

# WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

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## DEER CREEK

FEBRUARY 2022



**Soundview  
Consultants**

Environmental Assessment  
Planning + Land Use Solutions

# WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

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## DEER CREEK

FEBRUARY 24, 2022

### PROJECT LOCATION

2007 SHAW ROAD  
PUYALLUP, WASHINGTON 98372

### PREPARED FOR

#### RM HOMES

2913 5<sup>TH</sup> AVENUE NORTHEAST, SUITE 201  
PUYALLUP, WASHINGTON 98092

### PREPARED BY

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**Soundview  
Consultants**

Environmental Assessment  
Planning + Land Use Solutions

## Executive Summary

Soundview Consultants LLC (SVC) has been supporting RM Homes (Applicant) with a wetland and fish and wildlife habitat assessment for proposed residential plat development of an approximately 28.2-acre property located at 2007 Shaw Road in the City of Puyallup, Washington. The subject property consists of one parcel situated in the Southeast ¼ of Section 35, Township 20 North, Range 04 East, W.M. (Pierce County Tax Parcel Number 0420354039).

SVC investigated the subject property for the presence of potentially regulated wetlands, waterbodies, or other fish and wildlife habitat in November of 2021 and January of 2022. Using current methodology, the site investigations identified one potentially regulated wetland (Wetland A) and one stream (Stream Z, locally known as Upper Deer Creek) on the northeastern portion of the subject property. Additionally, one potential offsite wetland (Wetland 1) was identified offsite to the west of the subject property across Shaw Road East. Wetland A is classified as a Category III wetland with a low habitat score of 4 points, which is subject to a standard 80-foot buffer based on the proposed high intensity land use per Puyallup Municipal Code (PMC) 21.06.930(2)(d). Offsite Wetland 1 is classified as a Category IV wetland with a low habitat score of 4 points, which is subject to a standard 50-foot buffer that does not project onto the subject property. Stream Z is considered a perennial, non-fish bearing (Type III) stream and is subject to a 50-foot buffer per PMC 21.06.1050(2)(c). An additional 10-foot building setback is required from the outer edge of all critical area buffers per PMC 21.06.840(1). No other potentially regulated wetlands, waterbodies, or other fish and wildlife habitat were observed on or within 300 feet of the subject property.

The summary table below identifies the potential regulatory status of the identified critical areas by local, state, and federal agencies.

Feature Name	Size (Onsite)	Category/ Type <sup>1</sup>	Regulated Under PMC 21.06	Regulated Under RCW 90.48	Regulated Under Section 404 of the Clean Water Act
Wetland A	~2,020 SF	III	Yes	Yes	Likely
Wetland 1	N/A - offsite	IV	Yes	Yes	Not Likely
Stream Z	~200 LF	Type III	Yes	Yes	Likely

Notes:

1. Current Washington State Department of Ecology (WSDOE) wetland rating system (Hruby, 2014) per PMC 21.06.910(3) and DNR Water Typing system per PMC 21.06.1010(3)(a).

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# Chapter 1. Introduction

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Soundview Consultants LLC (SVC) has been supporting RM Homes (Applicant) with a wetland and fish and wildlife habitat assessment for proposed residential development of an approximately 28.2-acre property located at 2007 Shaw Road in the City of Puyallup, Washington. The subject property consists of one parcel situated in the Southeast ¼ of Section 35, Township 20 North, Range 04 East, W.M. (Pierce County Tax Parcel Number 0420354039).

The purpose of this assessment is to identify the presence of potentially regulated wetlands, waterbodies, or other fish and wildlife habitat located on or near the subject property.

This report provides conclusions and recommendations regarding:

- Site description and area of assessment;
- Background research and identification of potentially-regulated critical areas within the vicinity of the proposed project;
- Identification and assessment of potentially-regulated wetlands and other aquatic features;
- Identification and assessment of potentially-regulated fish and wildlife habitat;
- Existing conditions site map detailing identified critical areas, standard buffers, and setbacks; and
- Supplemental information necessary for local regulatory review.

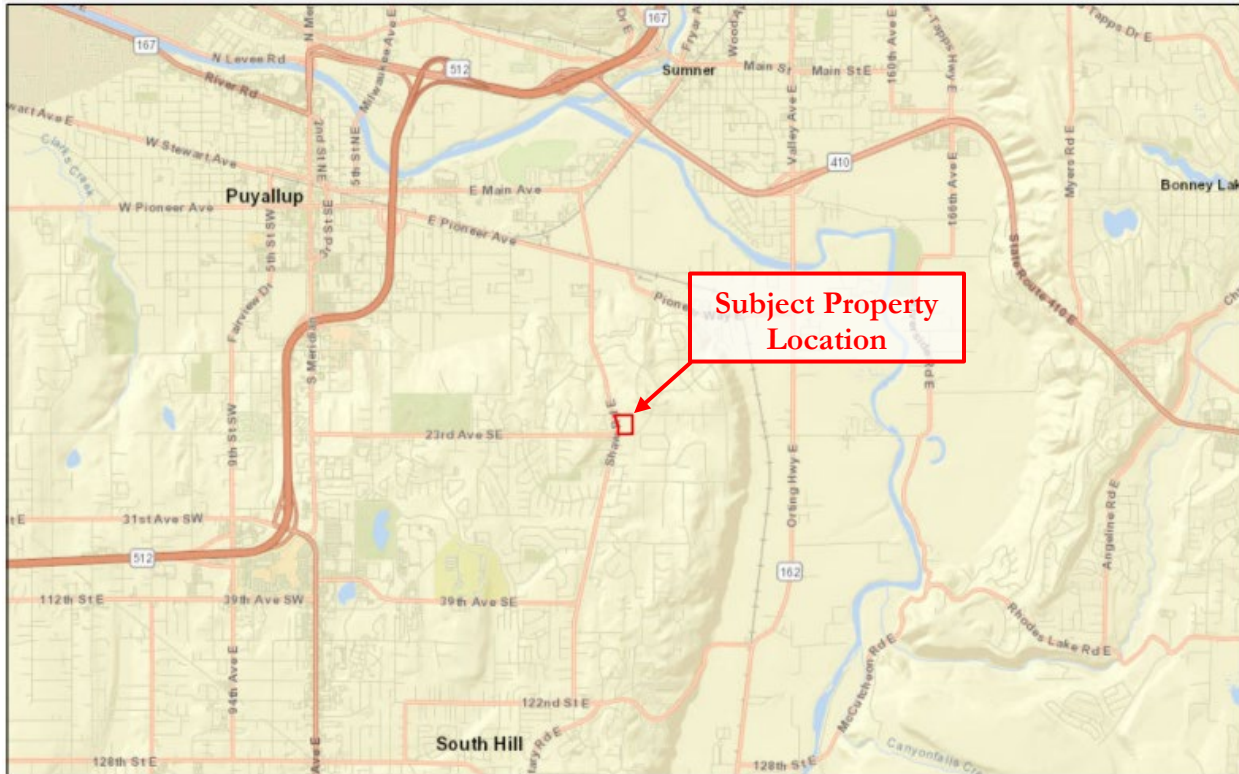
# Chapter 2. Proposed Project Location

## 2.1 Project Location

The subject property consists of an approximately 28.2-acre site located at 2007 Shaw Road in the City of Puyallup, Washington. The subject property consists of one parcel situated in the Southeast ¼ of Section 35, Township 20 North, Range 04 East, W.M. (Pierce County Tax Parcel Number 0420354039).

To access the subject site from Interstate-5 South in the Tacoma area, take exit 127 for Washington-512 East toward Portland and turn left onto Washington-512 East (signs for Puyallup). After 8.5 miles, take the Washington-161 South Exit toward Eatonville and continue onto Washington-161 South/31<sup>st</sup> Avenue Southwest South for 0.1 mile. Use the left two lanes to turn left onto South Meridian and after 0.7 mile turn right onto 23<sup>rd</sup> Avenue Southeast. After 1.9 miles, turn left onto Shaw Road East, where the subject property will be located on the right.

Figure 1. Vicinity Map.



## Chapter 3. Methods

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SVC investigated wetlands, waterbodies, and other potentially-regulated fish and wildlife habitat on and within 300 feet of the subject property in November of 2021 and January of 2022. All determinations were made using observable vegetation, hydrology, and soils in conjunction with data from the U.S. Geological Survey (USGS) topographic map, the Natural Resource Conservation Service (NRCS) Soil Survey, City of Puyallup and Pierce County Geographic Information Systems (GIS) data, U.S. Fish and Wildlife (USFWS) National Wetland Inventory (NWI), Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) and SalmonScape mapping tools, Washington Department of Natural Resources (DNR) Water Typing Map, and various orthophotographic resources. Appendix A contains further details for the methods and tools used to prepare this report.

Wetlands, waterbodies, and select fish and wildlife habitat and species are regulated features per Puyallup Municipal Code (PMC) Title 21.06– Critical Areas, and subject to restricted uses/activities under the same title. Wetland boundaries were determined using the routine approach outlined in the U.S. Army Corps of Engineers’ *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and modified according to the guidelines established in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0* (USACE, 2010) and *Field Indicators of Hydric Soils in the United States* (NRCS, 2018). Qualified wetland scientists marked the boundary of the wetland onsite with orange surveyor’s flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundary. Pink surveyor’s flagging was labeled numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected (DP-1 to DP-4). Additional tests pits were excavated at regular intervals inside and outside of the wetland boundary to further confirm the delineation. Offsite critical areas were not flagged but rather estimated based on visual observations, aerial imagery, and topography, and features are labeled numerically beginning with 1. Please refer to Appendix D for site photographs.

Wetlands were classified using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979) classification systems. Following classification and assessment, wetlands were rated and categorized using the *Washington State Wetlands Rating System for Western Washington—Washington Department of Ecology, 2014, Publication No. 04-06-029* (Hruby, 2014) and guidelines established in PMC 21.06.910(3).

The ordinary high water (OHW) mark determination were made using the WSDOE’s method detailed in *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et al, 2016) and the definitions established in the Shoreline Management Act under the Revised Code of Washington (RCW) 90.58.030(2)(b) and Washington Administrative Code (WAC) 173-22-030(11). Streams were classified using the Washington Department of Natural Resources Water Typing System as outlined in WAC 222-16-030 per PMC 21.06.1010(3)(a).

The fish and wildlife habitat assessment was conducted during the same site visits by qualified fish and wildlife biologists. The experienced biologists made visual observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features or signs of fish and wildlife activity.



# Chapter 4. Existing Conditions

## 4.1 Landscape Setting

The subject property is located in a residential setting within the City of Puyallup’s urban growth area (Figure 2). The subject property is currently developed with a single-family residence and associated infrastructure in the northwest portion of the subject property and a gravel parking area on the southwest corner; the remainder of the site is otherwise undeveloped forest with an unmaintained field located in the central portion of the subject property. The subject property abuts undeveloped forest to the north and east, Shaw Road East to the west, and Crystal Ridge Drive Southeast to the south. Topography onsite slopes moderately downward from the southwest to the to the northeast, with elevations ranging from approximately 280 feet above mean sea level (amsl) to approximately 360 amsl. A Pierce County contours map is provided in Appendix B1. The subject property is located within Water Resource Inventory Area (WRIA) 10 – Puyallup-White.

**Figure 2. Aerial Photograph of Subject Property.**



## 4.2 Soils

The NRCS Soil Survey of Pierce County, Washington, identifies two soil series present on the subject property: Indianola loamy sand, 5 to 15 percent slopes and Kitsap silt loam, 8 to 15 percent slopes. A soil survey map is provided in Appendix B2.

### **Indianola loamy sand, 5 to 15 percent slopes (18C)**

According to the survey, Indianola loamy sand, 6 to 15 percent slopes, is a somewhat excessively drained soil formed in sandy glacial outwash on broad uplands. In a typical profile, the surface layer is dark brown loamy sand to a depth of 7 inches. The underlying material to a depth of 60 inches is dark yellowish brown, brown, or olive brown sand. Some areas of this soil series are known to rest on unstable lake sediments, and be adjacent to areas of a soil that is deep, loose, and gravelly. Roots extend to a depth of more than 60 inches. Indianola loamy sand, 6 to 15 percent slopes, is listed as non-hydric, but as much as 2 percent of the mapped soil unit may contain hydric inclusions of Norma soils associated with depressions (NRCS, n.d).

### **Kitsap silt loam, 8 to 15 percent slopes (20C)**

According to the survey, Kitsap silt loam, 8 to 15 percent slopes, is moderately well drained soil derived from glaciolacustrine deposits on remnant terraces along Puget Sound and major drainageways. In a typical profile, the surface layer is very dark grayish brown and dark brown ashy silt loam to a depth of 10 inches. The upper layer of the subsoil is brown silty clay loam to a depth of 7 inches. The lower layer is mottled, grayish brown silty clay loam to approximately 15 inches thick. The substratum to a depth of 60 inches is stratified, mottled, light olive brown silt loam and silty clay loam. Kitsap silt loam, 8 to 15 percent slopes is listed as non-hydric, but as much as 2 percent of the mapped soil unit may contain hydric inclusions Bellingham soils associated with depressions (NRCS, n.d).

## **4.3 Vegetation**

General upland forested vegetation in the southern portion of the subject property consists of a canopy dominated by Douglas fir (*Pseudotsuga menziesii*) and western red cedar (*Thuja plicata*) with an understory of vine maple (*Acer circinatum*), salmonberry (*Rubus spectabilis*), hazelnut (*Corylus cornuta*), non-native invasive Himalayan blackberry (*Rubus armeniacus*), and swordfern (*Polystichum munitum*). The upland forest canopy transitions into a more mixed evergreen/deciduous canopy on the northern portion of the subject property and is dominated by western red cedar, western hemlock (*Tsuga heterophylla*), black cottonwood (*Populus balsamifera*), and bigleaf maple (*Acer macrophyllum*). The unmaintained field on the central portion of the subject property is dominated by non-native invasive scotch broom (*Cytisus scoparius*), bracken fern (*Pteridium aquilinum*), orchards grass (*Dactylus glomerata*), colonial bentgrass (*Agrostis capillaris*), and trailing blackberry (*Rubus ursinus*).

## **4.4 Critical Area Inventories**

The City of Puyallup Stream and Wetland Inventory (Appendix B3), Pierce County Stream and Wetland Inventory (Appendix B4), USFWS NWI map (Appendix B5), and WDFW PHS map (Appendix B6) do not identify any potential wetlands on the subject property but do identify a potential stream feature (Upper Deer Creek) on the northeast portion of the subject property. Additionally, the Puyallup Stream and Wetland Inventory identifies a potential offsite wetland feature to the west across Shaw Road East within 300 feet of the site. The WDFW SalmonScape map (Appendix B7) does not identify any salmonids or fish presence on or near the subject property. The DNR stream typing map (Appendix B8) classifies Upper Deer Creek as a non-fish bearing (Type N) stream. No other potential wetlands, waterbodies, or fish and wildlife habitat areas are documented on or within 300 feet of the subject property.

## 4.5 Precipitation

Precipitation data was obtained from the National Oceanic and Atmospheric Administration (NOAA) station at Seattle-Tacoma (SeaTac) International Airport in order to obtain percent of normal precipitation for the general Puget Sound region during and preceding the investigations. A summary of data collected is provided in Table 1.

**Table 1. Precipitation Summary<sup>1</sup>**

Date	Day of	Day Before	1 Week Prior	2 Weeks Prior	30 Days Prior (Observed/Normal)	Year to Date (Observed/Normal) <sup>2</sup>	Percent of Normal <sup>3</sup>
11/16/2021	0.00	0.20	4.67	6.95	11.68/5.60	12.85/7.22	209/178
1/5/2022	0.33	0.22	1.96	3.30	5.33/5.73	21.93/16.90	93/130

Notes:

1. Precipitation levels provided in inches. Data obtained from NOAA (<http://w2.weather.gov/climate/xmacis.php?wfo=sew>) for SeaTac International Airport. Precipitation data is missing for the following dates and may skew calculations for percent of normal: 12/18, 12/28, and 12/30.
2. Year-to-date precipitation is for the 2021/2022 water year from October 1 to the onsite date(s).
3. Percent of normal is shown for the last 30 days and water year to date.

Precipitation levels during the November 2021 site investigation were elevated above the statistical normal range for both the prior 30 days (209 percent of normal) and the 2021/2022 water year (178 percent of normal). While heavy rainfall is common during the wet season, the abnormally high rainfall for both the 30 days prior and the water year suggest hydrologic conditions onsite may have been exaggerated and areas that are not typically wet may have been saturated or inundated during the November 2021 site investigation. Precipitation levels during the January 2022 site investigation were within the statistical normal range for both the prior 30 days (93 percent of normal) and the 2021/2022 water year (130 percent of normal). This precipitation data suggests that hydrological conditions were relatively normal during the January 2022 site investigation. Such conditions were considered in making professional wetland determinations.

# Chapter 5. Results

SVC’s site investigations in November of 2021 and January of 2022 identified one potentially regulated wetland (Wetland A) and one stream (Stream Z, locally known as Upper Deer Creek) on the northeastern portion of the subject property. Additionally, one potential offsite wetland (Wetland 1) was identified offsite to the west of the subject property across Shaw Road East. No other potentially regulated wetlands, waterbodies, or other fish and wildlife habitat were observed on or within 300 feet of the subject property.

## 5.1 Wetlands

### 5.1.1 Overview

The identified wetlands contained a predominance of hydrophytic vegetation, indicators of hydric soils (assumed for offsite wetland), and wetland hydrology according to current wetland delineation methodology. Data forms are provided in Appendix E; wetland rating forms are provided in Appendix F; and wetland rating maps are provided in Appendix G. Table 2 summarizes the wetlands identified during the site investigations.

**Table 2. Wetland Summary Table**

Wetland	Predominant Wetland Classification / Rating				Size Onsite (SF)	Buffer Width <sup>5</sup> (feet)
	Cowardin <sup>1</sup>	HGM <sup>2</sup>	WSDOE <sup>3</sup>	City of Puyallup <sup>4</sup>		
<b>A</b>	PSSB	Depressional	III	III	2,020	80
<b>1</b>	PFOB	Slope	IV	IV	N/A	50

**Notes:**

1. Cowardin et al. (1979); Federal Geographic Data Committee (2013); class based on vegetation: PFO = Palustrine Forested, PSS = Palustrine Scrub-Shrub. Modifiers for Water Regime or Special Situations: B = Seasonally Saturated.
2. Brinson, M. M. (1993).
3. Current WSDOE rating (Hruby, 2014).
4. PMC 21.06.910(3) wetland rating designation.
5. PMC 21.06.930(2) wetland buffer standards based on high intensity land use.

### Wetland A


Wetland A is approximately 2,020 square feet (0.05 acre) in size onsite and is located on the northeastern portion of the subject property, extending further offsite to the north. Stream Z flows through the wetland; however, no evidence of overbank flooding was observed. Hydrology for Wetland A is provided primarily by a seasonally high groundwater table, direct precipitation, and surface sheet flow from adjacent uplands. Wetland vegetation is dominated by salmonberry (*Rubus spectabilis*), vine maple, youth on age (*Tolmiea menziesii*) and creeping buttercup (*Ranunculus repens*). Wetland A is a Palustrine Scrub-Shrub, Seasonally Saturated (PSSB) wetland. Per PMC 21.06.930(2)(c)(d), Wetland A is classified as a Category III depressional wetland with a habitat score of 4 points. Table 3 provides a detailed summary of Wetland A.

## **Wetland 1**

Wetland 1 is located approximately 90 feet offsite to the west across Shaw Road East. Hydrology for Wetland 1 is provided primarily by a seasonally high groundwater table, direct precipitation, and surface sheet flow from adjacent uplands. Wetland vegetation is dominated by a canopy of Western red cedar, black cottonwood, and red alder (*Alnus rubra*) with an understory dominated by salmonberry and non-native invasive Himalayan blackberry. Wetland A is a Palustrine Forested, Seasonally Saturated (PFOB) wetland. Per PMC 21.06.930(2)(e), Wetland A is classified as a Category IV slope wetland with a habitat score of 4 points. As Wetland 1 is located entirely offsite, no detailed summary table is provided.




Table 3. Wetland A Summary

<b>WETLAND A – INFORMATION SUMMARY</b>		
<b>Location:</b>	Located in the northern portion of the subject property.	
	<b>Local Jurisdiction</b>	City of Puyallup
	<b>WRIA</b>	10 – Puyallup - White
	<b>WSDOE 2014 Rating</b>	III
	<b>City of Puyallup rating</b>	III
	<b>Standard Buffer Width</b>	80 feet
	<b>Wetland Size</b>	2,020 square feet
	<b>Cowardin Classification</b>	PSSAB
	<b>HGM Classification</b>	Depressional
	<b>Wetland Data Sheet</b>	DP-2W
	<b>Upland Data Sheet</b>	DP-3U
	<b>Boundary Flag color</b>	Orange
<b>Dominant Vegetation</b>	Wetland vegetation is dominated salmonberry, vine maple, youth on age, and buttercup.	
<b>Soils</b>	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.	
<b>Hydrology</b>	Hydrology for Wetland A is provided primarily by a seasonally high groundwater table, direct precipitation, and surface sheet flow from surrounding uplands. No evidence of overbank flooding from Stream Z was observed.	
<b>Rationale for Delineation</b>	Wetland boundaries were determined by a topographic drop, and the combined presence of hydric soils and hydrophytic vegetation.	
<b>Rationale for Local Rating</b>	Wetland rating based on the current WSDOE wetland rating system for Western Washington (Hruby, 2014) per PMC 21.06.910(3).	
<b>Wetland Functions Summary</b>		
<b>Water Quality</b>	Wetland A has moderate potential to improve water quality due to the presence of persistent, ungrazed plants in 95 percent of the unit., the presence of septic systems within 250 feet of the wetland, and the presence of a TMDL in the watershed. However, water quality functions are limited due to the permanently flowing outlet, lack of seasonal ponding, and the wetland does not discharge into impaired waters. Wetland A’s score for Water Quality Functions is moderate (7).	
<b>Hydrologic</b>	Wetland A has low potential to provide hydrologic functions due to its small contribution of storage capacity within the contributing basin, lack of storage during wet periods, and lack of stormwater discharges or sources of runoff. However, the wetland provides some functions due to at least 25 percent intensive land uses within the contributing basin and presence of flooding downgradient. Wetland A’s score for Hydrologic Functions is moderate (5).	
<b>Habitat</b>	Wetland A provides limited habitat functions due to the presence of one Cowardin class and hydroperiod, lack of habitat interspersion, and large portions of accessible habitat due to surrounding high intensity land use. Wetland A’s score for Habitat Functions is low (4).	
<b>Buffer Condition</b>	The onsite buffer is relatively intact with native vegetation but contains small amounts of non-native invasive Himalayan blackberry and English holly.	

## 5.2 Stream Z (Upper Deer Creek)

Stream Z was identified on the northeastern corner of the subject property, flowing southwest for approximately 200 linear feet onsite and through Wetland A. The onsite channel of Stream Z was approximately under 2 feet wide on average with areas of pooling approximately 5 feet wide on average. Substrate within the stream consists of an unconsolidated silt bottom with patches of some sand and gravel. No fish were observed during the site investigation. Based on the amount of surface flow and WDFW does not identify any fish or salmonid presence on or in the vicinity of the subject property, and DNR identifies the stream as a non-fish (Type N) water. In addition, five total fish passage barriers (i.e. culverts and one dam) are documented along Stream Z downgradient of the site (site ids 920402, 920401, 920188, 920406, 105 R041222A), thus preventing fish passage to the segment of Stream Z onsite. Due to the lack of documented fish use or direct observations and documented fish passage barriers downgradient, Stream Z is classified as a Type III stream per PMC 21.06.1010(3). Table 4 provides a detailed summary of Stream Z.

**Table 4. Stream Z Summary**

<b>STREAM Z – INFORMATION SUMMARY</b>		
	<b>Feature Name</b>	Stream Z
	<b>WRIA</b>	10 – Puyallup - White
	<b>Local Jurisdiction</b>	City of Puyallup
	<b>DNR Stream Type</b>	Type N
	<b>Snohomish County Stream Rating</b>	Type III
	<b>Standard Buffer Width</b>	50 feet
	<b>Documented Fish Use</b>	None
<b>Location of Feature</b>	Stream Z is located on the northeast corner of the subject property.	
<b>Connectivity (where water flows from/to)</b>	Based on local mapping inventories, Stream Z appears to begin approximately 0.5 linear mile upgradient of the site, to the south of 27 <sup>th</sup> Avenue Southeast. The stream flows in a southwesterly direction on the northeast portion of the site for approximately 200 linear feet and through Wetland A. The stream continues offsite to the north through several documented fish passage barriers before discharging into the Puyallup River 1.95 miles northwest of the site.	
<b>Riparian/Buffer Condition</b>	The onsite buffer is relatively intact with native vegetation but contains small amounts of non-native invasive Himalayan blackberry and English holly.	

## Chapter 6. Regulatory Considerations

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SVC's site investigations in November of 2021 and January of 2022 identified one potentially regulated wetland (Wetland A) and one stream (Stream Z, locally known as Upper Deer Creek) on the northeastern portion of the subject property. Additionally, one potential offsite wetland (Wetland 1) was identified offsite to the west of the subject property across Shaw Road East. No other potentially regulated wetlands, waterbodies, or other fish and wildlife habitat were observed on or within 300 feet of the subject property.

### 6.1 Local Considerations

#### 6.1.1 Standard Buffer Requirements

PMC 19.37.090.C has adopted the current wetland rating system used by WSDOE (Hruby, 2014). Category III wetlands generally provide a moderate level of function, have usually been disturbed in some way, and are often less diverse and/or more isolated in the landscape than Category II wetlands. Category III wetlands score between 16 and 19 points on the *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014). Category IV wetlands generally provide low levels of function; they are often heavily disturbed, smaller, and/or more isolated in the landscape than Category I, II, or III wetlands. Category IV wetlands provide low levels of functions and score less than 16 points.

Wetland A is classified as a Category III wetland with a low habitat score of 4 points, which is subject to a standard 80-foot buffer based on the proposed high intensity land use per PMC 21.06.930(2)(d). Offsite Wetland 1 is classified as a Category IV wetland with a low habitat score of 4 points, which is subject to a standard 50-foot buffer that does not project onsite, especially given the functional interruption from Shaw Road East. Stream Z is considered a perennial, non-fish bearing (Type III) stream and is subject to a 50-foot buffer per PMC 21.06.1050(2)(c). An additional 10-foot building setback is required from the outer edge of all critical area buffers per PMC 21.06.840(1).

### 6.2 State and Federal Considerations

In a December 2, 2008 memorandum from the Environmental Protection Agency (EPA) and USACE, joint guidance is provided that describes waters that are to be regulated under Section 404 of the Clean Water Act (CWA) (USACE, 2008). This memorandum was amended on February 2, 2012 where the EPA and USACE issued a final guidance letter on waters protected by the CWA.

The 2012 guidance describes the following waters where jurisdiction would be asserted: 1) traditional navigable waters, 2) interstate waters, 3) wetlands adjacent to traditional navigable waters, 4) non-navigable tributaries of traditional navigable waters that are relatively permanent meaning they contain water at least seasonally (e.g. typically three months and does not include ephemeral waters), and 5) wetlands that directly abut permanent waters. The regulated waters are those associated with naturally occurring waters and water courses and not artificial waters (i.e. stormwater pond outfalls).

The 2012 memorandum further goes on to describe waters where jurisdiction would likely require further analysis: 1) Tributaries to traditional navigable waters or interstate waters, 2) Wetlands adjacent to jurisdictional tributaries to traditional navigable waters or interstate waters, and 3) Waters that fall under the "other waters" category of the regulations.

Stream Z is likely a tributary to the Puyallup River, a traditionally navigable water; as such, Stream Z is likely regulated by USACE under Section 404 of the CWA. Wetland A is likely a jurisdictional water due to its direct hydrological connection to Stream Z. Offsite Wetland 1 appears isolated in upland areas with no surface water connections and/or potential significant nexus to jurisdictional waters; as such, Wetland 1 is likely not regulated by the USACE. However, the identified wetlands and stream are considered natural waters that are regulated by the WSDOE through the Revised Code of Washington (RCW) 90.48.

## Chapter 7. Closure

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The findings and conclusions documented in this report have been prepared for specific application to this project. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. Our work was also performed in accordance with the terms and conditions set forth in our proposal. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this project may need to be revised wholly or in part.

Wetland and OHW status and boundaries identified by SVC are based on conditions present at the time of the site visit and considered preliminary until the flagged wetland and OHW boundaries are validated by the jurisdictional agencies. Validation of the wetland and OHW boundaries and jurisdictional status of such features by the regulatory agencies provides a certification, usually written, that the wetland determination and boundaries verified are the units that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulatory agencies can provide this certification.

As wetlands and waterbodies are dynamic communities affected by both natural and human activities, changes in boundaries may be expected; therefore, delineations cannot remain valid for an indefinite period of time. Regulatory agencies typically recognize the validity of wetland and OHW delineations for a period of 5 years after completion of an assessment report. Development activities on a site five years after the completion of this assessment report may require reassessment of the wetland and OHW boundaries. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.



## Chapter 8. References

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# Appendix A — Methods and Tools

**Table A1. Methods and tools used to prepare the report.**

Parameter	Method or Tool	Website	Reference
Wetland Delineation	USACE 1987 Wetland Delineation Manual	<a href="http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf">http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf</a>	<b>Environmental Laboratory.</b> 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Western Mountains, Valleys, and Coast Region Regional Supplement	<a href="http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_final_supp.pdf">http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_final_supp.pdf</a>	<b>U.S. Army Corps of Engineers.</b> 2010. <i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)</i> , ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
Wetland Classification	USFWS / Cowardin Classification System	<a href="http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf">http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf</a>	<b>Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe.</b> 1979. Classification of wetlands and deepwater habitats of the United States. Government Printing Office, Washington, D.C.
		<a href="https://www.fgdc.gov/standards/projects/wetlands/nvcs-2013">https://www.fgdc.gov/standards/projects/wetlands/nvcs-2013</a>	<b>Federal Geographic Data Committee.</b> 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
	Hydrogeomorphic Classification (HGM) System	<a href="http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde4.pdf">http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde4.pdf</a>	<b>Brinson, M. M.</b> (1993). “A hydrogeomorphic classification for wetlands,” Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
Wetland Rating	Washington State Wetland Rating System	<a href="http://www.ecy.wa.gov/biblio/0406025.html">http://www.ecy.wa.gov/biblio/0406025.html</a>	<b>Hruby, T.</b> 2014. Washington State wetland rating system for western Washington –Revised. Publication # 04-06-025.
Wetland Indicator Status	2016 National Wetland Plant List	<a href="https://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-2016-Wetland-Ratings.pdf">https://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-2016-Wetland-Ratings.pdf</a>	<b>U.S. Army Corps of Engineers.</b> 2018. National Wetland Plant List, version 3.4.
Stream Classification	Department of Natural Resources (DNR) Water Typing System	<a href="http://www.stage.dnr.wa.gov/forestrypractices/watertyping/">http://www.stage.dnr.wa.gov/forestrypractices/watertyping/</a>	Washington Administrative Code (WAC) 222-16-030. DNR Water typing system.
Stream Delineation	Determining the OHW	<a href="https://fortress.wa.gov/ecy/publications/documents/1606029.pdf">https://fortress.wa.gov/ecy/publications/documents/1606029.pdf</a>	<b>Anderson, P.S., S. Meyer, P. Olson, and E. Stockdale.</b> 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Publication No. 16-06-029. Final Review Draft. Shorelands and Environmental Assistance Program, Washington State Department of Ecology. Olympia, Washington.
Plant Names and Identification	USDA Plant Database	<a href="http://plants.usda.gov/">http://plants.usda.gov/</a>	Website.
	Flora of the Pacific Northwest	<a href="http://www.pnwherbaria.org/florapnw.php">http://www.pnwherbaria.org/florapnw.php</a>	<b>Hitchcock, C.L. &amp; A. Cronquist,</b> Ed. by D. Giblin, B. Ledger, P. Zika, and R. Olmstead. 2018. Flora of the Pacific Northwest, 2nd Edition. U.W. Press and Burke Museum. Seattle, Washington.



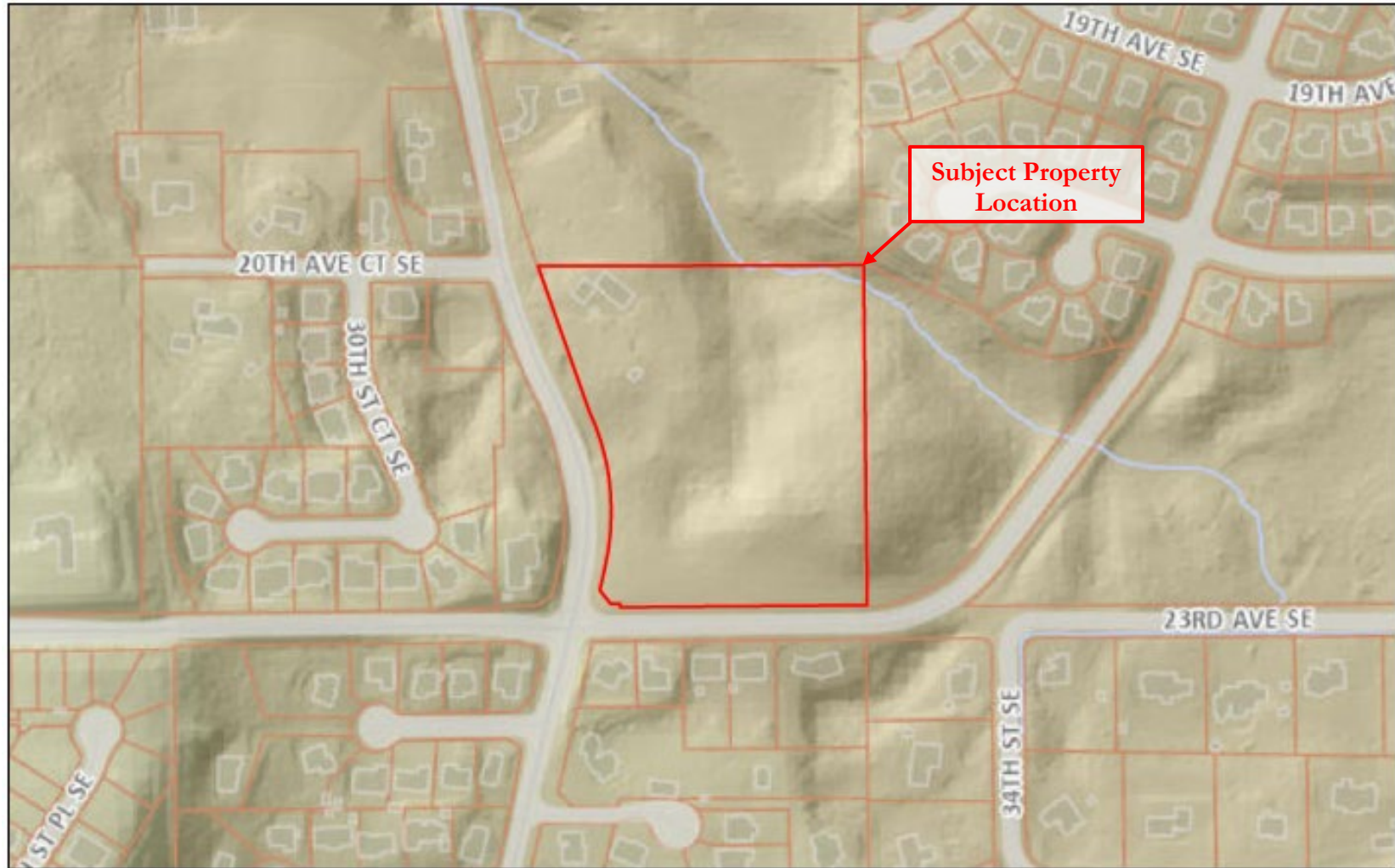
Parameter	Method or Tool	Website	Reference
Soils Data	NRCS Soil Survey	<a href="http://websoilsurvey.nrcs.usda.gov/app/">http://websoilsurvey.nrcs.usda.gov/app/</a>	Website GIS data based upon:  <b>Debose A., and Klungland, M.W.</b> 1983. Soil Survey of Snohomish County Area, Washington. United States Department of Agriculture, Soil Conservation Service in cooperation with Washington State Department of Natural Resources, and Washington State University, Agriculture Research Center. Washington, D.C.
	Soil Data Access Hydric Soils List	<a href="https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html">https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html</a>	<b>Natural Resources Conservation Service.</b> N.d. Soil Data Access Hydric Soils List (Soil Data Access Live).
	Soil Color Charts		<b>Munsell®</b> Color. 2000. Munsell® Soil Color Charts. New Windsor, New York.
	Field Indicators of Hydric Soils	<a href="https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf">https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf</a>	<b>NRCS.</b> 2018. <i>Field Indicators of Hydric Soils in the United States, Version 8.2.</i> L.M. Vasialas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
Threatened and Endangered Species	Washington Natural Heritage Program	<a href="http://data-wadnr.opendata.arcgis.com/datasets/wnhp-current-element-occurrences">http://data-wadnr.opendata.arcgis.com/datasets/wnhp-current-element-occurrences</a>	<b>Washington Natural Heritage Program.</b> Endangered, threatened, and sensitive plants of Washington. Washington State Department of Natural Resources, Washington Natural Heritage Program, Olympia, WA
	Washington Priority Habitats and Species	<a href="http://wdfw.wa.gov/hab/phspage.htm">http://wdfw.wa.gov/hab/phspage.htm</a>	<b>Priority Habitats and Species (PHS) Program</b> Map of priority habitats and species in project vicinity. Washington Department of Fish and Wildlife.
Species of Local Importance	WDFW GIS Data	<a href="http://wdfw.wa.gov/mapping/salmonscape/">http://wdfw.wa.gov/mapping/salmonscape/</a>	Website
Report Preparation	Puyallup Municipal Code	<a href="http://www.codepublishing.com/WA/Puyallup/">http://www.codepublishing.com/WA/Puyallup/</a>	PMC Chapter 21.06 – Critical Areas

## **Appendix B — Background Information**


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This appendix includes a Pierce County Contours Map (B1); NRCS Soil Survey Map (B2); City of Puyallup Stream and Wetland Inventory (B3); Pierce County Stream and Wetland Inventory (B4); USFWS NWI Map (B5); WDFW PHS Map (B6); WDFW SalmonScape Map (B7); and DNR Stream Typing Map (B8).

# Appendix B1 — Pierce County Contours Map



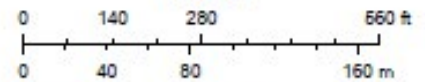
11/8/2021, 8:58:33 AM

 Pierce - Parcels\_Query result

Pierce County

FiveByFive

1:4,514



County of King, Bureau of Land Management, Esri Canada, Esri, HERE,



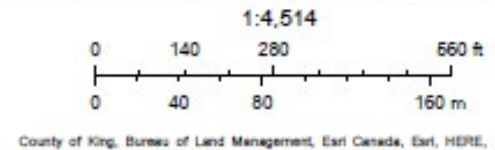
## Appendix B2 — NRCS Soil Survey Map



11/8/2021, 9:10:37 AM

- Pierce - Parcels\_Query result
- USA Soils Map Units

18C: Indianola loamy sand, 5 to 15 percent slopes  
 20C: Kitsap silt loam, 8 to 15 percent slopes

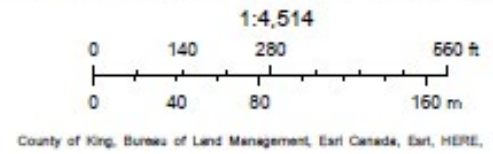
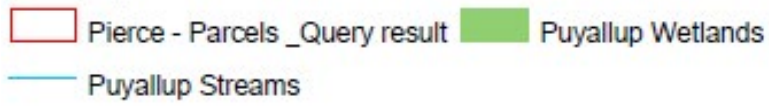




# Appendix B3 — City of Puyallup Stream and Wetland Inventory



11/8/2021, 9:05:30 AM







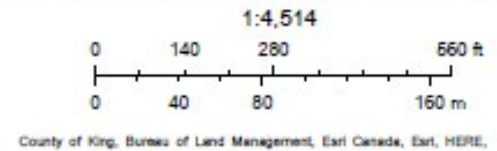
# Appendix B4 — Pierce County Stream and Wetland Inventory



11/8/2021, 9:03:15 AM

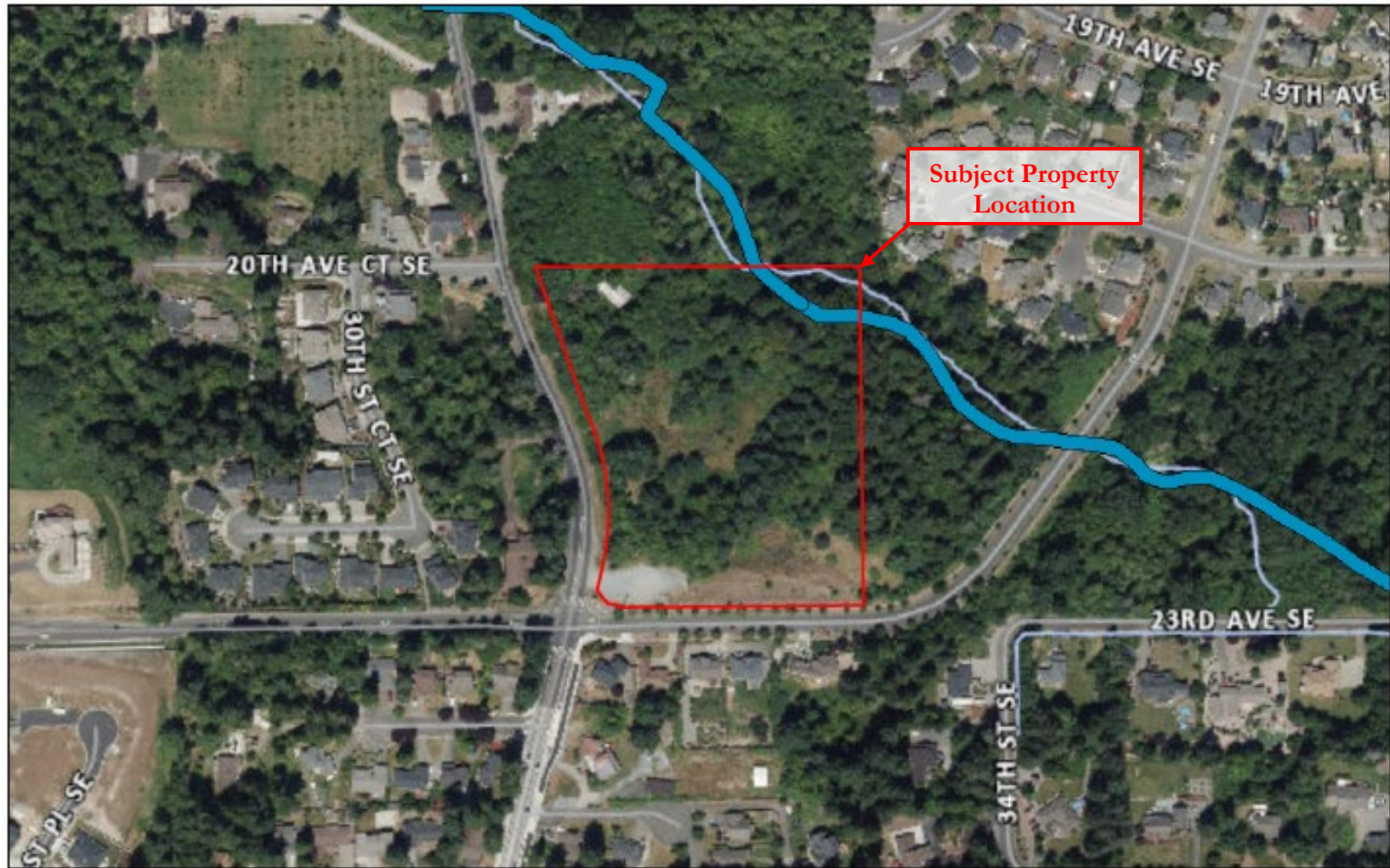
 Pierce - Parcels \_Query result

 Pierce - Streams

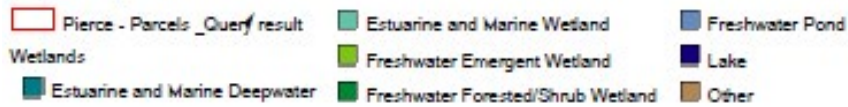




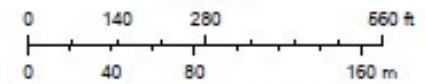
## Appendix B5 — USFWS NWI Map



11/8/2021, 9:06:21 AM



1:4,514



U.S. Fish and Wildlife Service, National Standards and Support Team.

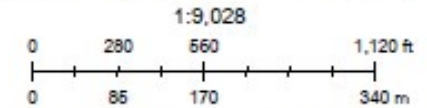


# Appendix B6 — WDFW PHS Map



11/8/2021, 9:14:23 AM

- |                     |                             |                     |                               |
|---------------------|-----------------------------|---------------------|-------------------------------|
| ● PHS Public Points | PHS Public Polygon Outlines | PHS Public Polygons | QTR-TWP                       |
| — PHS Public Lines  | AS MAPPED                   | AS MAPPED           | TOWNSHIP                      |
|                     | Masked                      | SECTION             | Pierce - Parcels_Query result |

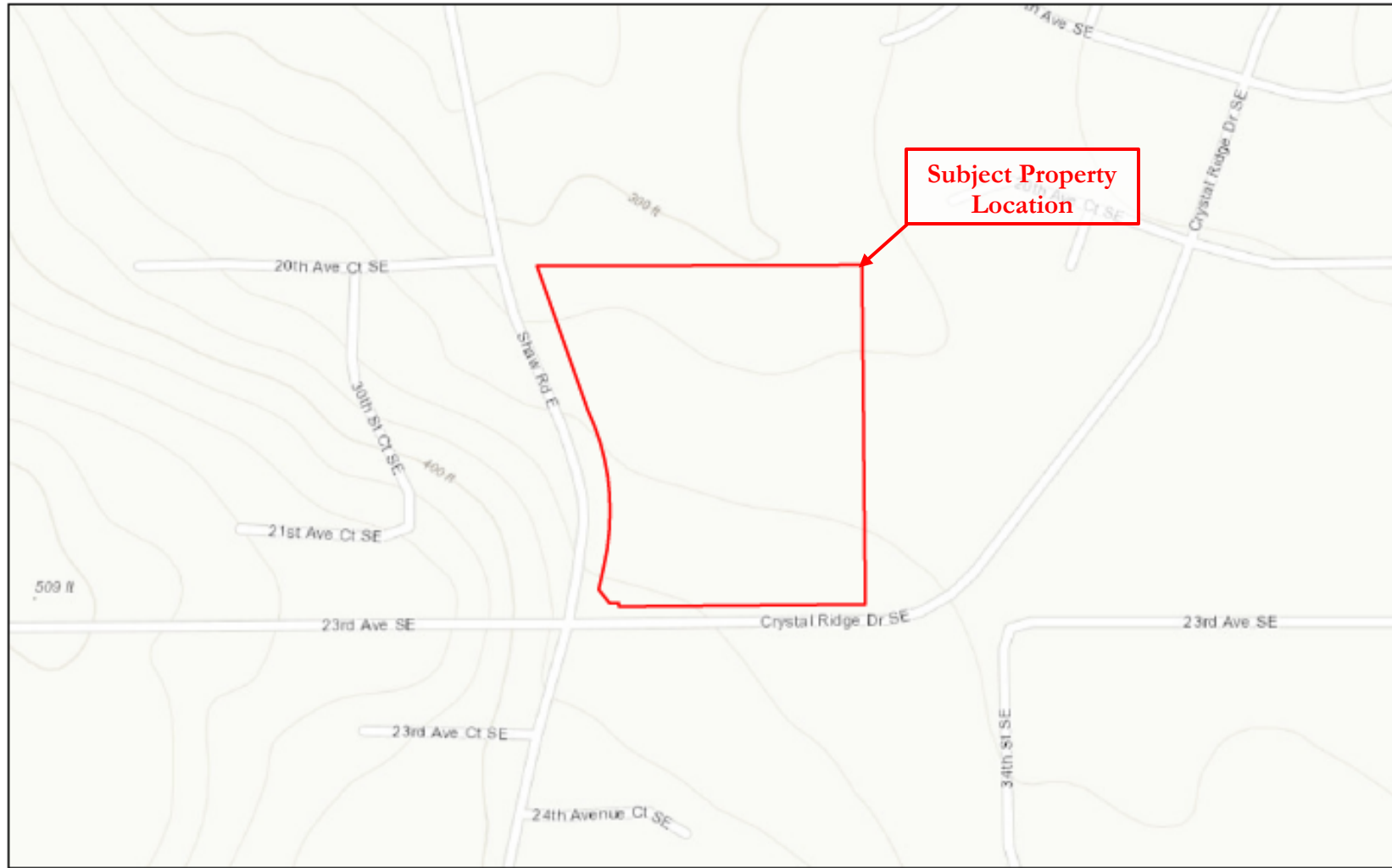


Pierce County WA, WDFW, County of King, Bureau of Land Management,


Soundview Consultants




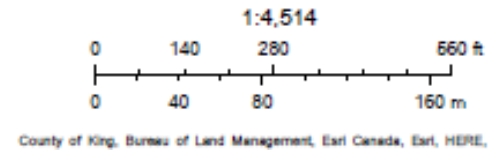
# Appendix B7 — WDFW SalmonScape Map



11/8/2021, 8:59:30 AM

 Pierce - Parcels \_Query result

 All SalmonScape Species

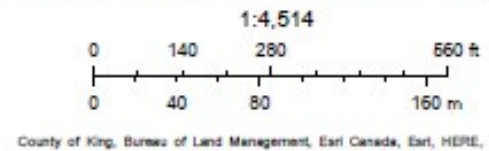


# Appendix B8 — DNR Stream Typing Map



11/8/2021, 9:01:13 AM

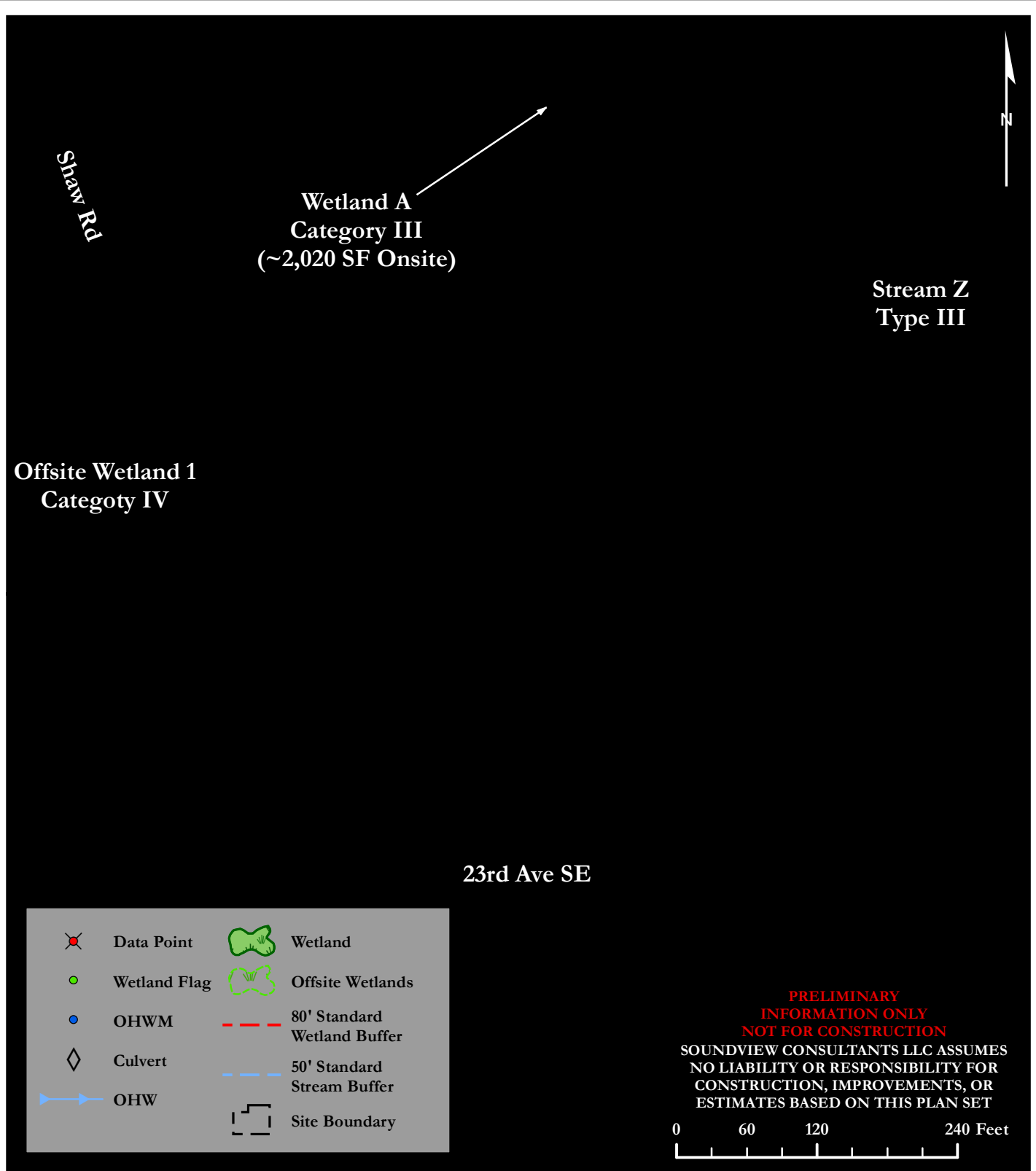
Pierce - Parcels \_Query result DNR - Stream Typing - Watercourses (DNR)  
— Type N, Np, Ns



# Appendix C — Existing Conditions Exhibit

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# DEER CREEK - EXISTING CONDITIONS MAP




**Soundview Consultants LLC**  
 Environmental Assessment • Planning • Land Use Solutions  
 2907 Harborview Dr., Suite D, Gig Harbor, WA 98335  
 Phone: (253) 514-8952 Fax: (253) 514-8954  
[www.soundviewconsultants.com](http://www.soundviewconsultants.com)

**DEER CREEK**  
 2007 SHAW RD  
 PUYALLUP, WA 98372  
 PIERCE COUNTY PARCEL NUMBERS:  
 0420354039

DATE: 1/10/2022
JOB: 1273.0009
BY: DDS
SCALE: 1" = 120'
FIGURE NO. 1



## Appendix D — Site Photographs

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**Photo 1: General upland conditions on the central portion of the subject property, facing north.**



**Photo 2: General upland conditions on the northern portion of the subject property, facing east.**





**Photo 3: Wetland A, facing north.**



**Photo 4: Stream Z, facing west.**





**Photo 5: Soil profile at DP-1.**



**Photo 6: Soil profile at DP-2.**



**Photo 7: Soil profile at DP-3**



**Photo 8: Soil profile at DP-4.**





# Appendix E — Data Forms

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

Project/Site: 1273.0009 - Deer Creek City/County: Puyallup/Pierce Sampling Date: 1/5/22  
 Applicant/Owner: RM Homes State: WA Sampling Point: DP-1U  
 Investigator(s): Ryan Krapp and Mae Ancheta Section, Township, Range: 35, 20 North, 04 East  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): A2 Lat: 47.170783 Long: -122.25236993 Datum: WGS 84  
 Soil Map Unit Name: Indianola loamy sand, 5 to 15 percent slopes NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <b>Not all three wetland criteria met; only hydrophytic vegetation present. Data was collected in the west-central portion of the subject property in a low topographic depression.</b>	

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

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Cytisus scoparius</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rubus armeniacus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>15</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Agrostis capillaris</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Rubus ursinus</u>	<u>15</u>	<u>No</u>	<u>FACU</u>	
3. <u>Dactylis glomerata</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
4. <u>Cirsium arvense</u>	<u>3</u>	<u>No</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>98</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
% Bare Ground in Herb Stratum <u>2</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

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

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
--	--

Remarks: **Hydrophytic vegetation criteria met through the Dominance Test due to the presence of FAC species typical of upland areas.**

**SOIL**

Sampling Point: DP-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0 - 10	10YR 3/2	100	-	-	-	-	SaLo	Sandy loam
10 - 15+	10YR 3/3	100	-	-	-	-	SaLo	Sandy loam

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

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

<b>Restrictive Layer (if present):</b> Type: <u>None</u> Depth (inches): <u>--</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

Remarks:  
No hydric soil criteria met.

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>None</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>None</u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>None</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

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

Remarks:  
No wetland hydrology criteria met. Soil pit left open for 20 minutes.

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

Project/Site: 1273.0009 - Deer Creek City/County: Puyallup/Pierce Sampling Date: 1/5/22  
 Applicant/Owner: RM Homes State: WA Sampling Point: DP-2W  
 Investigator(s): Ryan Krapp and Mae Ancheta Section, Township, Range: 35, 20 North, 04 East  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): A2 Lat: 47.171534 Long: -122.25149739 Datum: WGS 84  
 Soil Map Unit Name: Indianola loamy sand, 5 to 15 percent slopes NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <p align="center"><b>All three wetland criteria met. Data was collected in Wetland A.</b></p>	

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

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				0 = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u> )				
1. <u>Acer circinatum</u>	40	Yes	FACU	
2. <u>Rubus armeniacus</u>	30	Yes	FAC	
3. <u>Rubus spectabilis</u>	10	No	FAC	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				80 = Total Cover
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				
1. <u>Ranunculus repens</u>	10	Yes	FAC	
2. <u>Tolmiea menziesii</u>	10	No	FACU	
3. <u>Equisetum arvense</u>	5	No	FACU	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				25 = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				0 = Total Cover
% Bare Ground in Herb Stratum <u>75</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: Hydrophytic vegetation criteria met through the Dominance Test.

**SOIL**

Sampling Point: DP-2W

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 10	10YR 2/2	100	-	-	-	-	SaLo	Sandy loam
10 - 16+	2.5YR 4/1	97	7.5YR 4/4	3	C	M/PL	Sand	

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

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

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

**Restrictive Layer (if present):**  
 Type: None  
 Depth (inches): --

**Hydric Soil Present? Yes  No**

Remarks:  
 Hydric soil criteria met through indicator A11.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Field Observations:**

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>1</u>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>Surface</u>	

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

Remarks:  
 Wetland hydrology criteria met through primary indicators A2 and A3.

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

Project/Site: 1273.0009 - Deer Creek City/County: Puyallup/Pierce Sampling Date: 1/5/22  
 Applicant/Owner: RM Homes State: WA Sampling Point: DP-3U  
 Investigator(s): Ryan Krapp and Mae Ancheta Section, Township, Range: 35, 20 North, 04 East  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): A2 Lat: 47.171488 Long: -122.25153126 Datum: WGS 84  
 Soil Map Unit Name: Indianola loamy sand, 5 to 15 percent slopes NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center"><b>No wetland criteria met. Data was collected approximately 15 feet upslope to the south of Wetland A.</b></p>	

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

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft</u> )					
1. <u>Tsuga heterophylla</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)	
2. <u>Alnus rubra</u>	<u>10</u>	<u>No</u>	<u>FAC</u>		
3. <u>Thuja plicata</u>	<u>10</u>	<u>No</u>	<u>FAC</u>		
4. _____					
	<u>90</u>	= Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>30 ft</u> )					
1. <u>Acer circinatum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>		
2. <u>Ilex aquifolium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>		
3. <u>Rubus spectabilis</u>	<u>5</u>	<u>No</u>	<u>FAC</u>		
4. _____					
	<u>30</u>	= Total Cover			
<b>Herb Stratum</b> (Plot size: <u>10 ft</u> )					
1. <u>Polystichum munitum</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Rubus ursinus</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
	<u>15</u>	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft</u> )					
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
2. _____					
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>85</u>					

Remarks: **No hydrophytic vegetation present; did not meet the dominance test. Prevalence index not warranted due to combined lack of hydric soils and wetland hydrology.**

**SOIL**

Sampling Point: DP-3U

<b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b>								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 3	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
3 - 7	10YR 3/2	100	-	-	-	-	SaLo	Sandy loam
7 - 14	10YR 4/3	100	-	-	-	-	SaLo	Sandy loam
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Restrictive Layer (if present): Type: <u>None</u> Depth (inches): <u>--</u>			<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
Remarks: No hydric soil criteria met.								

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No wetland hydrology criteria met. Soil pit left open for 20 minutes.			



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

Project/Site: 1273.0009 - Deer Creek City/County: Puyallup/Pierce Sampling Date: 1/5/22  
 Applicant/Owner: RM Homes State: WA Sampling Point: DP-4U  
 Investigator(s): Ryan Krapp and Mae Ancheta Section, Township, Range: 35, 20 North, 04 East  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 8  
 Subregion (LRR): A2 Lat: 47.170590 Long: -122.25106019 Datum: WGS 84  
 Soil Map Unit Name: Indianola loamy sand, 5 to 15 percent slopes NWI classification: N//A

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center"><b>No wetland criteria met. Data was collected in the east-central portion of the subject property.</b></p>	

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

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft</u> )					
1. <u>Alnus rubra</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)	
2. <u>Pseudotsuga menziesii</u>	<u>10</u>	<u>No</u>	<u>FACU</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
		<u>40</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>30 ft</u> )					
1. <u>Rubus armeniacus</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____	
2. <u>Acer macrophyllum</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>		
3. <u>Holodiscus discolor</u>	<u>10</u>	<u>No</u>	<u>FACU</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
		<u>100</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>10 ft</u> )					
1. <u>Rubus ursinus</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>		
2. <u>Polystichum munitum</u>	<u>10</u>	<u>No</u>	<u>FACU</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
		<u>80</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
		<u>0</u>	= Total Cover		
<b>% Bare Ground in Herb Stratum</b> <u>20</u>					

**Hydrophytic Vegetation Indicators:**

Rapid Test for Hydrophytic Vegetation

Dominance Test is >50%

Prevalence Index is ≤3.0<sup>1</sup>

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

Wetland Non-Vascular Plants<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

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

**Hydrophytic Vegetation Present?** Yes  No

Remarks: **No hydrophytic vegetation present; did not meet the dominance test. Prevalence index not warranted due to combined lack of hydric soils and wetland hydrology.**



# Appendix F — Wetland Rating Forms

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Wetland name or number Wetland A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 11/16/21, 1/5/22  
 Rated by Kyla Caddey/Ryan Krapp Trained by Ecology?  Yes  No Date of training 11/16 & 10/18  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI ArcGIS

**OVERALL WETLAND CATEGORY** III (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	M	L	L	
Landscape Potential	M	M	L	
Value	H	M	M	<b>TOTAL</b>
<b>Score Based on Ratings</b>	7	5	4	16

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

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

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

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

Wetland name or number Wetland A

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

### Depressional Wetlands

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



Wetland name or number Wetland A

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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



<b>DEPRESSIONAL AND FLATS WETLANDS</b>	
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>	
<b>D 1.0. Does the site have the potential to improve water quality?</b>	
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1  <b>1</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0	<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0  <b>5</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0  <b>0</b>
<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>	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0 <b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0 <b>0</b>
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0 <b>1</b>
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0 <b>0</b>
<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>	
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?	Yes = 1 No = 0 <b>0</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0 <b>1</b>
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0 <b>2</b>
<b>Total for D 3</b>	<b>3</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

NOTES and FIELD OBSERVATIONS:

**DEPRESSIONAL AND FLATS WETLANDS**

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

<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	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	
<b>D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.</b>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
<b>D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</b>		
The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
<b>Total for D 4</b>	<b>Add the points in the boxes above</b>	<b>0</b>

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

<b>D 5.0. Does the landscape have the potential to support hydrologic functions of the site?</b>		
<b>D 5.1. Does the wetland receive stormwater discharges?</b>	Yes = 1 No = 0	0
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	Yes = 1 No = 0	0
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?</b>	Yes = 1 No = 0	1
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>1</b>

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

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</b>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		1
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
<b>D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b>	Yes = 2 No = 0	0
<b>Total for D 6</b>	<b>Add the points in the boxes above</b>	<b>1</b>

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

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

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

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

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

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

0

H 1.2. Hydroperiods

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

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

0

H 1.3. Richness of plant species

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

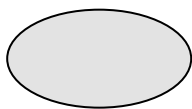
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

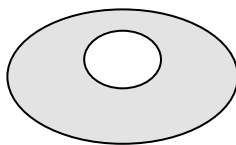
1

H 1.4. Interspersion of habitats

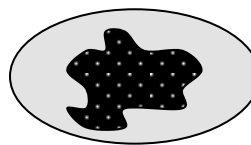
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



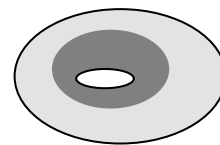
None = 0 points



Low = 1 point

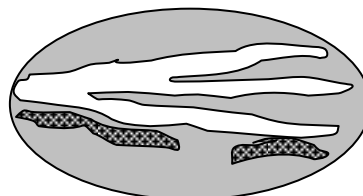
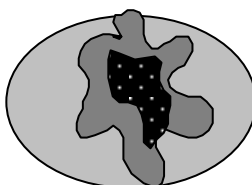
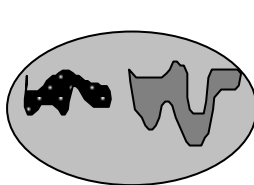


Moderate = 2 points



0

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



Wetland name or number Wetland A

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

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: <input type="text" value="0.00"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="4.55"/> /2] = <u>2.275</u> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: <input type="text" value="4.24"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="25.15"/> /2] = <u>16.81</u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	-2
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p>-1</p>

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

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

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



## WDFW Priority Habitats

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

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

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

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

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b></p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="float: right;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b> <input checked="" type="checkbox"/> No= <b>Not an estuarine wetland</b></span></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?  <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No - Go to <b>SC 1.2</b></span></p>	
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)  <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.  <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No = <b>Category II</b></span></p>	
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 2.2</b> <input checked="" type="checkbox"/> No – Go to <b>SC 2.3</b></span></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b> <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></span></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></span></p> <p>SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b> <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></span></p>	
<p><b>SC 3.0. Bogs</b></p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No – Go to <b>SC 3.2</b></span></p> <p>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b> <input checked="" type="checkbox"/> No = <b>Is not a bog</b></span></p> <p>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No – Go to <b>SC 3.4</b></span>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.</p> <p>SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b> <input type="checkbox"/> No = <b>Is not a bog</b></span></p>	

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 5.1</b>   <input checked="" type="checkbox"/> No = <b>Not a wetland in a coastal lagoon</b></p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— 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>— Long Beach Peninsula: Lands west of SR 103</li> <li>— Grayland-Westport: Lands west of SR 105</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 6.1</b>   <input checked="" type="checkbox"/> No = <b>not an interdunal wetland for rating</b></p> <p>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)? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No – Go to <b>SC 6.2</b></span></p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category II</b>   <input type="checkbox"/> No – Go to <b>SC 6.3</b></span></p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category III</b>   <input type="checkbox"/> No = <b>Category IV</b></span></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>	

Wetland name or number Wetland A

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Wetland name or number Off

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Offsite 1 Date of site visit: 1/5/22  
 Rated by Ryan Krapp Trained by Ecology?  Yes  No Date of training 10/18  
 HGM Class used for rating Slope Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI ArcGIS

**OVERALL WETLAND CATEGORY** IV (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	M	<b>TOTAL</b>
<b>Score Based on Ratings</b>	6	5	4	15

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

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

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

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

Wetland name or number Off:

## 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 figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	



Wetland name or number Off

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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

Wetland name or number Off

### 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: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		0
Slope is 1% or less	points = 3	
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : 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. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		2
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 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	2

**Rating of Site Potential** If score is: 12 = H   6-11 = M   X 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 > 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: X 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	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>	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? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>	Yes = 2 No = 0	2
Total for S 3	Add the points in the boxes above	3

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

*Record the rating on the first page*





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

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

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

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

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

1

H 1.2. Hydroperiods

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

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

0

H 1.3. Richness of plant species

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

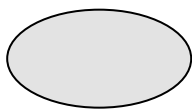
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

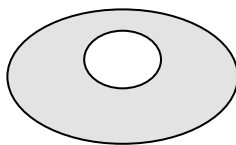
1

H 1.4. Interspersion of habitats

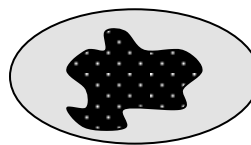
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



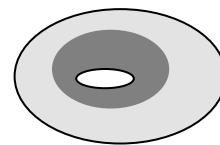
None = 0 points



Low = 1 point

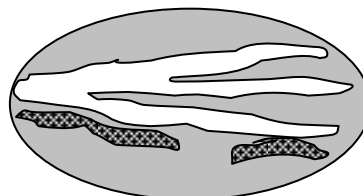
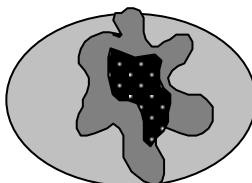
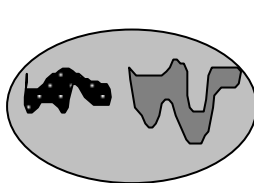


Moderate = 2 points



0

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



Wetland name or number Offsite 1

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

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).                  Calculate: <input type="text" value="0.00"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="0.00"/> /2] = <u>0</u> %                  If total accessible habitat is:                  &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>                  20-33% of 1 km Polygon <span style="float: right;">points = 2</span>                  10-19% of 1 km Polygon <span style="float: right;">points = 1</span>                  &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.                  Calculate: <input type="text" value="4.24"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="25.15"/> /2] = <u>16.81</u> %                  Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>                  Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span>                  Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span>                  Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	1
<p>H 2.3. Land use intensity in 1 km Polygon: If                  &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>                  ≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	-2
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p>-1</p>

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

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

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

Wetland name or number Off

## WDFW Priority Habitats

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

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

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

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

Wetland name or number Off

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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



Wetland name or number Off

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 5.1</b>   <input checked="" type="checkbox"/> No = <b>Not a wetland in a coastal lagoon</b></p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;"><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>— Long Beach Peninsula: Lands west of SR 103</li> <li>— Grayland-Westport: Lands west of SR 105</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 6.1</b>   <input checked="" type="checkbox"/> No = <b>not an interdunal wetland for rating</b></p> <p>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)? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No – Go to <b>SC 6.2</b></span></p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category II</b>   <input type="checkbox"/> No – Go to <b>SC 6.3</b></span></p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category III</b>   <input type="checkbox"/> No = <b>Category IV</b></span></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>	

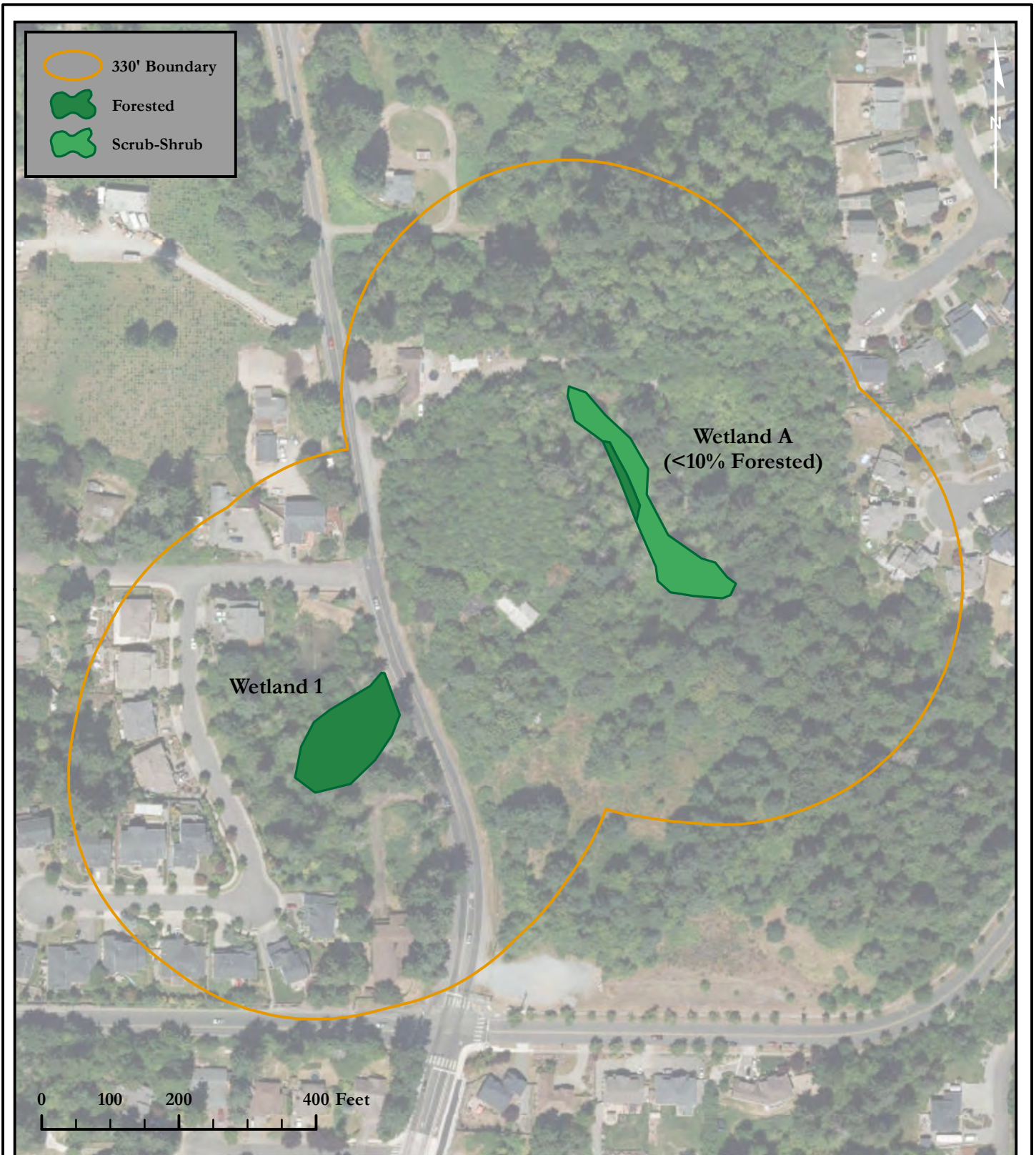
Wetland name or number Off

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# Appendix G — Wetland Rating Maps

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# DEER CREEK - COWARDIN MAP



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## DEER CREEK

2007 SHAW RD  
PUYALLUP, WA 98372

PIERCE COUNTY PARCEL NUMBERS:  
0420354039

DATE: 1/10/2022

JOB: 1273.0009

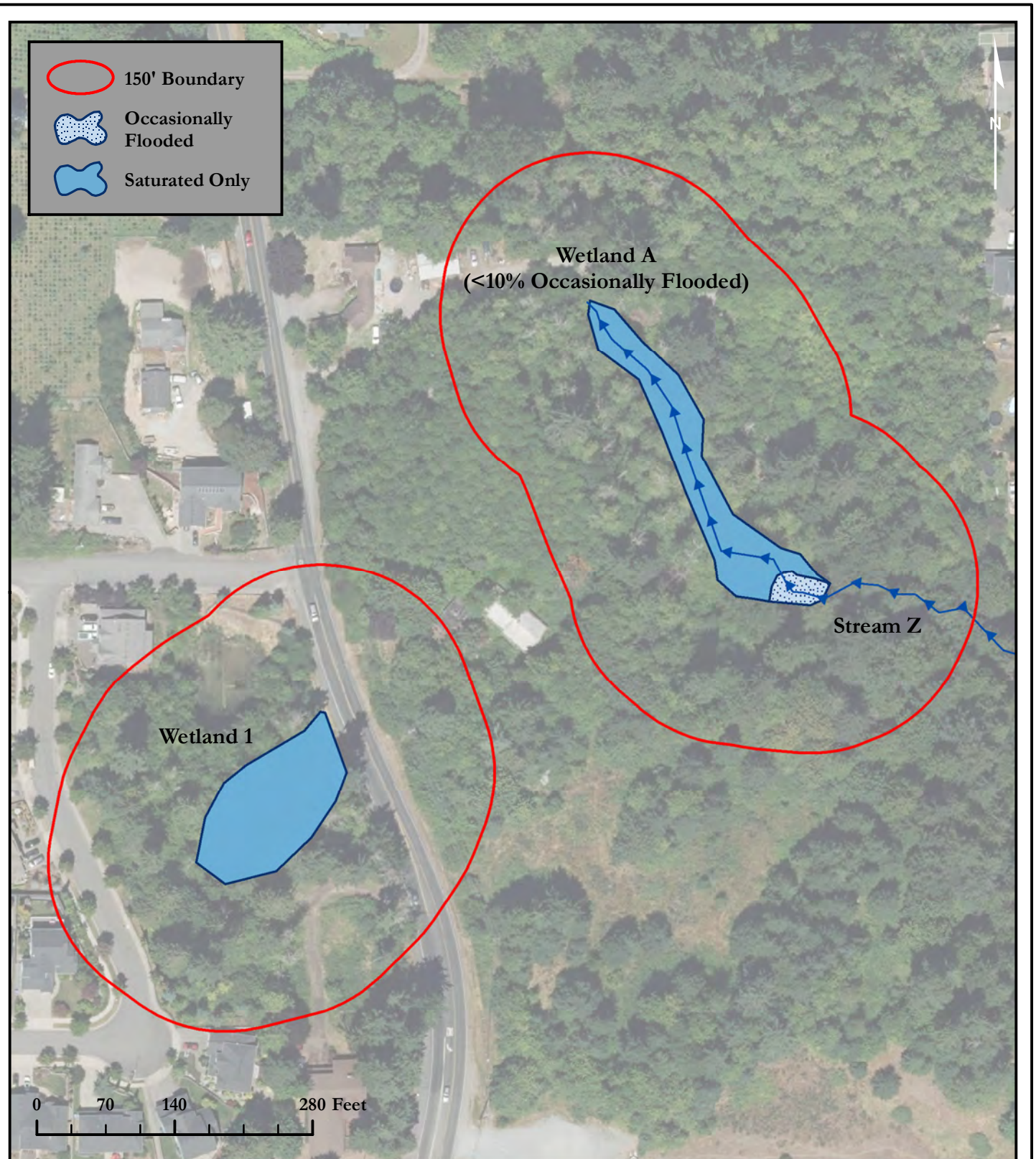
BY: DDS

SCALE: 1" = 200'

FIGURE NO. 1 of 5



# DEER CREEK - HYDROPERIOD MAP



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## DEER CREEK

2007 SHAW RD  
PUYALLUP, WA 98372

PIERCE COUNTY PARCEL NUMBERS:  
0420354039

DATE: 1/10/2022

JOB: 1273.0009

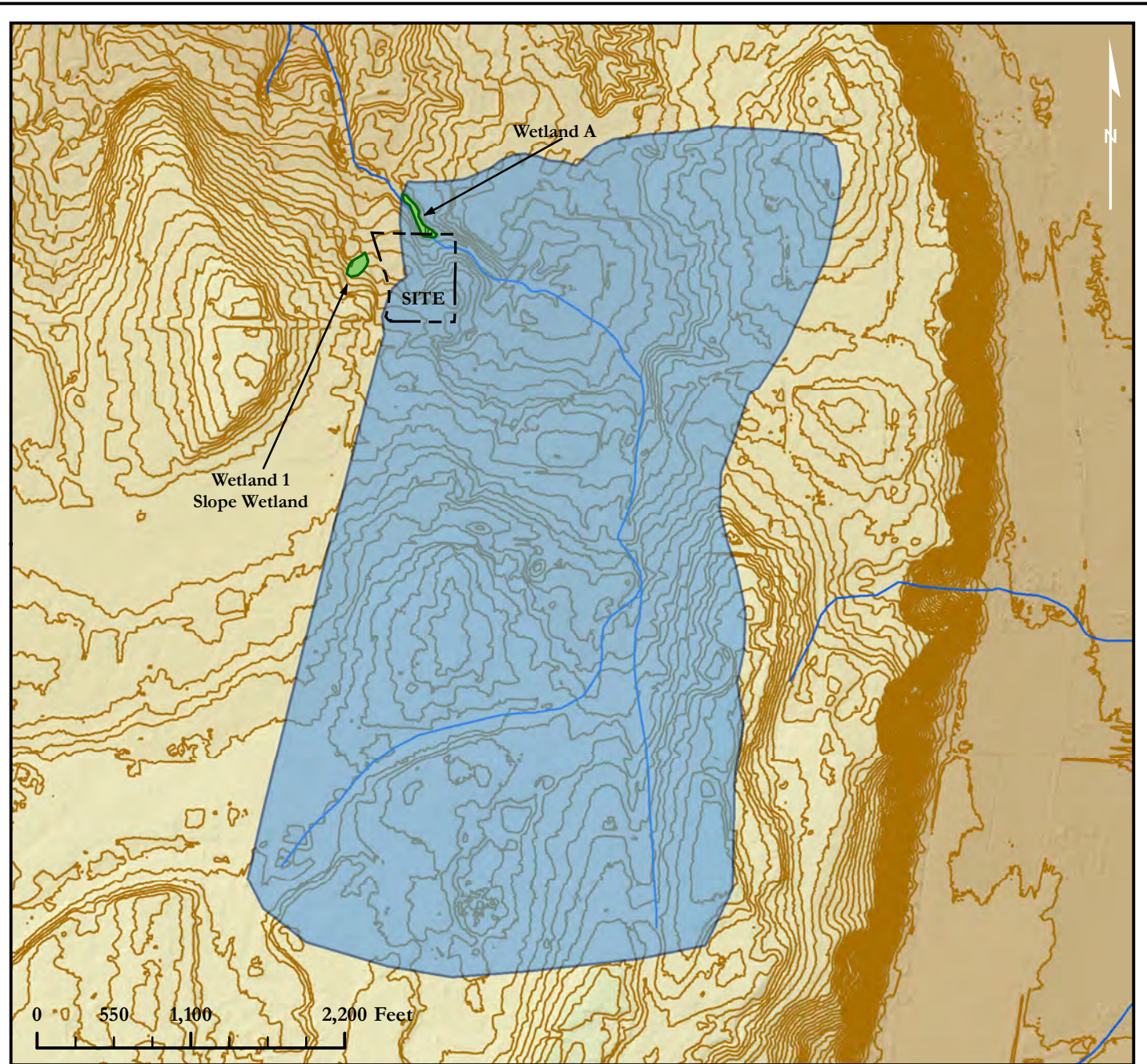
BY: DDS

SCALE: 1" = 140'




FIGURE NO. 2 of 5



# DEER CREEK - CONTRIBUTING BASIN MAP



D.4.0		
D.4.3		
	Area of Contributing Basin (SF)	17,784,895
	Area of Wetland A (SF)	15,732
	Percent of Wetland A within Contributing Basin	0.088%
D.5.0		
D.5.3		
	Is more than 25% of the Contributing Basin covered in Intensive Land Use?	YES

	Contributing Basin
	Wetlands
	Site Boundary



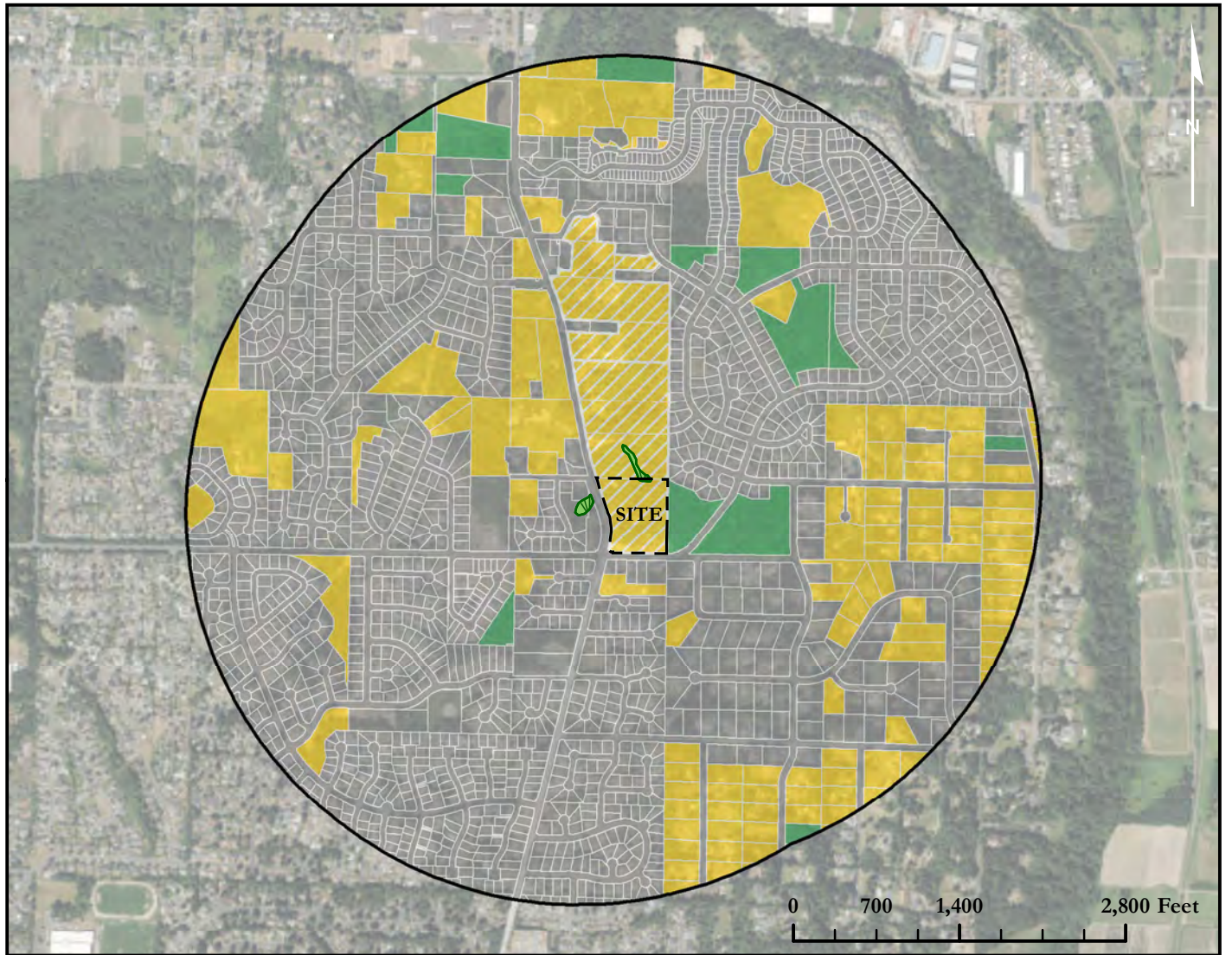
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 0420354039

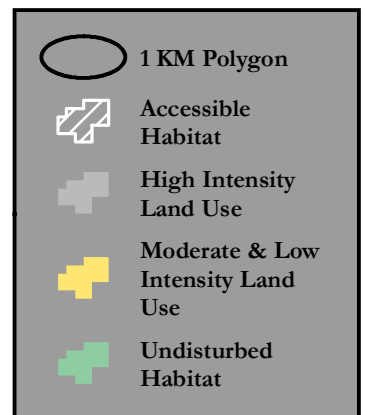
DATE: 1/10/2022
JOB: 1273.0009
BY: DDS
SCALE: 1" = 1,100
FIGURE NO. 3 of 5



# DEER CREEK - HABITAT MAP



H.2.0 Wetland A		
H.2.1		
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	4.55%
	<b>Accessible Habitat</b>	<b>2.27%</b>
H.2.0 Wetland 1		
H.2.1		
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.00%
	<b>Accessible Habitat</b>	<b>0.00%</b>
H.2.2		
	Undisturbed Habitat	4.24%
	Moderate & Low Intensity Land Uses	25.15%
	<b>Undisturbed Habitat in 1 KM Polygon</b>	<b>16.82%</b>
H.2.3		
	<b>High Intensity Land Use in 1 KM Polygon</b>	<b>70.61%</b>




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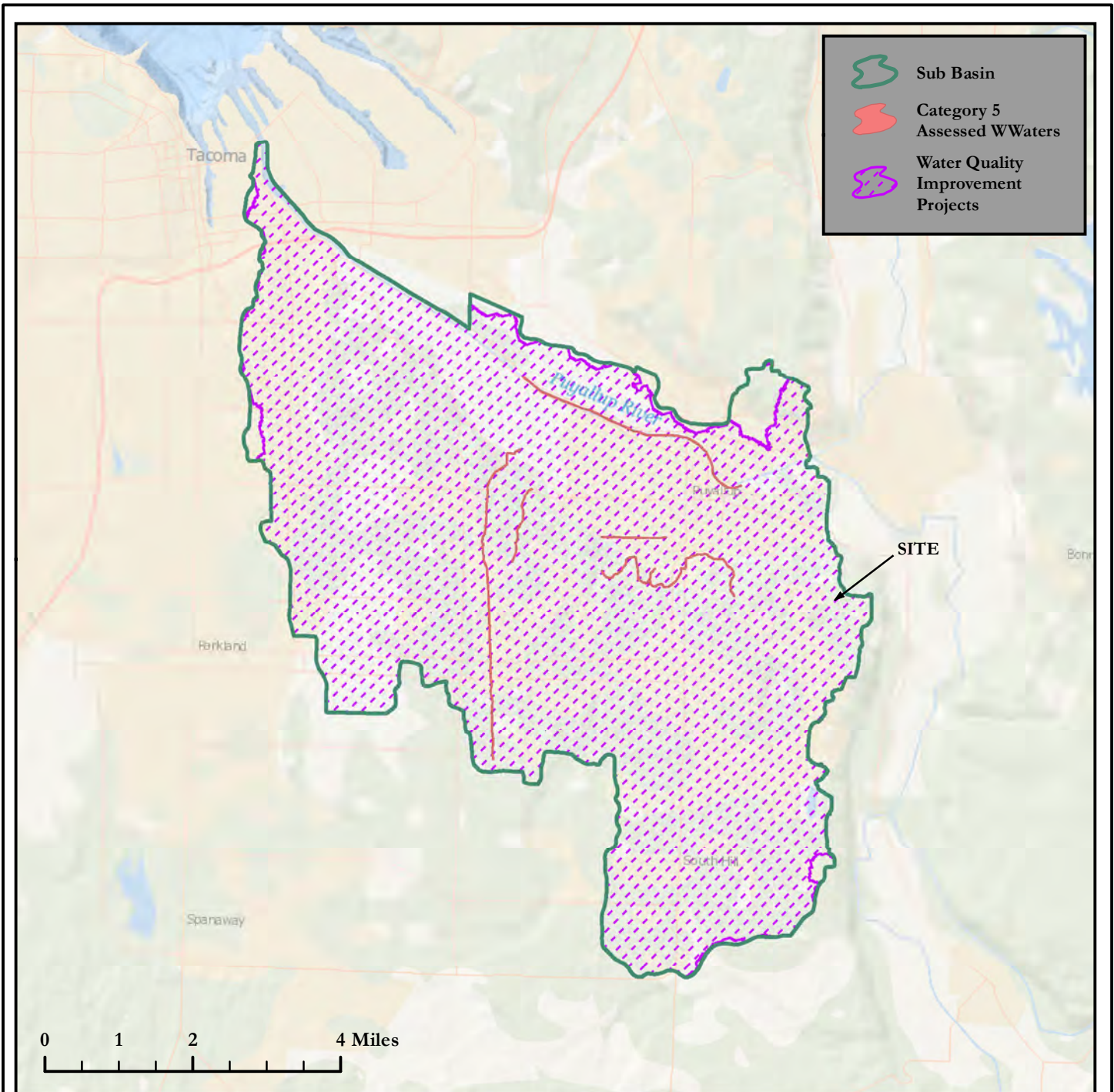
**DEER CREEK**  
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 PUYALLUP, WA 98372

PIERCE COUNTY PARCEL NUMBERS:  
 0420354039

DATE: 1/10/2022
JOB: 1273.0009
BY: DDS
SCALE: 1" = 1,400'
FIGURE NO. 4 of 5



# DEER CREEK - 303(D) MAP



Name	Pollutants	TMDL ID	WRIA	Year Approved
Puyallup River Bacteria TMDL	Bacteria	109	10	2011
Puyallup River Multiparameter TMDL	BOD5, Ammonia-N, Chlorine, Dissolved Oxygen	19	10	1994
Commencement Bay Dioxin TMDL	Dioxin	2	10	1992
Clarks Creek Watershed Bacteria TMDL	Bacteria	88	10	2008



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**DEER CREEK**  
 2007 SHAW RD  
 PUYALLUP, WA 98372  
 PIERCE COUNTY PARCEL NUMBERS:  
 0420354039

DATE: 1/10/2022  
 JOB: 1273.0009  
 BY: DDS  
 SCALE: 1" = 2 mi  
 FIGURE NO. 5 of 5

## Appendix H — Qualifications

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All field inspections, habitat assessments, wetland and OHW delineations, and supporting documentation, including this *Wetland and Fish and Wildlife Habitat Assessment Report* prepared for the *Deer Creek* property were prepared by, or under the direction of Jon Pickett of SVC. In addition, the field investigations were performed primarily by Ryan Krapp, Kyla Caddey and Mae Ancheta, report preparation was completed by Mae Ancheta, and additional project oversight and final quality assurance/quality control was completed by Kyla Caddey.

### Jon Pickett

Associate Principal

Professional Experience: 10+ years

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Jon Pickett is an Associate Principal and Senior Scientist with a diverse background in environmental and shoreline compliance and permitting, wetland and stream ecology, fish and wildlife biology, mitigation compliance and design, and environmental planning and land use due diligence. Jon oversees a wide range of large-scale industrial, commercial, and multi-family residential projects throughout Western Washington, providing environmental permitting and regulatory compliance assistance for land use entitlement projects from feasibility through mitigation compliance. Jon performs wetland, stream, and shoreline delineations and fish & wildlife habitat assessments; conducts code and regulation analysis and review; prepares reports and permit applications and documents; provides environmental compliance recommendation; and provides restoration and mitigation design.

Jon earned a Bachelor of Science degree in Natural Resource Sciences from Washington State University and Bachelor of Science and Minor in Forestry from Washington State University. Jon has received 40-hour wetland delineation training (Western Mountains, Valleys, & Coast and Arid West Regional Supplements) and regularly performs wetland, stream, and shoreline delineations. Jon is a Whatcom County Qualified Wetland Specialist and Wildlife Biologist and is a Pierce County Qualified Wetland Specialist. He has been formally trained by WSDOE in the use of the Washington State Wetland Rating System 2014, How to Determine the Ordinary High-Water Mark (Freshwater and Marine), Using Field Indicators for Hydric Soils, and the Using the Credit-Debit Method for Estimating Mitigation Needs.

### Ryan Krapp

Environmental Scientist / Field Lead

Professional Experience: 10+ years

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Ryan Krapp is an Environmental Scientist and Field Lead with a background in conducting wetland delineations, habitat assessments, botanical surveys, avian surveys, threatened & endangered species surveys, and fisheries studies. He has considerable experience in production of Environmental Assessments and Biological Assessments and Evaluations under NEPA guidelines for projects regulated by the U.S. Forest Service, U.S. Army Corps of Engineers, and Bureau of Indian Affairs as well as leading Section 7 ESA consultation with the U.S. Fish and Wildlife Service. Project planning, permitting, and compliance are all part of his professional experiences and practices at SVC.

Ryan has managed environmental investigation projects including wetlands, streams, and critical habitats data collection on large pipeline corridors, overhead electrical transmission corridors, and oil/natural gas drilling development. He has extensive experience in utilizing GIS to collect, manage, and analyze large volumes of spatial and temporal field data to aide in project management,

monitoring, analysis, and mapping. In addition, he is a FAA trained recreational pilot and a PADI certified SCUBA diver with fresh and saltwater diving experience. Ryan is a USFWS-approved Mazama pocket gopher survey biologist.

## **Kyla Caddey, PWS, Certified Ecologist**

Senior Environmental Scientist

Professional Experience: 7 years

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Kyla Caddey is a Senior Environmental Scientist with a diverse background in stream and wetland ecology, wildlife ecology and conservation, wildlife and natural resource assessments and monitoring, and riparian habitat restoration at various public and private entities. Kyla has field experience performing in-depth studies in both the Pacific Northwest and Central American ecosystems which included various environmental science research and statistical analysis. Kyla has advanced expertise in federal- and state-listed endangered, threatened, and sensitive species surveys and assessment of aquatic and terrestrial systems throughout the Puget Sound region. She has completed hundreds of wetland delineations and has extensive knowledge and interest in hydric soil identification. As the senior writer, she provides informed project oversight and performs final quality assurance / quality control on various types of scientific reports for agency submittal, including: Biological Assessments/Evaluations; Wetland, Shoreline, and Fish and Wildlife Habitat Assessments; Mitigation Plans, and Mitigation Monitoring Reports. She currently performs wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; prepares scientific reports; and provides environmental permitting and regulatory compliance assistance to support a wide range of commercial, industrial, and multi-family residential land use projects.

Kyla earned a Bachelor of Science degree in Environmental Science and Resource Management from the University of Washington, Seattle with a focus in Wildlife Conservation and a minor in Quantitative Science. She has also completed additional coursework in Comprehensive Bird Biology from Cornell University. Ms. Caddey is a Certified Professional Wetland Scientist (PWS #3479) through the Society of Wetland Scientists and Certified Ecologist through the Ecological Society of America. She has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement), is a Pierce County Qualified Wetland Specialist and Wildlife Biologist, and is a USFWS-approved Mazama pocket gopher survey biologist. Kyla has been formally trained through the Washington State Department of Ecology, Coastal Training Program, and the Washington Native Plant Society in winter twig and grass, sedge, and rush identification for Western WA; Using the Credit-Debit Method in Estimating Wetland Mitigation Needs; How to Determine the Ordinary High Water Mark; Using Field Indicators for Hydric Soils; How to Administer Development Permits in Washington Shorelines; Puget Sound Coastal Processes; and Forage Fish Survey Techniques. Additionally, she has received formal training in preparing WSDOT Biological Assessments.

## **Megan Mae Ancheta**

Staff Scientist

Professional Experience: 2 years

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Megan (Mae) Ancheta is a Staff Scientist with a background in wildlife and conservation biology in Washington state. Mae earned her Bachelor of Science degree in Environmental Science with a focus in Conservation Biology and Ecology and a certificate in Restoration Ecology from University of Washington, Tacoma. There she gained extensive, hands-on experience working in lab and field



settings, and studying socio-ecological restoration and wildlife conservation in old growth forests, historic Puget lowland prairies, and wetland and riparian areas. Mae has applied her studies working in the local government at the city and county level as well as within federal entities conducting wetland mitigation planning, stream habitat monitoring, habitat restoration for federally listed species, and thorough site analyses for natural resource management utilizing ArcGIS and model analyses.

Mae currently assists in wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports, biological evaluations, and permit applications to support clients through the regulatory and planning process for various land use projects.