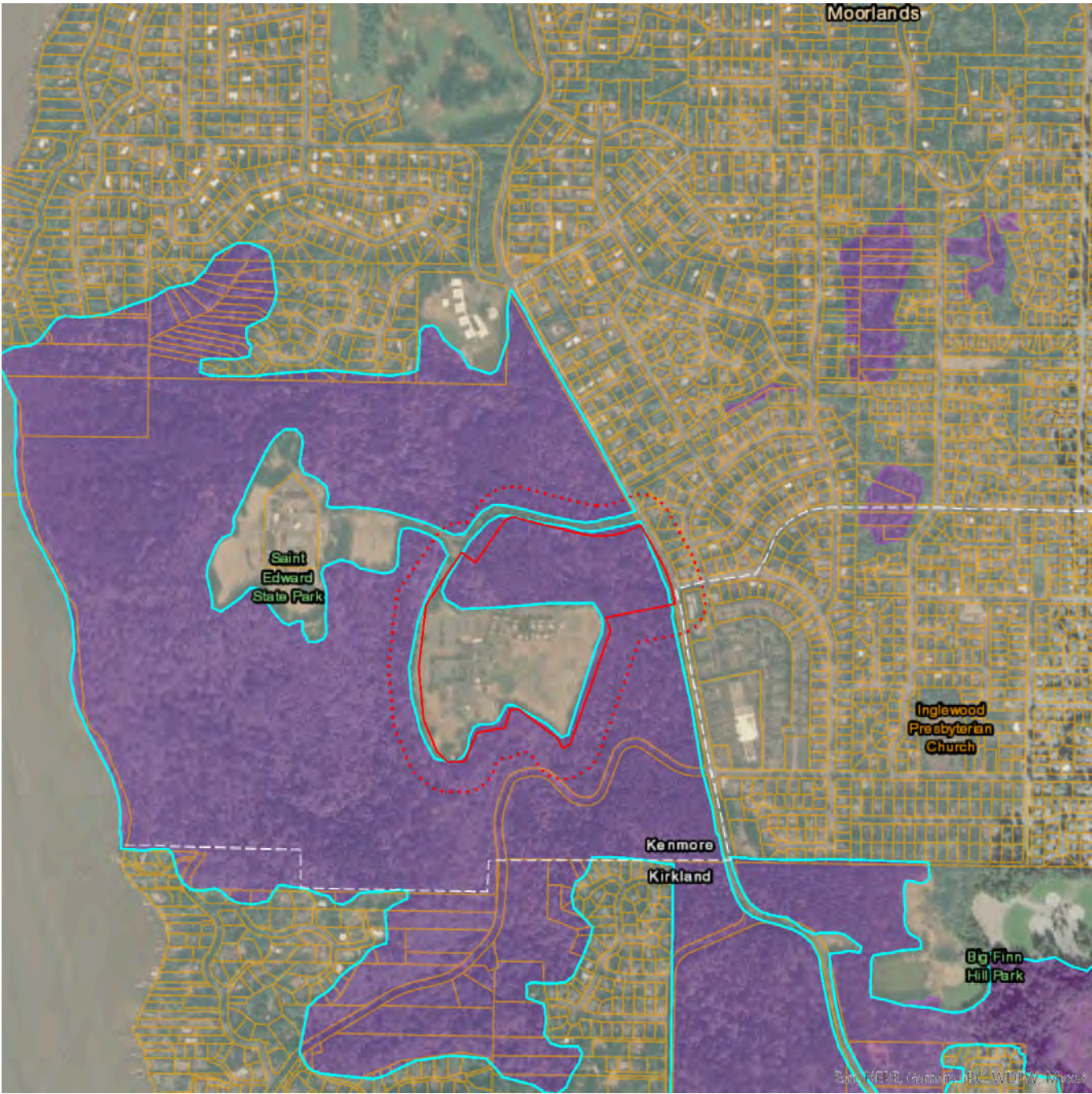
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/27/2025 at 9:24 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.





# Priority Habitats and Species on the Web



Buffer radius: 225 Feet

Report Date: 03/27/2025, Parcel ID: [2426049007](#)

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Biodiversity Areas And Corridor	N/A	N/A	No
Little Brown Bat			Yes

PHS Species/Habitats Details:

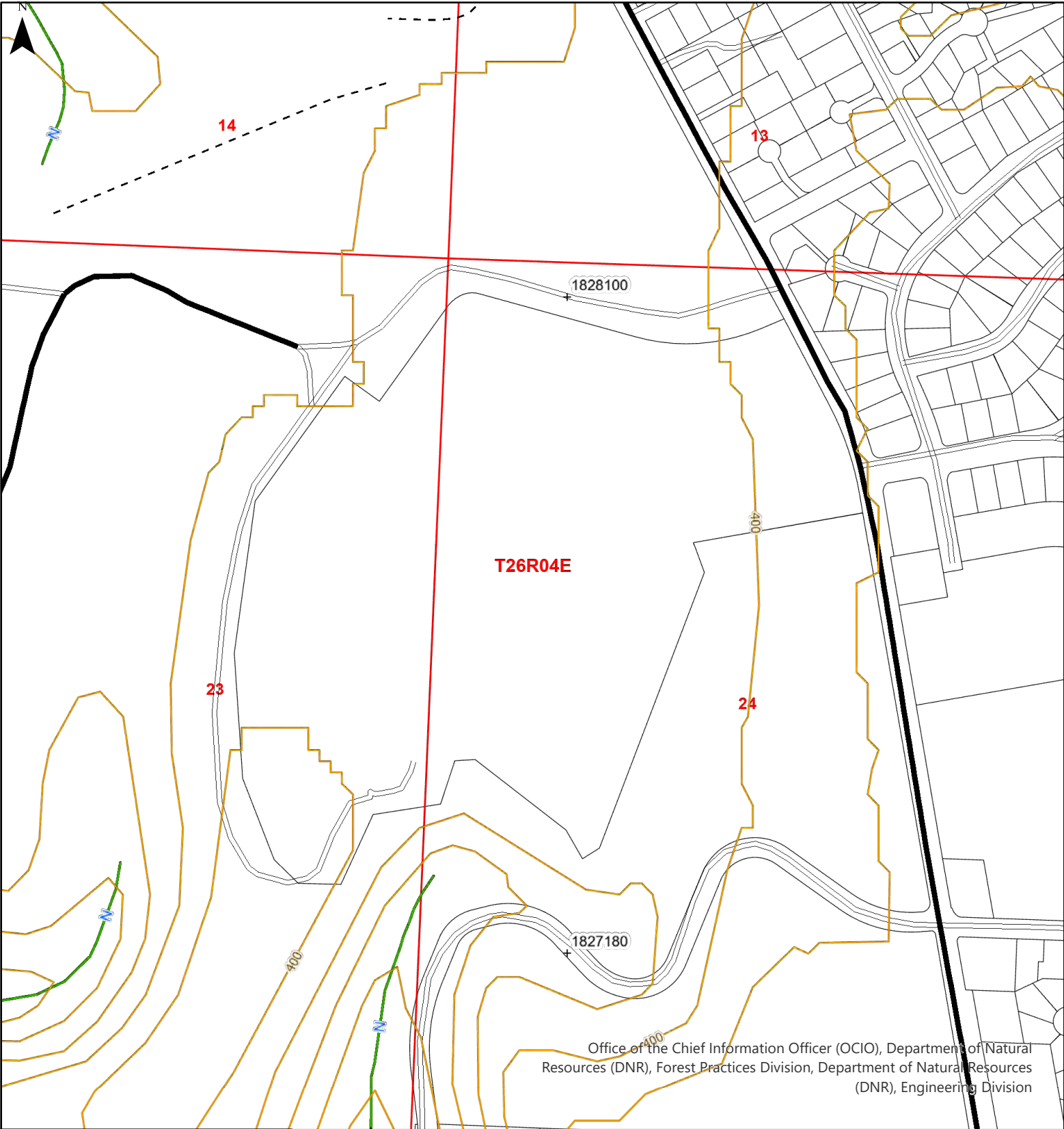


Biodiversity Areas And Corridor	
Priority Area	Terrestrial Habitat
Site Name	KING COUNTY PARKS, NORTHEAST SIDE LK. WASH.
Accuracy	1/4 mile (Quarter Section)
Notes	THREE VERY LARGE PARK COMPLEXES EAST OF LK. WASH., NORTH OF KIRKLAND. ST. EDWARDS, BIG FINN HILL, AND DENNY. TWO OF THESE HAVE OLD SECOND GROWTH STANDS WITH REMNANT OLD GROWTH. EXCELLENT FOREST HABITAT IN AN URBAN AREA.
Source Record	902679
Source Dataset	PHSREGION
Source Name	MULLER, TED
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	<a href="http://wdfw.wa.gov/publications/pub.php?id=00023">http://wdfw.wa.gov/publications/pub.php?id=00023</a>
Geometry Type	Polygons

Little Brown Bat	
Scientific Name	<i>Myotis lucifugus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at <a href="mailto:phsproducts@dfw.wa.gov">phsproducts@dfw.wa.gov</a> for obtaining information about masked sensitive species and habitats.
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	<a href="http://wdfw.wa.gov/publications/pub.php?id=00605">http://wdfw.wa.gov/publications/pub.php?id=00605</a>

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

Forest Practices Activity Map - Application # \_\_\_\_\_



Office of the Chief Information Officer (OCIO), Department of Natural Resources (DNR), Forest Practices Division, Department of Natural Resources (DNR), Engineering Division

Map Symbols

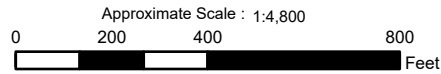
- |                         |                      |
|-------------------------|----------------------|
| ~ ~ ~ Harvest Boundary  | ● Landing            |
| - - - Road Construction | ▽ Waste Area         |
| ~ Stream                | ⬆ Clumped WRTS/GRTS  |
| ⊠ RMZ / WMZ Buffers     | ⬆ Existing Structure |
| ⊗ Rock Pit              |                      |

Additional Information

Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.

Legal Description

S23 T26.0N R04.0E, S14 T26.0N R04.0E, S24 T26.0N R04.0E, S13 T26.0N R04.0E



Date: 3/27/2025 Time: 2:28 PM

# Legend

- ★ Water Type Breaks (FP)
- + Map Registration Tics
- 40 ft. Contours
- - Trail
- +— Railroad
- +— Railroad Grade
- ◆— Abandoned
- ◇— Orphaned
- Type S
- Type F
- Type N, Np, Ns
- U, unknown
- ... X, non-typed per WAC 222-16
- Paved Road
- Unpaved Road/Surface Unknown
- Other Impoundments
- Open Freshwater
- Subject to Inundation
- Glacier / Snowfield
- Wet Area
- Open Saltwater
- Artificial Feature
- Public Land Survey Sections
- County Boundaries
- Public Land Survey Townships
- Tribal Cultural Resource Contacts
- County Tax Parcels

# APPENDIX D

Photodocument





Wetland A



Wetland A



Wetland B



Wetland B



Wetland B and Stream 2.



Stream 3





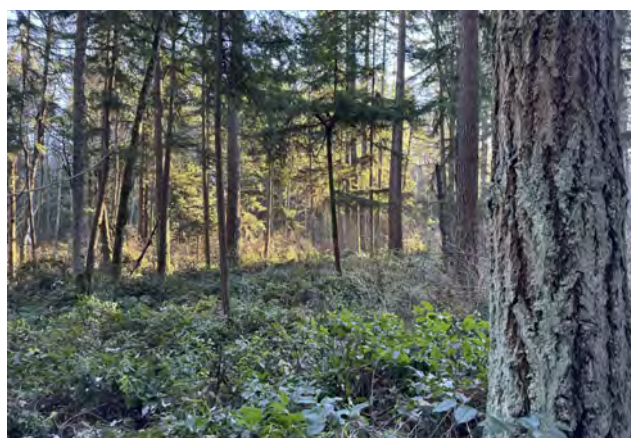
Wetland D



Stream 4 crossing at Holmes Point Drive NE



Forest in northern half of parcel.



Forest in northern half of parcel.



Stormwater facility adjacent to parking lot



Typical pedestrian trail bridge over stream channel

# APPENDIX E

Wetland Rating Forms and Figures

## RATING SUMMARY – Western Washington

Name of wetland (or ID #):   Wetland A   Date of site visit:   2/12/2025  Rated by   JMM   Trained by Ecology? ☒ Yes ☐ No Date of training   22-Oct  HGM Class used for rating   Depressional   Wetland has multiple HGM classes? ☒ Yes ☐ No**NOTE: Form is not complete with out the figures requested** (*figures can be combined*).Source of base aerial photo/map   King County Aerial 2023  **OVERALL WETLAND CATEGORY**   II   (based on functions ☒ or special characteristics ☐ )**1. Category of wetland based on FUNCTIONS**

       Category I - Total score = 23 - 27  
  X   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>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	L	
Landscape Potential	M	H	H	
Value	H	L	H	<b>Total</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>6</b>	<b>7</b>	<b>20</b>

**Score for each  
function based  
on three  
ratings**

(*order of ratings  
is not  
important*)

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

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

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	<b>X</b>



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

### Depressional Wetlands

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

### Riverine Wetlands

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

### Lake Fringe Wetlands

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

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to another figure</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetland in Western Washington

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

- ☒ **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.*

NOTES and FIELD OBSERVATIONS:

**DEPRESSIONAL AND FLATS WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
<b>D 1.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	1
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	
<b>D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</b>		0
Yes = 4    No = 0		
<b>D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</b>		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	3
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
<b>D 1.4. Characteristics of seasonal ponding or inundation:</b>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > ½ total area of wetland	points = 4	2
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
<b>Total for D 1</b>		<b>6</b>
Add the points in the boxes above		

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

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
<b>D 2.1. Does the wetland unit receive stormwater discharges?</b>	Yes = 1    No = 0	1
<b>D 2.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generate pollutants?</b>	Yes = 1    No = 0	1
<b>D 2.3. Are there septic systems within 250 ft of the wetland?</b>	Yes = 1    No = 0	0
<b>D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?</b>		0
Source	Yes = 1    No = 0	
<b>Total for D 2</b>		<b>2</b>
Add the points in the boxes above		

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

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
<b>D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?</b>	Yes = 1    No = 0	1
<b>D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?</b>	Yes = 1    No = 0	1
<b>D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?</b>	Yes = 2    No = 0	0
<b>Total for D 3</b>		<b>2</b>
Add the points in the boxes above		

**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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- |   |            |   |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet)                 | points = 4 | 0 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 |   |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch           | points = 1 |   |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing       | points = 0 |   |

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

- |   |            |   |
|---|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet                       | points = 7 | 3 |
| 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 |   |
| Wetland is flat but has small depressions on the surface that trap water                      | points = 1 |   |
| Marks of ponding less than 0.5 ft (6 in)  | points = 0 |   |

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

- |   |            |   |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 3 |
| The area of the basin is 10 to 100 times the area of the unit                             | points = 3 |   |
| The area of the basin is more than 100 times the area of the unit                         | points = 0 |   |
| <input type="checkbox"/> Entire wetland is in the Flats class                             | points = 5 |   |

Total for D 4

Add the points in the boxes above

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

D 5.0. Does the landscape have the potential to support hydrologic function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0

1

D 5.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

1

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.)?

Yes = 1 No = 0

1

Total for D 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*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- |  |            |   |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):                                  |            | 0 |
| <ul style="list-style-type: none"> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> </ul>  | points = 2 |   |
| <input type="checkbox"/> <ul style="list-style-type: none"> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> </ul>   | 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 |   |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6

Add the points in the boxes above

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

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

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

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

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

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

**H 1.2. Hydroperiods**

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

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

**H 1.3. Richness of plant species**

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

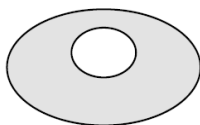
- |                 |                |            |
|-----------------|----------------|------------|
| If you counted: | > 19 species   | points = 2 |
|                 | 5 - 19 species | points = 1 |
|                 | < 5 species    | points = 0 |

**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.*



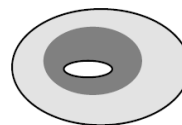
**None = 0 points**



**Low = 1 point**

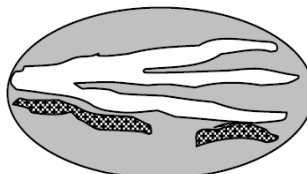
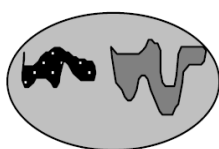


**Moderate = 2 points**



0

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



<b>H 1.5. Special habitat features:</b> Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <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) OR 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 (see H 1.1 for list of strata)</li> </ul>	2
<b>Total for H 1</b>	<b>5</b>

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

<b>H 2.0. Does the landscape have the potential to support the habitat function of the site?</b>	
<b>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</b> <i>Calculate:</i> _____ % undisturbed habitat + ( _____ % moderate & low intensity land uses / 2 ) = _____  If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span> 20 - 33% of 1 km Polygon <span style="float: right;">points = 2</span> 10 - 19% of 1 km Polygon <span style="float: right;">points = 1</span> < 10 % of 1 km Polygon <span style="float: right;">points = 0</span>	3
<b>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</b> <i>Calculate:</i> _____ % undisturbed habitat + ( _____ % moderate & low intensity land uses / 2 ) = _____  Undisturbed habitat > 50% of Polygon <span style="float: right;">points = 3</span> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span> Undisturbed habitat 10 - 50% and > 3 patches <span style="float: right;">points = 1</span> Undisturbed habitat < 10% of 1 km Polygon <span style="float: right;">points = 0</span>	2
<b>H 2.3 Land use intensity in 1 km Polygon: If</b> > 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (-2)</span> ≤ 50% of 1km Polygon is high intensity <span style="float: right;">points = 0</span>	0
<b>Total for H 2</b>	<b>5</b>

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

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>	
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose <i>only the highest score that applies to the wetland being rated</i>.</b> Site meets ANY of the following criteria: <span style="float: right;">points = 2</span> <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> Site has 1 or 2 priority habitats (listed on next page) with in 100m <span style="float: right;">points = 1</span> 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*

## 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. List 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 <div style="text-align: right;"> <input type="checkbox"/> Yes - Go to <b>SC 1.1</b>      <input checked="" type="checkbox"/> No = <b>Not an estuarine wetland</b> </div>	
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? <div style="text-align: right;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No - Go to <b>SC 1.2</b> </div>	
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 ungrazed 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. <div style="text-align: right;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Category II</b> </div>	
<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? <div style="text-align: right;"> <input type="checkbox"/> Yes - Go to <b>SC 2.2</b>      <input checked="" type="checkbox"/> No - Go to <b>SC 2.3</b> </div> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <div style="text-align: right;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not WHCV</b> </div> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> <div style="text-align: right;"> <input type="checkbox"/> Yes - <b>Contact WNHP/WDNR and to SC 2.4</b>      <input checked="" type="checkbox"/> No = <b>Not WHCV</b> </div> 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? <div style="text-align: right;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not WHCV</b> </div>	
<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? <div style="text-align: right;"> <input type="checkbox"/> Yes - Go to <b>SC 3.3</b>      <input checked="" type="checkbox"/> No - Go to <b>SC 3.2</b> </div> 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? <div style="text-align: right;"> <input type="checkbox"/> Yes - Go to <b>SC 3.3</b>      <input checked="" type="checkbox"/> No = <b>Is not a bog</b> </div> 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? <div style="text-align: right;"> <input type="checkbox"/> Yes = <b>Is a Category I bog</b>      <input type="checkbox"/> No - Go to <b>SC 3.4</b> </div> <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? <div style="text-align: right;"> <input type="checkbox"/> Yes = <b>Is a Category I bog</b>      <input type="checkbox"/> No = <b>Is not a bog</b> </div>	

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li><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.</li> <li><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).</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li><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</li> <li><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>)</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes - Go to <b>SC 5.1</b>    <input 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> <ul style="list-style-type: none"> <li><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).</li> <li><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.</li> <li><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</li> <li><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</li> <li><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes - Go to <b>SC 6.1</b>    <input 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></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. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b></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. 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></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>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	NA

## RATING SUMMARY – Western Washington

Name of wetland (or ID #):   Wetland B   Date of site visit:   2/12/2025  Rated by   JMM   Trained by Ecology? ☒ Yes ☐ No Date of training   22-Oct  HGM Class used for rating   Depressional   Wetland has multiple HGM classes? ☒ Yes ☐ No**NOTE: Form is not complete with out the figures requested** (*figures can be combined*).Source of base aerial photo/map   King County Aerial 2023  **OVERALL WETLAND CATEGORY**   II   (based on functions ☒ or special characteristics ☐ )**1. Category of wetland based on FUNCTIONS**

           **Category I** - Total score = 23 - 27  
  X   **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>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	M	
Landscape Potential	M	M	H	
Value	H	L	H	<b>Total</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>5</b>	<b>8</b>	<b>20</b>

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

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

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

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	<b>X</b>

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

### Depressional Wetlands

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

### Riverine Wetlands

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

### Lake Fringe Wetlands

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

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to another figure</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetland in Western Washington

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

- ☒ **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.*

NOTES and FIELD OBSERVATIONS:

**DEPRESSIONAL AND FLATS WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
<b>D 1.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	1
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input checked="" 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	
<b>D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</b>		0
Yes = 4    No = 0		
<b>D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</b>		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	3
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
<b>D 1.4. Characteristics of seasonal ponding or inundation:</b>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > ½ total area of wetland	points = 4	4
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
<b>Total for D 1</b>		<b>8</b>
Add the points in the boxes above		

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

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
<b>D 2.1. Does the wetland unit receive stormwater discharges?</b>	Yes = 1    No = 0	1
<b>D 2.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generate pollutants?</b>	Yes = 1    No = 0	0
<b>D 2.3. Are there septic systems within 250 ft of the wetland?</b>	Yes = 1    No = 0	0
<b>D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?</b>		0
Source	Yes = 1    No = 0	
<b>Total for D 2</b>		<b>1</b>
Add the points in the boxes above		

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

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
<b>D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?</b>	Yes = 1    No = 0	1
<b>D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?</b>	Yes = 1    No = 0	1
<b>D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?</b>	Yes = 2    No = 0	0
<b>Total for D 3</b>		<b>2</b>
Add the points in the boxes above		

**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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- |   |            |   |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet)                 | points = 4 | 0 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 |   |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch           | points = 1 |   |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing       | points = 0 |   |

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

- |   |            |   |
|---|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet                       | points = 7 | 3 |
| 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 |   |
| Wetland is flat but has small depressions on the surface that trap water                      | points = 1 |   |
| Marks of ponding less than 0.5 ft (6 in)  | points = 0 |   |

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

- |   |            |   |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 3 |
| The area of the basin is 10 to 100 times the area of the unit                             | points = 3 |   |
| The area of the basin is more than 100 times the area of the unit                         | points = 0 |   |
| <input type="checkbox"/> Entire wetland is in the Flats class                             | points = 5 |   |

Total for D 4

Add the points in the boxes above

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

D 5.0. Does the landscape have the potential to support hydrologic function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0

1

D 5.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

0

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.)?

Yes = 1 No = 0

1

Total for D 5

Add the points in the boxes above

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- |  |            |   |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):                                  |            | 0 |
| <ul style="list-style-type: none"> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> </ul>  | points = 2 |   |
| <input type="checkbox"/> <ul style="list-style-type: none"> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> </ul>   | 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 |   |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6

Add the points in the boxes above

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



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

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

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

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

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

**H 1.2. Hydroperiods**

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

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

**H 1.3. Richness of plant species**

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

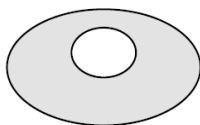
- |                 |                |            |   |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species   | points = 2 | 2 |
|                 | 5 - 19 species | points = 1 |   |
|                 | < 5 species    | points = 0 |   |

**H 1.4. Interspersion of habitats**

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



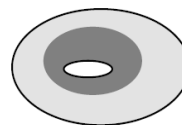
**None = 0 points**



**Low = 1 point**

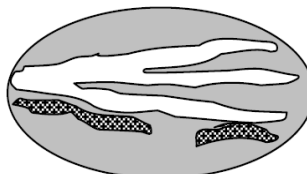
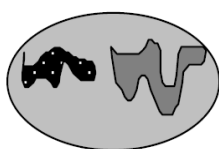


**Moderate = 2 points**



2

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



<b>H 1.5. Special habitat features:</b> Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		4
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present ( <i>cut shrubs or trees that have not yet weathered where wood is exposed</i> ) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated ( <i>structures for egg-laying by amphibians</i> ) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
<b>Total for H 1</b>		
Add the points in the boxes above		
<b>12</b>		

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

<b>H 2.0. Does the landscape have the potential to support the habitat function of the site?</b>		
<b>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</b> <i>Calculate:</i> _____ % undisturbed habitat + ( _____ % moderate & low intensity land uses / 2 ) = _____  If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		3
<b>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</b> <i>Calculate:</i> _____ % undisturbed habitat + ( _____ % moderate & low intensity land uses / 2 ) = _____  Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		
<b>H 2.3 Land use intensity in 1 km Polygon: If</b> > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		0
<b>Total for H 2</b>		<b>5</b>

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

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose <i>only the highest score that applies to the wetland being rated</i>.</b> Site meets ANY of the following criteria: points = 2 <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  Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		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. List 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>	
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 ungrazed 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>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 type="checkbox"/> Yes - Go to <b>SC 2.2</b> <input checked="" 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? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No = <b>Not WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> <input type="checkbox"/> Yes - <b>Contact WNHP/WDNR and to SC 2.4</b> <input checked="" type="checkbox"/> No = <b>Not 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 WHCV</b>	
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No - Go to <b>SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes - Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No = <b>Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No - Go to <b>SC 3.4</b> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No = <b>Is not a bog</b>	

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li><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.</li> <li><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).</li> </ul> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li><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</li> <li><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>)</li> </ul> <p><input type="checkbox"/> Yes - Go to <b>SC 5.1</b>    <input 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> <ul style="list-style-type: none"> <li><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).</li> <li><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.</li> <li><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</li> <li><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</li> <li><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p><input type="checkbox"/> Yes - Go to <b>SC 6.1</b>    <input 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>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	NA

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland C Date of site visit: 2/12/2025Rated by JMM/KN Trained by Ecology? ☒ Yes ☐ No Date of training Oct-22HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map King County Aerial 2023**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	M	M	H	
Value	H	L	H	<b>Total</b>
<b>Score Based on Ratings</b>	7	4	7	<b>18</b>

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

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

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

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	<b>X</b>



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

### Depressional Wetlands

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

### Riverine Wetlands

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

### Lake Fringe Wetlands

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

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to another figure</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetland in Western Washington

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

If 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.

- ☐ **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.*

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

S 1.0. Does the site have the potential to improve water quality?

S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*)

Slope is 1% or less	points = 3	0
Slope is > 1% - 2%	points = 2	
Slope is > 2% - 5%	points = 1	
Slope is greater than 5%	points = 0	

S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions):

Yes = 3    No = 0

0

S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:

Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.*

Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	3
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	

Total for S 1

Add the points in the boxes above

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

S 2.0. Does the landscape have the potential to support the water quality function of the site?

S 2.1. Is &gt; 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?

Yes = 1    No = 0

1

S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?

Other Sources

Yes = 1    No = 0

0

Total for S 2

Add the points in the boxes above

**1****Rating of Landscape Potential** If score is: ☒ 1 - 2 = M    ☐ 0 = L    Record the rating on the first page

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

S 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?

Yes = 1    No = 0

1

S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.*

Yes = 1    No = 0

1

S 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?*

Yes = 2    No = 0

0

Total for S 3

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

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

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i>	0
Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland	points = 1
All other conditions	points = 0

**Rating of Site Potential** If score is: ☐ 1 = M ☒ 0 = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?	Yes = 1 No = 0	1
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**Rating of Landscape Potential** If score is: ☒ 1 = M ☐ 0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:		
The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)	points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for S 6	Add the points in the boxes above	<b>0</b>

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

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

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

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

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

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

**H 1.2. Hydroperiods**

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

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

**H 1.3. Richness of plant species**

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

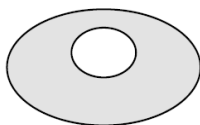
- |                 |                |            |
|-----------------|----------------|------------|
| If you counted: | > 19 species   | points = 2 |
|                 | 5 - 19 species | points = 1 |
|                 | < 5 species    | points = 0 |

**H 1.4. Interspersion of habitats**

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



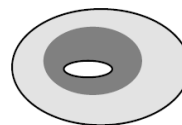
**None = 0 points**



**Low = 1 point**

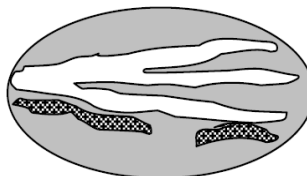
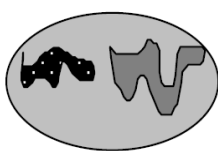


**Moderate = 2 points**



0

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



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

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

<b>H 2.0. Does the landscape have the potential to support the habitat function of the site?</b>		
<b>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</b> <i>Calculate:</i> _____ % undisturbed habitat + ( _____ % moderate & low intensity land uses / 2 ) = _____		3
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		
<b>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</b> <i>Calculate:</i> _____ % undisturbed habitat + ( _____ % moderate & low intensity land uses / 2 ) = _____		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		
<b>H 2.3 Land use intensity in 1 km Polygon: If</b> > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		
<b>Total for H 2</b>		<b>6</b>

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

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose <i>only the highest score that applies to the wetland being rated</i>.</b> Site meets ANY of the following criteria: points = 2		2
<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		
Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		
<b>Total for H 3</b>		
Add the points in the boxes above		

**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. List 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>	
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 ungrazed 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>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 type="checkbox"/> Yes - Go to <b>SC 2.2</b> <input checked="" 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? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No = <b>Not WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> <input type="checkbox"/> Yes - <b>Contact WNHP/WDNR and to SC 2.4</b> <input checked="" type="checkbox"/> No = <b>Not 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 WHCV</b>	
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No - Go to <b>SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes - Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No = <b>Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No - Go to <b>SC 3.4</b> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No = <b>Is not a bog</b>	

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li><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.</li> <li><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).</li> </ul> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li><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</li> <li><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>)</li> </ul> <p><input type="checkbox"/> Yes - Go to <b>SC 5.1</b>    <input 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> <ul style="list-style-type: none"> <li><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).</li> <li><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.</li> <li><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</li> <li><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</li> <li><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p><input type="checkbox"/> Yes - Go to <b>SC 6.1</b>    <input 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></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. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b></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. 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></p> <p><input type="checkbox"/> Yes = <b>Category III</b>    <input type="checkbox"/> No = <b>Category 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>	NA

## RATING SUMMARY – Western Washington

Name of wetland (or ID #):   Wetland D   Date of site visit:   2/12/2025  Rated by   JMM/KN   Trained by Ecology? ☒ Yes ☐ No Date of training   Oct-22  HGM Class used for rating   Slope   Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map   King County Aerial 2023  **OVERALL WETLAND CATEGORY**   III   (based on functions ☒ or special characteristics ☐ )**1. Category of wetland based on FUNCTIONS**

       **Category I** - Total score = 23 - 27

       **Category II** - Total score = 20 - 22

  X   **Category III** - Total score = 16 - 19

       **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	M	L	H	
Value	H	L	H	<b>Total</b>
<b>Score Based on Ratings</b>	7	3	7	<b>17</b>

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

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

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

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	<b>X</b>

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

### Depressional Wetlands

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

### Riverine Wetlands

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

### Lake Fringe Wetlands

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

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to another figure</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetland in Western Washington

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

If 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.

- ☐ **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.*



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

S 1.0. Does the site have the potential to improve water quality?

S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*)

Slope is 1% or less	points = 3	0
Slope is > 1% - 2%	points = 2	
Slope is > 2% - 5%	points = 1	
Slope is greater than 5%	points = 0	

S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions):

Yes = 3    No = 0

0

S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:

Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.*

Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	6
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	

Total for S 1

Add the points in the boxes above

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

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?

S 2.1. Is &gt; 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?

Yes = 1    No = 0

0

S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?

Other Sources    Adjacent to road

Yes = 1    No = 0

1

Total for S 2

Add the points in the boxes above

**1****Rating of Landscape Potential** If score is: ☒ 1 - 2 = M    ☐ 0 = L

Record the rating on the first page

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

S 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?

Yes = 1    No = 0

1

S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.*

Yes = 1    No = 0

1

S 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?*

Yes = 2    No = 0

0

Total for S 3

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

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

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i>	0
Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland	points = 1
All other conditions	points = 0

**Rating of Site Potential** If score is: ☐ 1 = M ☒ 0 = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?	Yes = 1 No = 0	0
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**Rating of Landscape Potential** If score is: ☐ 1 = M ☒ 0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:		
The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)	points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for S 6	Add the points in the boxes above	<b>0</b>

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

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

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

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

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

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

**H 1.2. Hydroperiods**

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

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

**H 1.3. Richness of plant species**

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

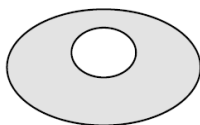
- |                 |                |            |   |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species   | points = 2 | 1 |
|                 | 5 - 19 species | points = 1 |   |
|                 | < 5 species    | points = 0 |   |

**H 1.4. Interspersion of habitats**

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



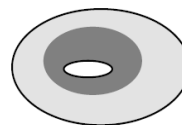
**None = 0 points**



**Low = 1 point**

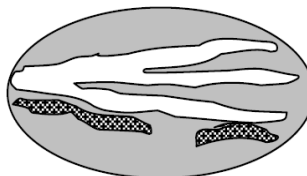
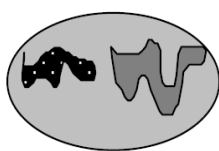


**Moderate = 2 points**



0

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



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

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

<b>H 2.0. Does the landscape have the potential to support the habitat function of the site?</b>		
<b>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</b> <i>Calculate:</i> _____ % undisturbed habitat + ( _____ % moderate & low intensity land uses / 2 ) = _____		3
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		
<b>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</b> <i>Calculate:</i> _____ % undisturbed habitat + ( _____ % moderate & low intensity land uses / 2 ) = _____		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		
<b>H 2.3 Land use intensity in 1 km Polygon: If</b> > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		
<b>Total for H 2</b>		6

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

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose <i>only the highest score that applies to the wetland being rated</i>.</b> Site meets ANY of the following criteria: points = 2		2
<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		
Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		
<b>Total for H 3</b>		
Add the points in the boxes above		

**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. List 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>	
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 ungrazed 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>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 type="checkbox"/> Yes - Go to <b>SC 2.2</b> <input checked="" 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? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No = <b>Not WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> <input type="checkbox"/> Yes - <b>Contact WNHP/WDNR and to SC 2.4</b> <input checked="" type="checkbox"/> No = <b>Not 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 WHCV</b>	
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No - Go to <b>SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes - Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No = <b>Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No - Go to <b>SC 3.4</b> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No = <b>Is not a bog</b>	

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li><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.</li> <li><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).</li> </ul> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li><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</li> <li><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>)</li> </ul> <p><input type="checkbox"/> Yes - Go to <b>SC 5.1</b>    <input 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> <ul style="list-style-type: none"> <li><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).</li> <li><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.</li> <li><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</li> <li><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</li> <li><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p><input type="checkbox"/> Yes - Go to <b>SC 6.1</b>    <input 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>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	NA






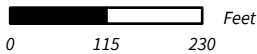
LEGEND

—— 150' Rating Buffer

Cowardin Classification

 PFO

 PSS



SOURCE: KING COUNTY AERIAL 2022, WET.LAND GPS DATA



**WETLAND RATING MAPS**  
 Bastyr University  
 Critical Areas Report - Existing Conditions  
 14500 Juanita Drive Northeast, Kenmore, Washington

#0222  
 MAR 2025

**FIGURE A**





## LEGEND

- 150' Rating Buffer
- Stream Centerline
- Hydroperiod
- Saturated only
- Seasonally flooded



0 115 230 Feet

SOURCE: KING COUNTY AERIAL 2022, WET.LAND GPS DATA



## WETLAND RATING MAPS

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MAR 2025

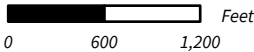
FIGURE B





**LEGEND**

- |   |  |
|---|--|
|  Wetlands       |  Moderate/low intensity |
|  High intensity |  Relatively undisturbed |



**SOURCE:** KING COUNTY AERIAL 2022, WET.LAND GPS DATA



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**#0222**  
**MAR 2025**  
**FIGURE C**



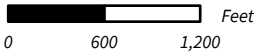


**Lake Washington 303(d) listings within one (1) mile.**  
ID 51592: 2,3,7,8-TCDD (Dioxin)  
ID 52704: Polychlorinated biphenyls (PCBs)  
ID 74461: 4,4'-DDE  
ID 76479: Dieldrin  
ID 77050: Chlordane

LEGEND

-  Wetlands
-  303(d) Listed Waters
-  TMDL

Site not located within a TMDL.



SOURCE: KING COUNTY AERIAL 2022, WET.LAND GPS DATA



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**FIGURE D**