CRITICAL AREA STUDY
AND
BUFFER MITIGATION PLAN

FOR

PARADISE SUBSTATION
SNOHOMISH COUNTY, WA

Wetland Resources, Inc. Project #25023

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1.0 INTRODUCTION

1.1 SITE DESCRIPTION

The subject property is a 9.73-acre parcel located at 22422 Echo Lake Road, in unincorporated Snohomish County, WA (parcel 27062900401600). The site is situated within the Bear Creek sub-basin of the Cedar-Sammamish Watershed, Water Resource Inventory Area (WRIA) 8. The Public Land Survey System (PLSS) maps the site within a portion of Section 29, Township 27N, Range 06E, W.M.

The subject property is primarily forested, with an open grassy area in the eastern portion. Access is provided from Echo Lake Road, which borders the eastern property line. Vegetation is dominated by red alder (*Alnus rubra*), big leaf maple (*Acer macrophyllum*), black cottonwood (*Populus balsamifera*), Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), salmonberry (*Rubus spectabilis*), vine maple (*Acer circinatum*), beaked hazelnut (*Corylus cornuta*), low Oregon grape (*Mahonia nervosa*), red elderberry (*Sambucus racemosa*), and western swordfern (*Polystichum munitum*). Site topography varies, but generally has a gentle west-aspect slope. A shallow ravine crosses the site from northeast to southwest. Surrounding land use is primarily rural residential.

Wetland Resources, Inc. (*WRI*) conducted site investigations in November, 2024, and January, 2025, to locate wetlands and streams on and near the site in preparation for a development application.



Figure 1 – Aerial view of the subject property (No Scale).

2.0 WETLAND AND STREAM DETERMINATION

2.1 LIMIT OF STUDY

The proposed project occurs within one tax parcel. Lack of legal access prevents WRI staff from performing wetland and stream determinations in surrounding areas on adjacent parcels. Critical areas on adjacent properties were approximated.

2.2 REVIEW OF EXISTING INFORMATION

Prior to conducting the site investigation, public resource information regarding wetlands, streams, and other critical areas was reviewed to gather background information on the subject property and the surrounding area. These sources included the following:

- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory: The NWI map depicts a riverine feature in the southwestern corner of the property.
- USDA/Natural Resources Conservation Service (NRCS) Web Soil Survey: The Web Soil Survey indicates that the project area is underlain by three soil series: Alderwood gravelly sandy loam, 0 to 8 percent slopes in the eastern portion of the site; Alderwood gravelly sandy loam, 8 to 15 percent slopes in the center and western portions of the site; McKenna gravelly silt loam, 0 to 8 percent slopes, in the northwestern corner of the property.
- Washington Department of Fish and Wildlife (WDFW) SalmonScape Interactive Mapping System: The SalmonScape Interactive Mapping System does not display any features on or near the subject site.
- WDFW Priority Habitat and Species (PHS) Interactive Map: The PHS Interactive Map does not display any features on or near the property.
- Washington Department of Natural Resources (WA DNR) Forest Practices Application Mapping Tool: The DNR FPAMT mapping tool depicts a Type N (non-fish-bearing) stream crossing the southwestern corner of the site. The closest Type F waters are over 2,200 feet southeast and over 2,400 feet west of the subject property.
- Snohomish County Planning and Development (PDS) Map Portal: The PDS Map Portal depicts a riverine feature in approximately the same location as NWI. A "seasonal non-fish habitat" stream is mapped in the same location as the riverine feature, which is in the same general location as the Type N stream mapped by DNR. PDS models two small wetlands adjacent to the riverine feature, one entirely off site, and another extending into the southwestern portion of the property.

2.3 DETERMINATION METHODOLOGY

2.3.1 Ordinary High Water Mark Determination

The ordinary high water mark (OHWM) of lakes, streams, and other waterbodies are determined using the methodology described in *Determining the Ordinary High Water Mark for Shoreline Management*

Act Compliance in Washington State (Anderson et. al. 2016) unless otherwise noted. Waters are classified according to the water typing system provided in the Washington Administrative Code (WAC), section 222-16-031, SCC 30.91S.640, and SCC 30.62A.230.

2.3.2 Wetland Determination Methodology

Wetland conditions were evaluated and delineated using methodologies described in the *Corps of Engineers Wetlands Delineation Manual* (*Final Report*; January 1987), except where superseded by the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (*Version 2.0*, referred to as 2010 Regional Supplement). WRI findings are consistent with these manuals. Pursuant to SCC 30.62A.230, the wetlands are classified using the Washington State Wetland Rating System for Western Washington, 2014 Update, Version 2 (Hruby & Yahnke, 2023). The following criteria descriptions were used in the routine boundary determination:

1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
2.) Examination of the site for hydric soils;
3.) Determining the presence of wetland hydrology

Hydrophytic Vegetation Criteria
The manuals define hydrophytic vegetation as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. One of the most common indicators for hydrophytic vegetation is when more than 50 percent of a plant community consists of species rated "Facultative" and wetter on lists of plant species that occur in wetlands.

Soils Criteria
The manuals define hydric soils as those that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Field indicators are used for determining whether a given soil meets the definition for hydric soils.

Hydrology Criteria
The 2010 Regional Supplement defines wetland hydrology as "areas that are inundated (flooded or ponded) or the water table is less than or equal to 12 inches below the soil surface for 14 or more consecutive days during the growing season at a minimum frequency of 5 years in 10." During the early growing season, wetland hydrology determinations are made based on physical observation of surface water, a high water table, or saturation in the upper 12 inches. Outside of the early growing season, wetland hydrology determinations are made based on physical evidence of recent inundation or saturation (i.e., water marks, surface soil cracks, water-stained leaves).

2.4 CRITICAL AREA FINDINGS

Three wetlands (Wetlands A – C) and two streams (Streams A and B) were identified on site.

2.4.1 Wetland A

Cowardin classification: Palustrine, Forested Wetland, Broad-leaved deciduous, Seasonally flooded / Saturated
HGM Rating Class: Slope / Depressional
Ecology Rating Score: 21
Ecology Rating Category: II
Ecology Habitat Score: 6
Snohomish County Standard Buffer: 110 feet

Wetland A is primarily forested with both slope and depressional hydrogeomorphic characteristics. Hydrology to the wetland is fed by precipitation, high groundwater, stormwater from Echo Lake Road, and surface runoff from the surrounding area. Wetland A is situated within a shallow ravine that progressively constricts toward its outlet, where it discharges southwest into Stream A.



Figure 2 – Photo of Wetland A.

Native vegetation within Wetland A includes red alder (*Alnus rubra*, FAC), black cottonwood (*Populus balsamifera*, FAC), western red cedar (*Thuja plicata*, FAC), cascara (*Frangula purshiana*, FAC), vine maple (*Acer circinatum*, FAC), willows (*Salix* spp.), salmonberry (*Rubus spectabilis*, FAC), western lady fern (*Athyrium filix-femina*, FAC), and piggyback plant (*Tolmiea menziesii*, FAC). Invasives observed within Wetland A include yellow-flag iris (*Iris pseudacorus*, OBL), Himalayan blackberry (*Rubus armeniacus*, FAC), and reed canarygrass (*Phalaris arundinacea,* FACW). Dominant species within Wetland A are rated FAC or wetter, meeting the requirements for hydrophytic vegetation.

Soils observed within Wetland A are very dark brown (10YR 2/2) gravelly silt loam in the top layer. Soils below are the same matrix color with dark yellowish brown (10YR 4/6) redoximorphic features concentrated in the matrix. Soils within Wetland A meet the primary hydric soil indicator F6 (Redox Dark Surface). During the January, 2025, site visit, a high water table was encountered at approximately six inches below the surface with saturation at approximately four inches. Primary wetland hydrology indicators A2 (High Water Table) and A3 (Saturation) are present in Wetland A.

The area mapped as Wetland A meets wetland requirements for hydrophytic vegetation, hydric soils, and hydrology.

2.4.2 Wetland B

Cowardin classification: Palustrine, Forested Wetland, Broad-leaved deciduous, Seasonally flooded / Saturated
HGM Rating Class: Slope / Depressional
Ecology Rating Score: 21
Ecology Rating Category: II
Ecology Habitat Score: 7
Snohomish County Standard Buffer: 110 feet

Wetland B is forested with depressional and slope hydrogeomorphic characteristics. It is located near the southwestern property corner along a topographic break. Hydrology in Wetland B is fed by precipitation, high groundwater, surface runoff, and stormwater from 226th Street SE.

Native vegetative species within Wetland B are similar to Wetland A, including red alder (*Alnus rubra*, FAC), black cottonwood (*Populus balsamifera*, FAC), western red cedar (*Thuja plicata*, FAC), vine maple (*Acer circinatum*, FAC), willows (*Salix* spp.), salmonberry (*Rubus spectabilis*, FAC), western lady fern (*Athyrium filix-femina*, FAC), and piggyback plant (*Tolmiea menziesii*, FAC). Invasives observed within Wetland B include Himalayan blackberry (*Rubus armeniacus*, FAC), and reed canarygrass (*Phalaris arundinacea*). Dominant species within Wetland B are rated as FAC or wetter, meeting the requirements for hydrophytic vegetation.

Soils observed within Wetland B are black (10YR 2/1) sandy loam in the top layer. Soils below are very dark grayish brown (10YR 4/2) silt loam with approximately five percent dark yellowish brown (10YR 4/6) redoximorphic features concentrated in the matrix. Soils within Wetland B meet requirements for primary hydric soil indicator F7 (Depleted Dark Surface). Primary wetland hydrology indicators A2 (Surface Water) and A3 (Saturation) are present in Wetland B.



Figure 3 – Photo of Wetland B.

The area mapped as Wetland B meets wetland requirements for hydrophytic vegetation, hydric soils, and hydrology.

2.4.3 Wetland C

Cowardin classification: Palustrine, Forested / Scrub-shrub Wetland, Broad-leaved Deciduous, Seasonally flooded
HGM Rating Class: Slope
Ecology Rating Score: 17
Ecology Rating Category: III
Ecology Habitat Score: 5
Snohomish County Standard Buffer: 60 feet

Wetland C is a slope wetland that is hydrologically fed by precipitation, stormwater runoff from Echo Lake Road, and surface water runoff from the surrounding area. Topography in Wetland C generally slopes west and is impounded by 226th Street SE to the south. Wetland C outlets to a roadside ditch along 226th Street SE that conveys hydrology to the west.



Figure 4 – Photo of Wetland C, looking north.

Native vegetative species within Wetland C includes red alder (*Alnus rubra*, FAC), black cottonwood (*Populus balsamifera*, FAC), vine maple (*Acer circinatum*, FAC), willows (*Salix* spp.), and salmonberry (*Rubus spectabilis*, FAC). Invasives observed within Wetland C include Himalayan blackberry (*Rubus armeniacus*) and reed canarygrass (*Phalaris arundinacea*). Dominant species within Wetland C are rated as FAC or wetter, meeting the requirements for hydrophytic vegetation.

Soils observed within Wetland C are very dark brown (10YR 2/2) silt loam in the top layer, breaking to very dark grayish brown (10YR 3/2) silt loam in the sublayer. Although no primary hydric soil

indicators are met, the presence of a low chroma dark surface layer indicate prolonged inundation and hydric soil formation. During the January, 2025, site visit, a water table was encountered at approximately fourteen inches below the surface with saturation at approximately twelve inches below the surface. Primary wetland hydrology indicator A3 (Saturation) is present in Wetland C.

The area mapped as Wetland C meets wetland requirements for hydrophytic vegetation, hydric soils, and hydrology.

2.4.4 Stream A

Stream Type: Ns
Snohomish County Standard Buffer: 50 feet

Stream A is a narrow, intermittent stream located within Wetland A that flows off site to the west. Stream A headwaters are located off site to the east. Hydrology in Stream A originates from precipitation, stormwater, and high groundwater. Downstream barriers mapped by DNR preclude fish use in this reach, as evidenced by their Type N classification. Type Ns streams in Snohomish County require 50-foot buffers per SCC 30.62A.320(1)(a) Table 2a.



Figure 5 – Photo of Stream A.

2.4.5 Stream B
Stream Type: Ns
Snohomish County Standard Buffer: 50 feet

Stream B is an intermittent stream located within Wetland B that flows off site to the west. Stream B headwaters are located off site to the east. Hydrology in Stream B originates from precipitation, stormwater, and high groundwater. Downstream barriers mapped by DNR preclude fish use in this system, as evidenced by their Type N classification. Type Ns streams in Snohomish County require 50-foot buffers per SCC 30.62A.320(1)(a) Table 2a.

2.5 NON-WETLAND AREAS

An access road enters the property from Echo Lake Road, leading to an area that was previously cleared and graded in the eastern portion of the property. This area is vegetated by typical lawn grasses and is regularly mowed. Outside of this area, vegetation in the upland portions of the site consists of Douglas fir (*Pseudotsuga menziesii*; FACU), western red cedar (*Thuja plicata* FAC), big leaf maple (*Acer macrophyllum*; FACU), red alder (*Alnus rubra*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), oceanspray (*Holodiscus discolor*; FACU), snowberry (*Symphoricarpos albus*; FACU), salal (*Gaultheria shallon*; FACU), tall Oregon grape (*Mahonia aquifolium*; FACU), low Oregon grape (*Mahonia nervosa*; FACU), swordfern (*Polystichum munitum*; FACU), trailing blackberry (*Rubus ursinus*; FACU), piggyback plant (*Tolmiea menziesii*; FAC), bracken fern (*Pteridium aquilinum*; FACU), English holly (*Ilex aquifolium*; FACU), English ivy (*Hedera helix*; FACU), red flowering currant (*Ribes sanguineum*; FACU), deer fern (*Blechnum spicant*; FAC), red huckleberry (*Vaccinium parvifolium*; FACU), and reed canarygrass (*Phalaris arundinacea*; FACW). Dominant vegetation in non-wetland areas is comprised of facultative-upland (FACU) species. Therefore, the plant community is not hydrophytic.



Figure 6 – Non-wetland areas. Left: maintained lawn. Right: ex. access road.

Soils in non-wetland areas are typically very dark grayish brown (10YR 3/2 – 3/4) gravelly loam between the surface and a depth of 18 inches. No hydric soil indicators were present. Soils in the areas mapped as non-wetland were generally dry to slightly moist during the January, 2025, site investigation.

Given the lack of hydrophytic vegetation, direct hydrologic indicators, and lack of hydric soil indicators, the areas mapped as non-wetland do not meet criteria for wetlands.

2.6 WILDLIFE

The subject property includes habitat suitable for wildlife. Wildlife species observed during the January 2025 site investigation include Douglas Squirrel (*Tamiasciurus douglasii*), Stellar's Jay (*Cyanocitta stelleri*), and American Robin (*Turdus migratorius*).

Given the habitat available, the following mammalian species are expected to use this site: Columbian black-tailed deer (*Odocoileus hemionus columbianus*), squirrels (*Sciurus* spp.), mountain beaver (*Aplodontia rufa*), bats (*Myotis* spp.), Virginia opossum (*Didelphis virginiana*), coyote (*Canis latrans*), black bear (*Ursus americanus*), and bobcat (*Lynx rufus*). Avian species expected to use this site include American crow (*Corvus brachrhyncos*), Bewick's Wren (*Thryomanes bewickii*), Brown Creeper (*Certhia americana),* Golden-crowned Kinglet (*Regulus satrapa*), Hairy Woodpecker (*Dryobates villosus*), Northern Flicker (*Colaptes auratus),* Pacific Wren (*Troglodytes pacificus*), Red-tailed Hawk (*Buteo jamaicensis),* Spotted Towhee (*Pipilo maculatus*), Violet-green Swallow (*Tachycineta thalassina*), Black-capped Chickadee (*Poecile atricapillus*), and Common Raven (*Corvus corax*). Other species expected to use the site include Pacific tree frog (*Pseudacris regilla*), Oregon ensatina (*Ensatina escholtzii oregonensis*), Northwestern salamander (*Ambystoma gracile*), rough skinned newt (*Taricha granulosa*), and garter snakes (*Thamnophis sp*.). These lists are not meant to be all-inclusive and may omit species that currently utilize or could utilize the site. No threatened or endangered species are known to be associated with this site.

3.0 PROJECT DESCRIPTION AND BUFFER AVERAGING PLAN

3.1 PROJECT DESCRIPTION

The applicant is proposing to construct an electrical substation in the eastern portion of the site. In order to site the substation, mitigation measures are proposed to reduce the high-intensity land use buffer to standard intensity buffers. The standard buffers on Wetlands A and C are proposed to be averaged using the provisions of SCC 30.62A.320(1)(g)(i), resulting in a total reduction of 5,598 square feet (2,838+1,644+1,116) of buffer and total addition of 7,296 square feet (5,934+181+1,181) of buffer. A small (34 sq. ft.) permanent buffer impact is necessary for access road improvements along Echo Lake Road. A buffer creation area of 117 square feet is proposed as mitigation for the permanent impact. These measures are further detailed below.

3.2 MITIGATION MEASURES FOR HIGH INTENSITY LAND USES

The proposed use of the site as an electrical substation is a non-residential use in a residential zone. SCC 30.62A.320(1)(a) Table 2b requires the application of high-intensity land use buffers in such circumstances. The applicant is proposing to reduce the high-intensity land use buffers to standard buffer widths using the optional mitigation measures provided in SCC 30.62A.320(4). The application of optional mitigation measure 1 (Table 4 - *Mitigation Measures for High Intensity Land Uses*) is required for all three on-site wetlands. Optional mitigation measure 2 (SCC 30.62A.320(4)(b)) is required for Wetlands A and B.

Through the combination of mitigation measures described below, the applicable buffers for Wetlands A and B will be reduced from 150 feet to 110 feet and the applicable buffer for Wetland C will be reduced from 80 feet to 60 feet.

3.2.1 Optional Mitigation Measure 1

The following table lists the mitigation measures required for optional mitigation measure 1 and the applicant's proposed measures to minimize impacts from the development.

Proposed Potential Disturbance	**Activities/Cause of Disturbance**	**Proposed Measures to Minimize Impacts of Proposed Land Use**
Lights	• Roads • Residences	The wetland buffers contain vegetation that will block light between the substation yard and the wetlands.
Noise	• Construction • Residences • Vehicles	Noise from construction activities will be temporary during daylight hours. Machinery will be turned off when not actively in use. Noise from the operation of the substation was analyzed by Coffman Engineers. The Sound Analysis concluded that the noise levels produced by the transformers would be considerably below the County's noise limits. Occasional noise will occur from substation maintenance activities.
Toxic runoff	• Construction equipment • Roads	All runoff from the substation yard will be infiltrated, so there will not be any toxic runoff from the site. A spill containment system will fully contain any potential oil spills from the transformers. Runoff from frontage improvements will be fully dispersed.
Stormwater runoff	• Vegetation removal • Grading • Roads	Stormwater runoff from frontage improvements will be fully dispersed. Runoff from the substation yard will be infiltrated.
Change in Water regime	Impervious surfaces	Runoff from impervious surfaces will be fully dispersed or infiltrated, so no change in water regime is anticipated.
Pets/Human disturbance	• Future residents • Pets	No pets or residents will be associated with the proposed electrical substation.

3.2.2 Optional Mitigation Measure 2

Wetlands A and B are Category II wetlands with moderate scores for habitat functions. The application of optional mitigation measures 1 and 2 are required to reduce the buffers of these

wetlands to standard buffer widths. The requirements of optional mitigation measure 2, as described in SCC 30.62A.320(4)(b), are provided below in italics with applicant responses following in standard text.

(4)(b) Optional mitigation measure 2. For Category I, II, or III wetlands that score moderate or high for habitat (six points or more for the habitat functions), to qualify for the reduced buffer widths listed in subsection (1)(a) of this section Table 2b, a habitat corridor shall be preserved that meets the following criteria:

(i) except as allowed in subsection (4)(b)(ii) of this section, the habitat corridor shall connect the Category I or II wetland to any other wetland, fish and wildlife habitat conservation area, or buffer which is:
(A) on the same property or within the same development, including all phases proposed;

Wetlands A and B, Stream A, and their respective buffers create a connected habitat corridor on the subject property that connect two wetlands and a fish, a wildlife habitat conservation area, and their buffers.

(B) on adjacent property and already protected as Native Growth Protection Area or Critical Area Protection Area or other permanently protected open space suitable for wildlife habitat use, and either extends to the development property boundary or is connected by easement; or

The habitat corridor is provided on the subject property and is not dependent on adjacent properties or easements.

(C) on county, state, or federal land used for forestry, conservation, or passive recreation parks;

The habitat corridor is provided on the subject property and is not dependent on adjacent properties or easements.

(ii) the habitat corridor may connect to a stormwater detention facility on-site or on an adjacent site if it is designed to replicate a natural pond or wetland;

The on-site habitat corridor is provided on the subject property and is not dependent on adjacent properties, easements, or stormwater detention facilities.

(iii) the habitat corridor shall meet the following minimum physical characteristics:
(A) the corridor shall consist of a relatively undisturbed, vegetated corridor; and

The habitat corridor along Stream A, between Wetland A and Wetland B, is a relatively undisturbed, vegetated corridor.

(B) the corridor shall be a minimum width of 100 feet;

The habitat corridor within the buffer along Stream A, between Wetland A and Wetland B, is over 100 feet wide.

(iv) the department may approve alternative configurations through innovative development design under SCC 30.62A.350; and

The proposed habitat corridor meets the standard requirements of this section. No alternative configuration or innovative development design is proposed.

(v) the following activities are allowed within the habitat corridor:
(A) unpaved trails limited to single-file paths for foot traffic that require minimal maintenance and do not allow bicycles and motorized vehicles;

No formal trails are proposed within the habitat corridor. PUD facilities and/or security staff may walk through the corridor from time to time for maintenance and security purposes, but infrequently and without the need for an established trail. No bicycle or motorized vehicles will be used within the habitat corridor.

(B) hazardous tree management with the creation of snags and down logs favored over tree removal whenever possible;

If hazardous trees are identified within the habitat corridor, they will be turned into snags or downed logs and left on the site whenever possible.

(C) hand removal of invasive plant species;

If invasive plant species need removal in the future, the operation will be done with hand-operated equipment.

(D) restorative/enhancement planting with native species to increase species diversity or replace plants lost to disease or damage; and

No restoration or enhancement planting is proposed. If any becomes necessary, it will be composed of native species.

(E) planting with native species along outer edge of corridor to increase plant density and discourage disturbance or intrusion.

No planting along the outer edge of the corridor is proposed. If any becomes necessary, it will be composed of native species that will chosen to discourage disturbance.

3.3 BUFFER AVERAGING

The applicant is proposing to modify the standard buffers of Wetland A/Stream A and Wetland C through buffer width averaging. The requirements of buffer width averaging are provided in SCC 30.62A.320(1)(h)(i). These requirements are listed below in italics with applicant responses following in standard text.

(g)(i) The width of a buffer may be averaged, by reducing the width of a portion of the buffer and increasing the width of another portion of the same buffer, if all of the following requirements are met:

(A) averaging will not diminish the functions and values of the wetland(s), fish and wildlife habitat conservation area(s) or buffer(s);

The buffer averaging plan has been designed to maintain the functions provided by on-site buffer areas. The proposed buffer reduction and addition areas contain similar forested vegetation that is of equivalent quality and provides equivalent functions and values. The averaging plan will not diminish the functions and values of the wetlands, streams, or buffers.

(B) the total area of the buffer on the subject property may not be less than the area that would have been required if averaging had not occurred;

On the Wetland A/Wetland B/Stream A corridor, the proposed buffer averaging plan includes 4,482 square feet of buffer reduction (2,838+1,644) and 6,115 square feet of buffer addition (5,934+181). This will result in a net increase of 1,633 square feet of buffer. On Wetland C, the proposed buffer averaging plan includes 1,116 square feet of buffer reduction and 1,181 square feet of buffer addition, resulting in a net gain of 65 square feet of buffer area.

(C) the total area of buffer averaging shall be placed between the developed area and the wetland, lake, stream or marine water;

The buffer averaging areas are located between the substation and the Wetland A/Wetland B/Stream A corridor, and between the substation and Wetland C.

For the Wetland A/Wetland B/Stream A corridor, the buffer reduction and addition areas are located along the same side of the wetland/stream corridor, between the corridor and the proposed development, however, the larger portion of the buffer addition is located west of the reduction areas. The buffer addition area has been increased in size to compensate for the slight displacement.

(D) no part of the width of the buffer may be less than 75 percent of the standard required width;

The narrowest proposed buffer widths on Wetlands A and C is 75 percent of the standard required width, so the buffer will not be less than 75 percent of the standard required width;

(E) averaging of a buffer shall not be allowed where the reduction extends into associated sloping areas of 33 percent or greater; and

Buffer averaging is not proposed in areas with slopes of 33 percent or greater; and

(F) buffers on isolated - wetlands or lakes located in close proximity to other aquatic critical areas shall be connected by corridors of native vegetation where possible using the buffer averaging provisions of this section and the following criteria:…

There are no isolated wetlands or lakes in close proximity to other aquatic critical areas on this site. Wetlands A and B are connected by Stream A and Wetland C is nearly 500 feet away from Wetland B, so it is not in close proximity.

3.4 BUFFER IMPACT AND MITIGATION

The proposed southern access driveway to the substation requires a small (34 sq. ft.) permanent impact to the buffer on Wetland C to provide a paved radius between the driveway and Echo Lake

Road. This area is too close to the wetland to apply buffer averaging and cannot be relocated, so it is proposed as a permanent buffer impact. Unavoidable buffer impacts from new transportation structures are allowed under SCC 30.62A.320(2)(a). SCC 30.62A.320(3)(a) requires the buffer mitigation ratios in Table 3 to compensate for buffer impacts based on the type of vegetation present and the type of mitigation provided. The buffer impact area is composed of non-woody, emergent vegetation, which requires 1.5:1 buffer creation or 3:1 buffer enhancement. The applicant is proposing 117 square feet of buffer creation that is dominated by non-woody vegetation. This proposal equates to a 3.4:1 ratio, which exceeds the 1.5:1 requirement.

4.0 BUFFER FUNCTIONS AND VALUES ASSESSMENT

The methodology for this functions and values assessment is based on professional opinion developed through past field analyses and interpretation. This assessment pertains specifically to the on-site wetlands but is typical for assessments of similar systems common to Western Washington.

Functions and Values Components
Vegetated wetland buffers obstruct water flow, thereby decreasing water velocity, allowing infiltration into the soil, and reducing soil erosion potential. Vegetated buffers also help to moderate water level fluctuations. Buffer vegetation impedes the flow of runoff, increases the humus content of soil (greater absorption capacity), intercepts rainfall, and preserves soil composition as intense rainfall hits the ground. Many arthropods, birds, mammals, fish, reptiles and amphibians utilize wetland buffer areas for some part of their life cycle needs. Vegetated buffers provide opportunities for perching, refuge, food sources, and habitat. Forested buffers also contribute large, woody material as important habitat including nesting/rearing/hiding/cover and provides habitat complexity.

4.1 WATER QUALITY

Vegetated buffers obstruct water flow, thereby decreasing water velocity, allowing infiltration into the soil, and reducing soil erosion potential. A healthy buffer also assimilates pollutants carried from stormwater. The on-site buffer areas proposed to be averaged were chosen based on their positions in the landscape, between the development and the on-site critical areas. The buffer addition areas are similar or more heavily vegetated with native vegetation than the areas proposed to be reduced and will help filter pollutants and attenuate flow from stormwater carried to the critical areas from the new development.

4.2 HYDROLOGIC FUNCTIONS

Wetland buffers help to moderate water level fluctuations by attenuating peak flows during heavy rain events. The buffer areas proposed for reduction consist primarily of lower value, non-mature forest and previously cleared and graded grassland, both of which offer limited hydrologic function. In contrast, the areas proposed for buffer addition exhibit similar baseline characteristics but also include native forest and scrub-shrub vegetation, which contribute more significantly to water absorption, soil decompaction, and flood attenuation, thereby enhancing overall hydrologic performance.

4.3 Wildlife Habitat

Many arthropods, birds, mammals, fish, reptiles, and amphibians rely on wetland and stream buffers to meet various life history needs. Their presence in these areas is largely influenced by the valuable edge habitat located at the interface between wetland and upland zones. The areas proposed for buffer addition contain vegetation and wildlife habitat of similar or greater integrity and functional value compared to those proposed for reduction.

4.4 Conclusion

Through this buffer averaging plan, the functions and values of the onsite wetlands, streams, and their buffers will be maintained or improved. The proposed buffer addition areas are of healthier vegetation composition than the buffer reduction areas and provide greater values to filter pollutants, promote infiltration, reduce runoff, and provide wildlife with areas to forage and shelter.

5.0 Use of This Report

This report is supplied to PUD No. 1 of Snohomish County as a means of determining wetland and stream conditions on and near the project site.

This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions. The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.



Bradley A. Schlottman
Associate Ecologist



John Laufenberg, PWS
Principal Ecologist

6.0 REFERENCES

Anderson, P.S., Meyer, S., Olson, P., and E. Stockdale. 2016. *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State.* Washington State Department of Ecology. Publication #16-06-029.

Brinson, M.M. 1993. *A Hydrogeomorphic Classification for Wetlands.* Technical Report WRPDE-4. US Army Engineers Waterways Experiment Station, Vicksburg, MS.

Cowardin, et al., 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior. FWS/OBS-79/31. December 1979.

Hruby, T. & Yahnke, A. 2023. *Washington State Wetland Rating System for Western Washington: 2014 Update (Version 2)*. Publication #23-06-009. Washington State Department of Ecology. July 2023.

Munsell Color. 2012. *Munsell Soil Color Book.* Munsell Color, Grand Rapids, MI.

Natural Resources Conservation Service (NRCS). 2025. *Web Soil Survey*. United States Department of Agriculture. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Snohomish, County of. 2025. 30.62A Wetlands and Fish & Wildlife Habitat Conservation Areas. Title 30 Environmentally Critical Areas. Title 30 Unified Development Code.

Snohomish, County of. 2026. *PDS Map Portal*. https://gisapp.snoco.org/web/?app=38e4452386ba49798f77dccedcc3be4b

U.S. Army Corps of Engineers. 2023. *2022 National Wetland Plant List*, version 3.6. U.S. Army Engineer Research and Development Center, Vicksburg, MS. http://wetland-plants.usace.army.mil/

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).* Environmental Laboratory, Vicksburg, MS. Publication # ERDC/EL TR-10-3.

U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetland Delineation Manual.* Technical Report Y-87-1. Environmental Laboratory, Vicksburg, MS.

U.S. Fish & Wildlife Service. 2025. *National Wetlands Inventory (NWI)* online mapper. http://www.fws.gov/wetlands/Data/Mapper.html.

WA Department of Fish & Wildlife. 2025a. *Priority Habitat and Species (PHS)* interactive map. http://apps.wdfw.wa.gov/phsontheweb/

WA Department of Fish & Wildlife. 2025b. *SalmonScape* online mapping application. http://apps.wdfw.wa.gov/salmonscape/map.html.

WA Department of Natural Resources. 2025. *Forest Practices Application Mapping Tool.* https://fpamt.dnr.wa.gov/default.aspx

Appendix A

Wetland Determination Data Forms

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

Project/Site: Paradise Substation City/County: SnoCo Sampling Date: 1-28-2025

Applicant/Owner: Snohomish PUD No. 1 State: WA Sampling Point: S1

Investigator(s): BAS, MK Section, Township, Range: S29 T27N R06E

Landform (hillslope, terrace, etc.): Ravine Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A Lat: 47.79296 Long: -122.06099 Datum: WGS84

Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8 percent slopes NWI classification: None

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 ☑ No ☐ Hydric Soil Present? Yes ☑ No ☐ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐

Remarks:

Failed silt fence located upslope of site. Soil contaminated with gravel/silt from past construction activities.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 sm)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	90	Y	FAC
2. Populus balsamifera	10	N	FAC
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 sm)			
1. Rubus spectabilis	30	Y	FAC
2.			
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 1 sm)			
1. Tolmiea menziesii	20	Y	FAC
2. Ranunculus repens	20	Y	FAC
3. Carex sp.	20	Y	OBL
4. Geranium robertianum	10	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 3 sm)			
1. None	NA	NA	NA
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 = 0
FACW species	x 2 = 0
FAC species	x 3 = 0
FACU species	x 4 = 0
UPL species	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					SiL+ Gravel	
3 - 15	10YR 2/2	95	10YR 4/6	5	C	M	SiL+ Gravel	
15 - 18	10YR 3/2	90	10YR 4/6	10	C	M	SiL+ Gravel	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☑ No ☐ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): 4

Wetland Hydrology Present? Yes ☑ No ☐

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

Remarks:

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

Project/Site: Paradise Substation City/County: SnoCo Sampling Date: 1-28-2025

Applicant/Owner: Snohomish PUD No. 1 State: WA Sampling Point: S2

Investigator(s): BAS, MK Section, Township, Range: S29 T27N R06E

Landform (hillslope, terrace, etc.): Ravine Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): A Lat: 47.792960 Long: -122.06099 Datum: WGS84

Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8 percent slopes NWI classification: None

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 ☐ No ☑	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 sm)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	80	Y	FAC
2. Populus balsamifera	5	N	FAC
3.			
4.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 sm)			
1. Rubus spectabilis	40	Y	FAC
2. Tsuga heterophylla	40	Y	FACU
3.			
4.			
5.			
	80	= Total Cover	
Herb Stratum (Plot size: 1 sm)			
1. Polystichum munitum	50	Y	FACU
2. Rubus ursinus	10	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 3 sm)			
1. None	NA	NA	NA
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	150	x 3 =	450
FACU species	150	x 4 =	600
UPL species		x 5 =	0
Column Totals:	300 (A)		1050 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks:

SOIL

Sampling Point: S2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 3/2	100					SL + cobble	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

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

Project/Site: Paradise Substation City/County: SnoCo Sampling Date: 1-28-2025

Applicant/Owner: Snohomish PUD No. 1 State: WA Sampling Point: S3

Investigator(s): BAS, MK Section, Township, Range: S29 T27N R06E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): A Lat: 47.792960 Long: -122.06099 Datum: WGS84

Soil Map Unit Name: McKenna gravelly silt loam, 0 to 8 percent slopes NWI classification: None

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 ☑ No ☐ Hydric Soil Present? Yes ☑ No ☐ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 sm)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	100	Y	FAC
2.			
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 sm)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 1 sm)			
1. Carex sp.	5	N	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 3 sm)			
1. None	NA	NA	NA
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 = 0
FACW species	x 2 = 0
FAC species	x 3 = 0
FACU species	x 4 = 0
UPL species	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					SL	
12 - 18	10YR 4/2	95	10YR 4/6	5	C	M	SiL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☑ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches):

Water Table Present? Yes ☑ No ☐ Depth (inches): 1

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☑ No ☐

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

Remarks:

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

Project/Site: Paradise Substation City/County: SnoCo Sampling Date: 1-28-2025

Applicant/Owner: Snohomish PUD No. 1 State: WA Sampling Point: S4

Investigator(s): BAS, MK Section, Township, Range: S29 T27N R06E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): A Lat: 47.792960 Long: -122.06099 Datum: WGS84

Soil Map Unit Name: McKenna gravelly silt loam, 0 to 8 percent slopes NWI classification: None

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 ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 sm)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga heterophylla	30	Y	FACU
2. Acer macrophyllum	25	Y	FACU
3. Thuja plicata	20	Y	FAC
4.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 sm)			
1. Acer circinatum	40	Y	FAC
2. Rubus spectabilis	15	Y	FAC
3. Rubus armeniacus	10	N	FAC
4. Gaultheria shallon	10	N	FACU
5.			
	75	= Total Cover	
Herb Stratum (Plot size: 1 sm)			
1. Polystichum munitum	20	Y	FACU
2. Tolmiea menziesii	10	Y	FAC
3. Cardamine hirsuta	10	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 3 sm)			
1. None	NA	NA	NA
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

moss and duff covering ~ 50% of ground.

SOIL

Sampling Point: S4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 3/2	100					SL + cobble	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

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

Project/Site: Paradise Substation City/County: SnoCo Sampling Date: 1-28-2025

Applicant/Owner: Snohomish PUD No. 1 State: WA Sampling Point: S5

Investigator(s): BAS, MK Section, Township, Range: S29 T27N R06E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): A Lat: 47.792960 Long: -122.06099 Datum: WGS84

Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None

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 ☑ No ☐ Hydric Soil Present? Yes ☑ No ☐ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐

Remarks:

Vegetation is mowed

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 sm)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	20	Y	FAC
2.			
3.			
4.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 sm)			
1. Rubus armeniacus	5	Y	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 1 sm)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 3 sm)			
1. None	NA	NA	NA
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 = 0
FACW species	x 2 = 0
FAC species	x 3 = 0
FACU species	x 4 = 0
UPL species	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/2	100					SiL	
12 - 18	10YR 2/1	100					SiL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Although these soils do not meet a specific hydric soil indicator, they appear to be hydric based on the low chroma and high organic content throughout the profile.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches):

Water Table Present? Yes ☑ No ☐ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): 12

Wetland Hydrology Present? Yes ☑ No ☐

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

Remarks:

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

Project/Site: Paradise Substation City/County: SnoCo Sampling Date: 1-28-2025

Applicant/Owner: Snohomish PUD No. 1 State: WA Sampling Point: S6

Investigator(s): BAS, MK Section, Township, Range: S29 T27N R06E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): A Lat: 47.792960 Long: -122.06099 Datum: WGS84

Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None

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 ☐ No ☑	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 sm)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	10	Y	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 sm)			
1. Rubus armeniacus	30	Y	FAC
2.			
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 1 sm)			
1. Lapsana communis	60	Y	FACU
2. Polystichum munitum	20	Y	FACU
3. Phalaris arundinacea	20	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 3 sm)			
1. None	NA	NA	NA
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	200	x 3 =	600
FACU species	80	x 4 =	320
UPL species		x 5 =	0
Column Totals:	300 (A)		960 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks:

SOIL

Sampling Point: S6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 17	10YR 3/4	100					L	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

Appendix B

Wetland Rating Forms and Figures

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 1/28/2025

Rated by BAS,MK Trained by Ecology? ✓ Yes ___No Date of training 3/2015

HGM Class used for rating Depressional Wetland has multiple HGM classes? ✓ Y ____N

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

Source of base aerial photo/map SnoCo

OVERALL WETLAND CATEGORY II (based on functions ✓ or special characteristics__)

1. Category of wetland based on FUNCTIONS

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

___✓___**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	[M]	L	H	M	[L]	H	M	[L]	
Landscape Potential	[H]	M	L	[H]	M	L	H	[M]	L	
Value	[H]	M	L	[H]	M	L	[H]	M	L	TOTAL
Score Based on Ratings	**8**			**7**			**6**			**21**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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 A_____

HGM Classification of Wetlands in Western Washington

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

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

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

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

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

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

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

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

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

Wetland name or number A_____

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

NO – go to 7 **YES** – The wetland class is **Depressional**

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

NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number A_____

DEPRESSIONAL AND FLATS WETLANDS

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

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

D 1.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3
- ☑ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2
- ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1
- ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

2

D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 [No = 0]

0

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

- ☑ Wetland has persistent, ungrazed plants > 95% of area points = 5
- ☐ Wetland has persistent, ungrazed plants > ½ of area points = 3
- ☐ Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1
- ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0

5

D 1.4. Characteristics of seasonal ponding or inundation:

This is the area that is ponded for at least 2 months. See description in manual.

- ☐ Area seasonally ponded is > ½ total area of wetland points = 4
- ☐ Area seasonally ponded is ≥ ¼ total area of wetland points = 2
- ☑ Area seasonally ponded is < ¼ total area of wetland points = 0

0

Total for D 1 — Add the points in the boxes above: **7**

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

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

D 2.1. Does the wetland unit receive stormwater discharges?	[Yes = 1] No = 0	**1**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	[Yes = 1] No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland?	[Yes = 1] No = 0	**1**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____	Yes = 1 [No = 0]	**0**
Total for D 2	Add the points in the boxes above	**3**

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

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

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	**0**
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	**1**
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.)	Yes = 2 No = 0	**2**
Total for D 3	Add the points in the boxes above	**3**

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

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS

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

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

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

- ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) — points = 4
- ☑ Wetland has an intermittently flowing stream/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

2

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

- ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet — points = 7
- ☐ 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

3

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 area of the wetland unit itself.

- ☐ The area of the basin is less than 10 times the area of the unit — points = 5
- ☐ 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

0

Total for D 4	Add the points in the boxes above	**5**

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

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

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	**1**
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	**1**
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	**1**
Total for D 5	Add the points in the boxes above	**3**

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

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

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

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- ☑ • Flooding occurs in a sub-basin that is immediately downgradient of unit. — points = 2
- ☐ • Surface flooding problems are in a sub-basin farther downgradient. — 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

2

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 — **0**

Total for D 6	Add the points in the boxes above	**2**

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

Wetland name or number A_____

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

____	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/groundcover) 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 if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 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	
✓	Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____	**Lake Fringe wetland**	**2 points**
____	**Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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, Canada thistle**

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

1

H 1.4. Interspersion of habitats

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



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

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



0

Wetland name or number A

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

Rating of Site Potential If score is: **__15-18 = H ___7-14 = M ✓ 0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 12 + [(% moderate and low intensity land uses)/2] 14 = 26 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☑ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☐ < 10% of 1 km Polygon points = 0	**2**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 13 + [(% moderate and low intensity land uses)/2] 34 = 46 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ☑ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☑ ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**3**

Rating of Landscape Potential If score is: **__4-6 = H ✓ 1-3 = M ___< 1 = L** *Record the rating on the first page*

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

Rating of Value If score is: **✓ 2 = H ___1 = M ___0 = L** *Record the rating on the first page*

Wetland name or number A

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **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.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☑ **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. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☐ **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) diameter at breast height (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.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number A

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☑ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **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.

☐ **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.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number A_____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
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? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ 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. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes **= Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No **= Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No **= Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number A

SC 4.0. Forested Wetlands — **Cat. I**

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.***

☐ **Old-growth forests** (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.

☐ **Mature forests** (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).

Yes = **Category I** | No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons — **Cat. I**

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ 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

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes – Go to **SC 5.1** | No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions? — **Cat. II**

☐ 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 in H 1.5 in the manual).

☐ 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.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

Yes = **Category I** No = **Category II**

SC 6.0. Interdunal Wetlands — **Cat I**

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW.

Yes – Go to **SC 6.1** | No = **Not an interdunal wetland for rating** — **Cat. II**

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)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? — **Cat. III**

Yes = **Category II** No – Go to **SC 6.3**

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? — **Cat. IV**

Yes = **Category III** No = **Category IV**

Category of wetland based on Special Characteristics — **N/A**

If you answered No for all types, enter "Not Applicable" on Summary Form

PARADISE SUBSTATION
WETLAND RATING FIGURE 1 - WETLAND A



Scale 1" = 100'

0 50 100 150 200

LEGEND

- FORESTED VEGETATION
- SATURATED ONLY
- SEASONALLY FLOODED
- 150' FROM WL BOUNDARY
- INTERMITTENT STREAM

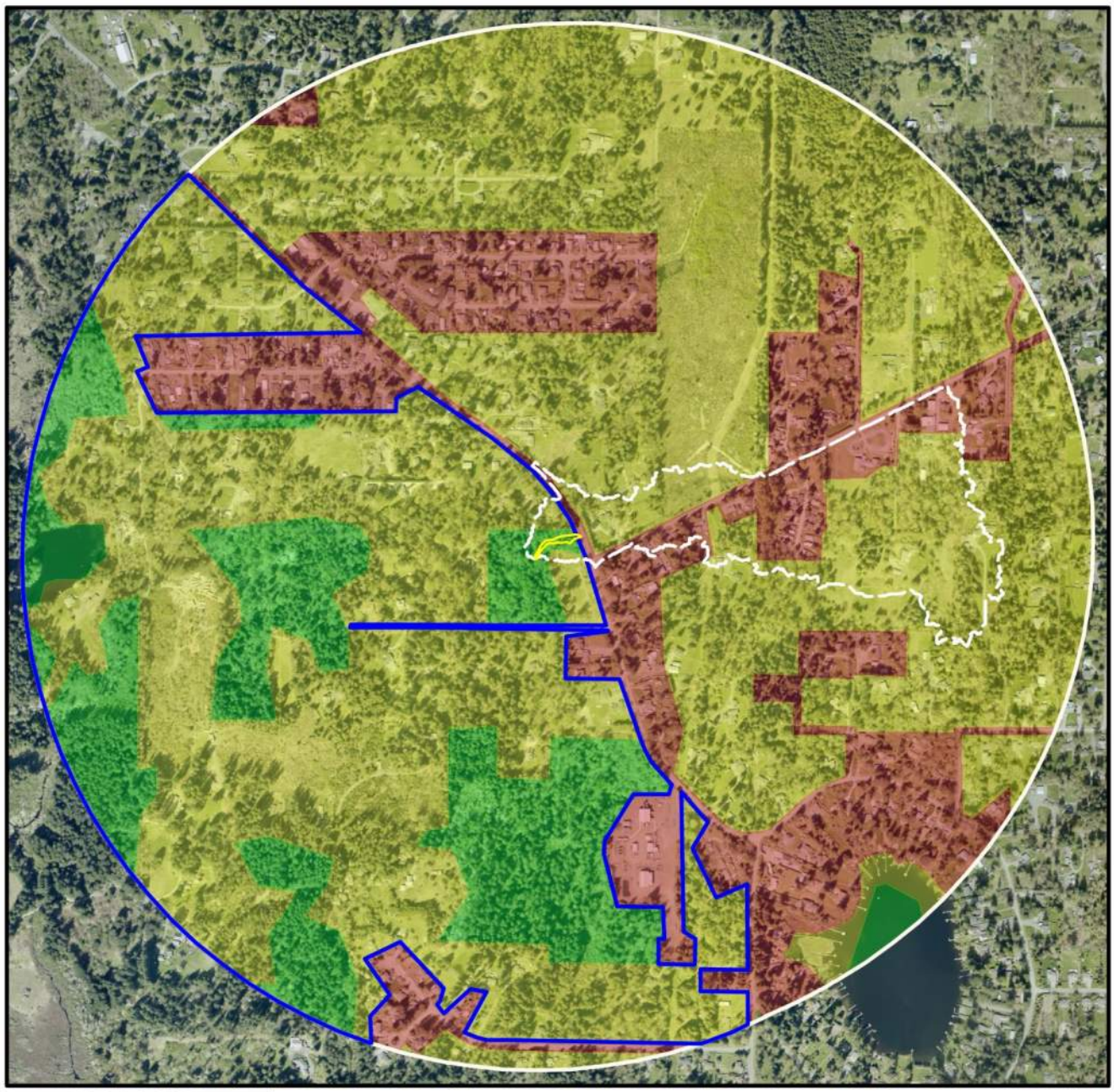
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Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland A

Figure A-1
WRI Job # 25023
Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 2 - WETLAND A



LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 230:1

Scale 1" = 1,000'

0 500 1,000 1,500 2,000

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WETLAND RATING

Wetland A

Figure A-2

WRI Job # 25023

Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 3 - WETLAND A



LEGEND

WETLAND LOCATION

AQUATIC RESOURCES ON THE 303(d) LIST

Scale 1" = 2,000'

0 1,000 2,000 3,000 4,000

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WETLAND RATING

Wetland A

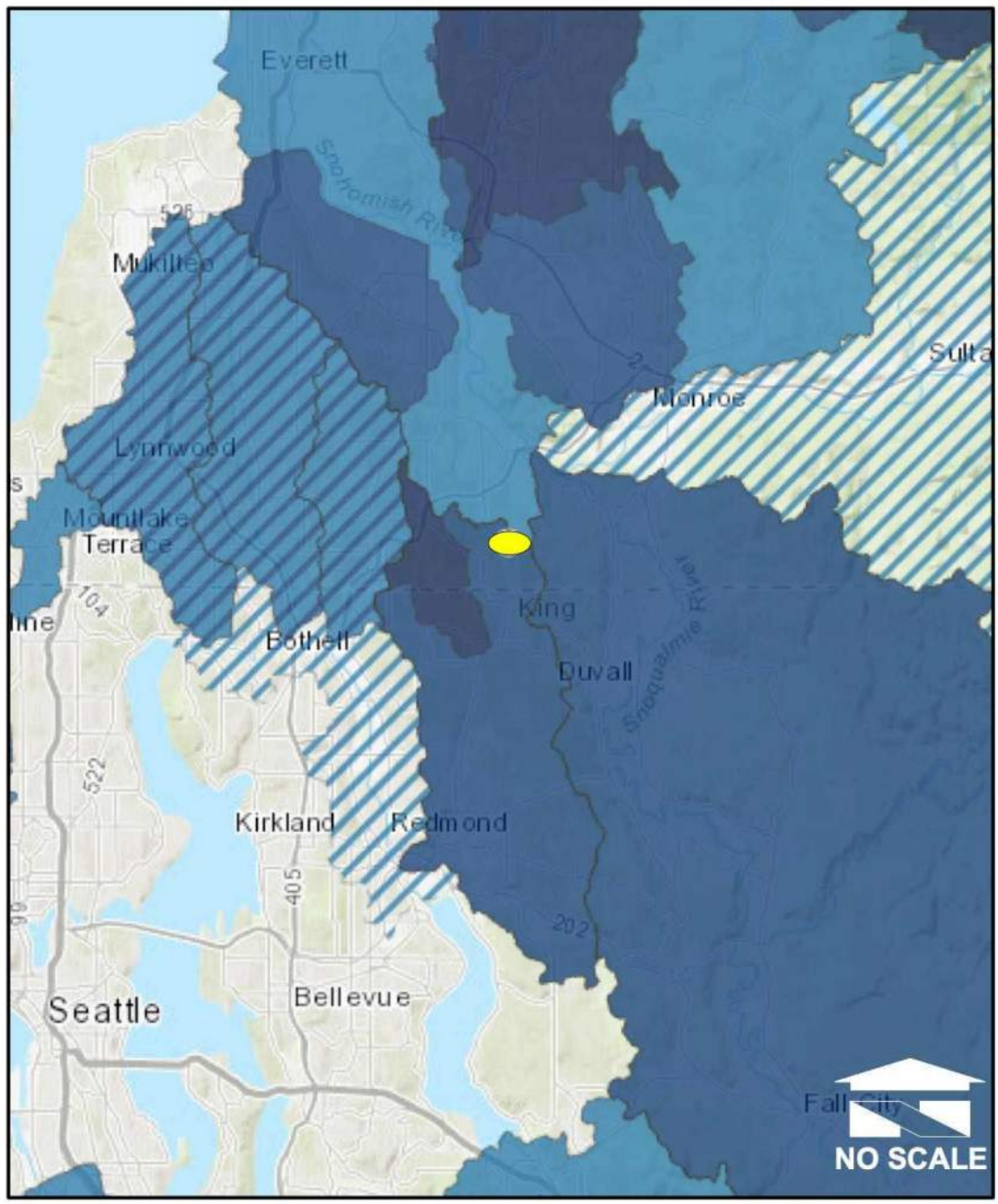
Figure A-3

WRI Job # 25023

Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 4 - WETLAND A



LEGEND

- WETLAND LOCATION
- ACTIVE TMDL (OVERLAPPING TMDL'S ARE DARKER)
- TMDL IN DEVELOPMENT

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Email: mailbox@wetlandresources.com

WETLAND RATING

Wetland A

Figure A-4

WRI Job # 25023

Rated by: BAS

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 1/28/2025

Rated by BAS,MK Trained by Ecology? ✓ Yes ___No Date of training 03/2015

HGM Class used for rating Depressional Wetland has multiple HGM classes? ✓ Y ____N

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

Source of base aerial photo/map SnoCo

OVERALL WETLAND CATEGORY II (based on functions ✓ or special characteristics__)

1. Category of wetland based on FUNCTIONS

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

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

_____**Category III** – Total score = 16 - 19

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	[M]	L	H	M	[L]	H	M	[L]	
Landscape Potential	[H]	M	L	H	[M]	L	[H]	M	L	
Value	[H]	M	L	[H]	M	L	[H]	M	L	TOTAL
Score Based on Ratings	**8**			**6**			**7**			**21**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number B

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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 B

HGM Classification of Wetlands in Western Washington

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

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

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

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

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

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

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

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

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

Wetland name or number B

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

NO – go to 7 **YES** – The wetland class is **Depressional**

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

NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS

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

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

D 1.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3
- ☑ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2
- ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1
- ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

2

D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 [No = 0]

0

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

- ☑ Wetland has persistent, ungrazed plants > 95% of area points = 5
- ☐ Wetland has persistent, ungrazed plants > ½ of area points = 3
- ☐ Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1
- ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0

5

D 1.4. Characteristics of seasonal ponding or inundation:

This is the area that is ponded for at least 2 months. See description in manual.

- ☐ Area seasonally ponded is > ½ total area of wetland points = 4
- ☐ Area seasonally ponded is ≥ ¼ total area of wetland points = 2
- ☑ Area seasonally ponded is < ¼ total area of wetland points = 0

0

Total for D 1 — Add the points in the boxes above: **7**

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

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

D 2.1. Does the wetland unit receive stormwater discharges?	[Yes = 1] No = 0	**1**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	[Yes = 1] No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland?	[Yes = 1] No = 0	**1**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____	Yes = 1 [No = 0]	**0**
Total for D 2	Add the points in the boxes above	**3**

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

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

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	**0**
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	**1**
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.)	Yes = 2 No = 0	**2**
Total for D 3	Add the points in the boxes above	**3**

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

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS

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

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

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

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

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

☐	Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	**3**
☐	Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
☑	Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
☐	The wetland is a "headwater" wetland	points = 3	
☐	Wetland is flat but has small depressions on the surface that trap water	points = 1	
☐	Marks of ponding less than 0.5 ft (6 in)	points = 0	

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

☐	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	

Total for D 4	Add the points in the boxes above	**5**

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

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

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	**1**
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	**1**
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	**0**
Total for D 5	Add the points in the boxes above	**2**

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

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

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

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

☑	• Flooding occurs in a sub-basin that is immediately downgradient of unit.	points = 2	**2**
☐	• Surface flooding problems are in a sub-basin farther downgradient.	points = 1	
☐	• Flooding from groundwater is an issue in the sub-basin.	points = 1	
☐	• The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____	points = 0	
☐	• There are no problems with flooding downstream of the wetland.	points = 0	

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	**0**
Total for D 6	Add the points in the boxes above	**2**

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

Wetland name or number B

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

____ Aquatic bed	4 structures or more: points = 4	**1**
____ 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/groundcover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____ Permanently flooded or inundated	4 or more types present: points = 3	**1**
____ 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		
✓ Intermittently or seasonally flowing stream in, or adjacent to, the wetland		
____ **Lake Fringe wetland**	**2 points**	
____ **Freshwater tidal wetland**	**2 points**	

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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, Canada thistle**

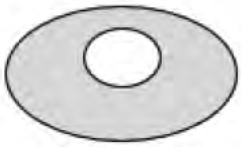
If you counted: > 19 species	points = 2	**1**
[5 - 19 species]	[points = 1]	
< 5 species	points = 0	

H 1.4. Interspersion of habitats

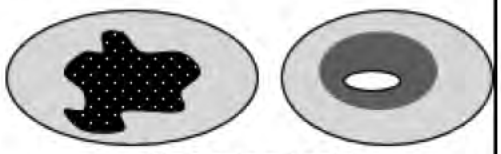
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points



Low = 1 point



Moderate = 2 points

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



0

Wetland name or number B

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ✓ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ✓ Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ✓ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**3**
Total for H 1 — Add the points in the boxes above	**6**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 17 + [(% moderate and low intensity land uses)/2] 17 = 34 % Total accessible habitat is: ☑ > 1/3 (33.3%) of 1 km Polygon — points = 3 ☐ 20-33% of 1 km Polygon — points = 2 ☐ 10-19% of 1 km Polygon — points = 1 ☐ < 10% of 1 km Polygon — points = 0	**3**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 18 + [(% moderate and low intensity land uses)/2] 31 = 49 % ☐ Total habitat > 50% of Polygon — points = 3 ☐ Total habitat 10-50% and in 1-3 patches — points = 2 ☑ Total habitat 10-50% and > 3 patches — points = 1 ☐ Total habitat < 10% of 1 km Polygon — points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use — points = (- 2) ☑ ≤ 50% of 1 km Polygon is high intensity — points = 0	**0**
Total for H 2 — Add the points in the boxes above	**4**

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

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

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

Wetland name or number B

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **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.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☑ **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. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☐ **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) diameter at breast height (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.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number B

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☑ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **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.

☐ **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.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
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? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ 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. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes **= Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No **= Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No **= Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number B

SC 4.0. Forested Wetlands — **Cat. I**

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.***

☐ **Old-growth forests** (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.

☐ **Mature forests** (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).

Yes = **Category I** | No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons — **Cat. I**

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ 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

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes – Go to **SC 5.1** | No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions? — **Cat. II**

☐ 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 in H 1.5 in the manual).

☐ 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.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

Yes = **Category I** No = **Category II**

SC 6.0. Interdunal Wetlands — **Cat I**

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW.

Yes – Go to **SC 6.1** | No = **Not an interdunal wetland for rating** — **Cat. II**

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)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? — **Cat. III**

Yes = **Category II** No – Go to **SC 6.3**

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? — **Cat. IV**

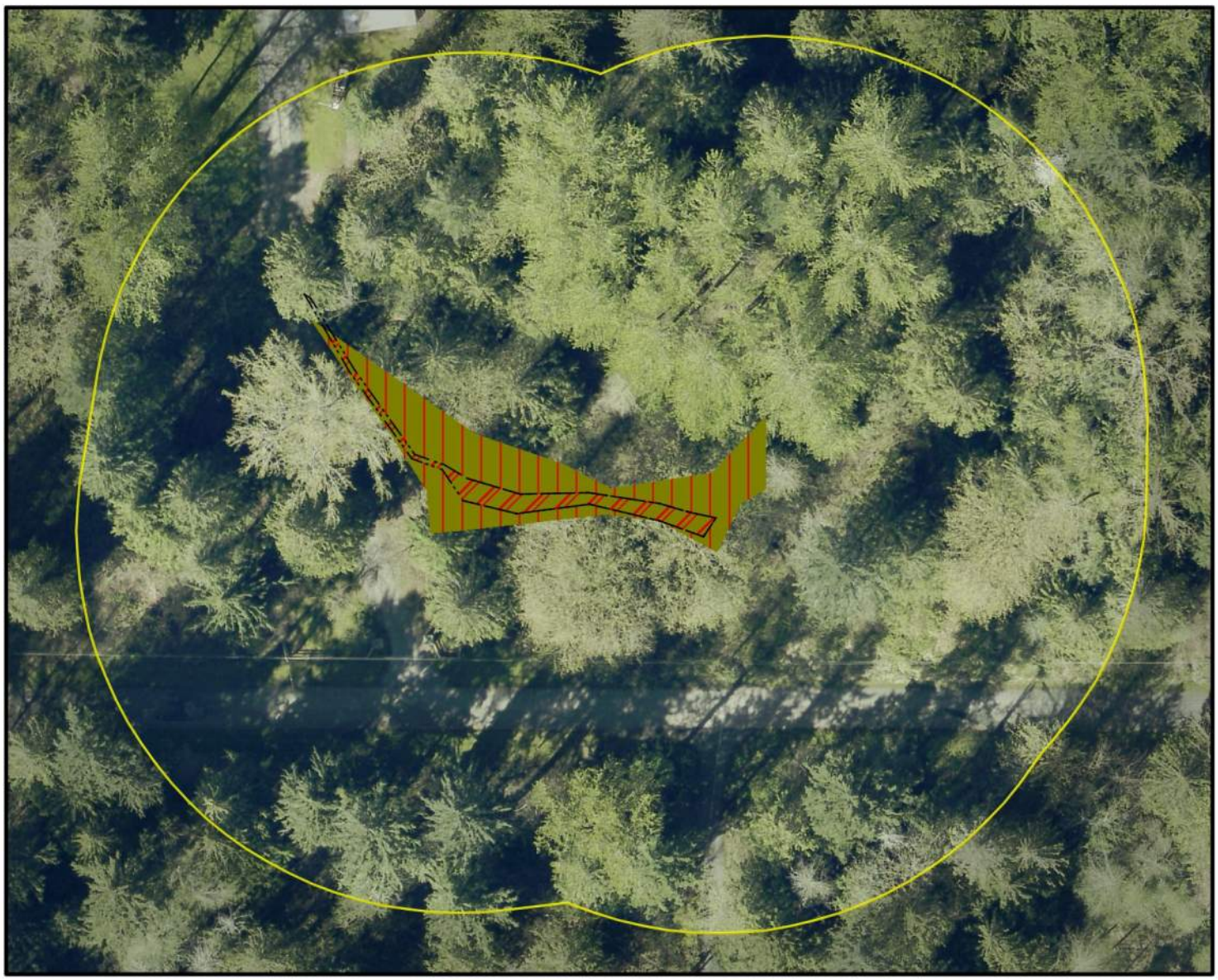
Yes = **Category III** No = **Category IV**

Category of wetland based on Special Characteristics — **N/A**

If you answered No for all types, enter "Not Applicable" on Summary Form

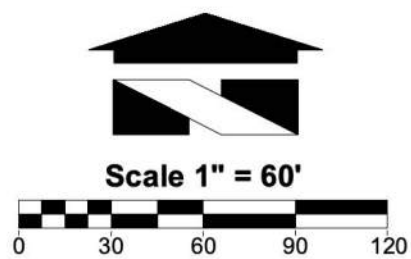
PARADISE SUBSTATION

WETLAND RATING FIGURE 1 - WETLAND B



LEGEND

- FORESTED VEGETATION
- SATURATED ONLY
- SEASONALLY FLOODED
- 150' FROM WL BOUNDARY
- INTERMITTENT STREAM



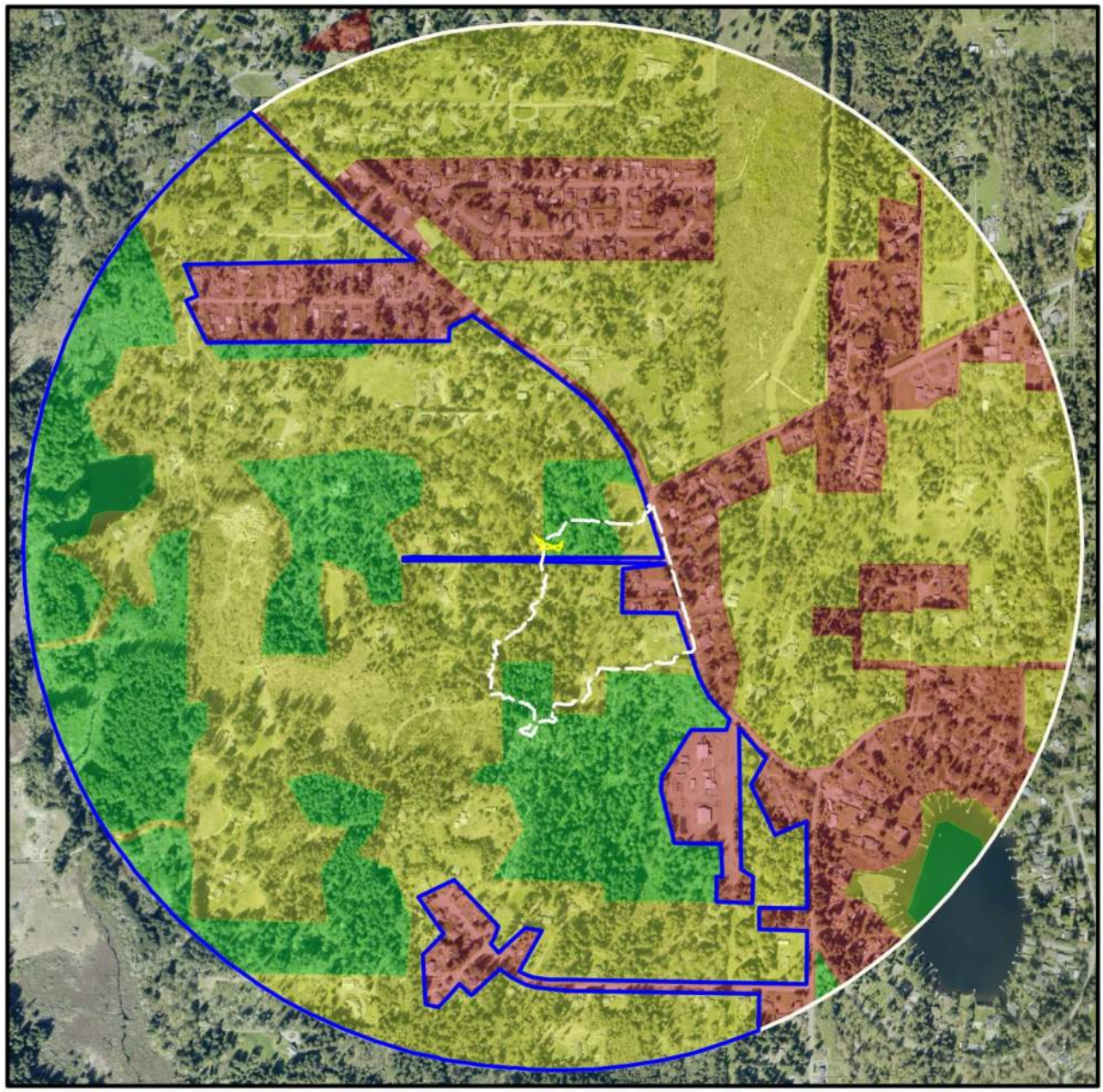
Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland B

Figure B-1
WRI Job # 25023
Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 2 - WETLAND B



LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 368:1

Scale 1" = 1,000'

0 500 1,000 1,500 2,000

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WETLAND RATING

Wetland B

Figure B-2

WRI Job # 25023

Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 3 - WETLAND B



LEGEND

WETLAND LOCATION

AQUATIC RESOURCES ON THE 303(d) LIST

Scale 1" = 2,000'

0 1,000 2,000 3,000 4,000

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WETLAND RATING

Wetland B

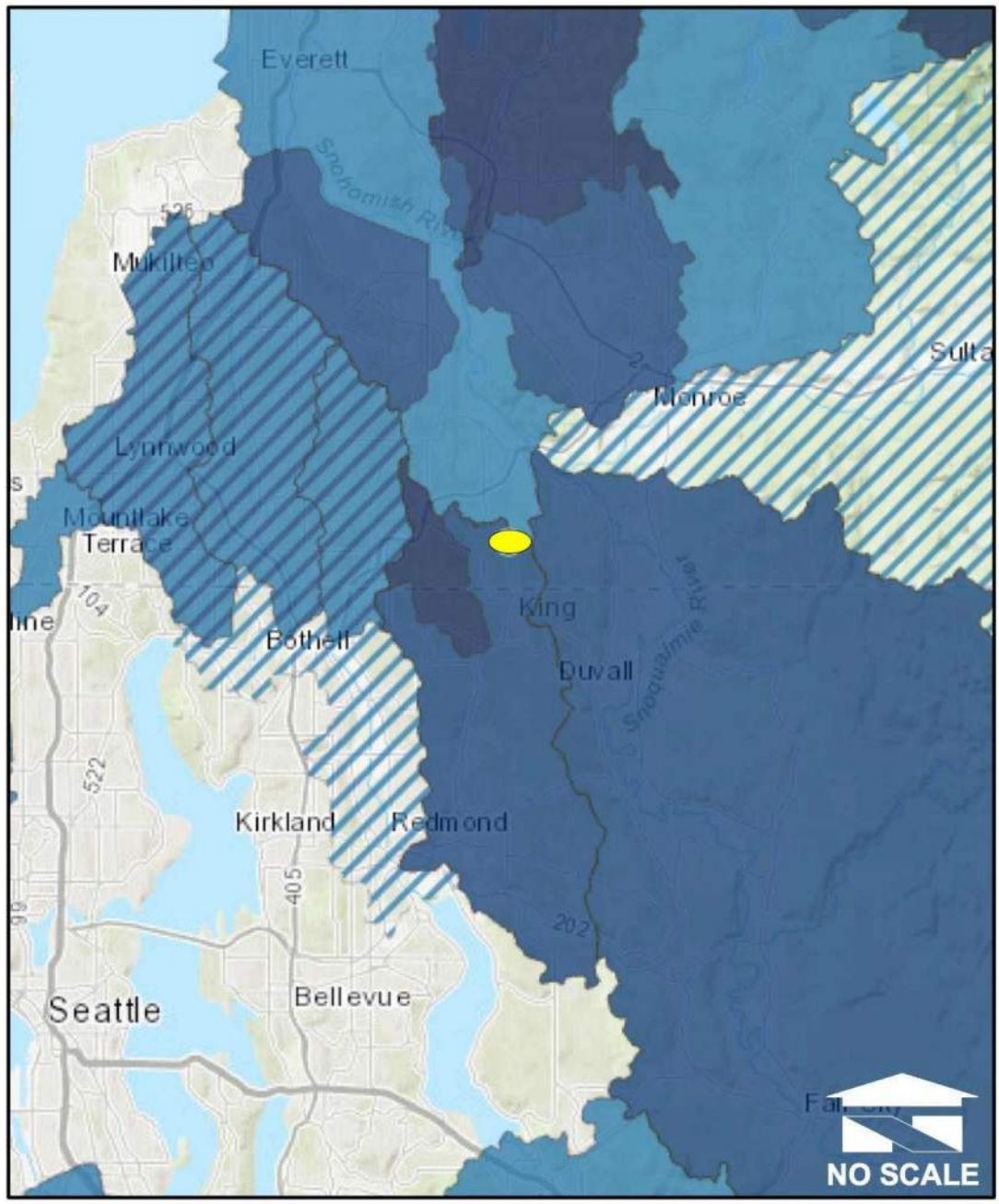
Figure B-3

WRI Job # 25023

Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 4 - WETLAND B



LEGEND

- WETLAND LOCATION
- ACTIVE TMDL (OVERLAPPING TMDL'S ARE DARKER)
- TMDL IN DEVELOPMENT

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WETLAND RATING

Wetland B

Figure B-4

WRI Job # 25023

Rated by: BAS

Wetland name or number C

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland C Date of site visit: 1/28/2025

Rated by BAS,MK Trained by Ecology? ✓ Yes ___No Date of training 03/2015

HGM Class used for rating Slope Wetland has multiple HGM classes? ___Y ✓ N

NOTE: Form is not complete without the required figures (figures can be combined).
Source of base aerial photo/map SnoCo

OVERALL WETLAND CATEGORY III (based on functions ✓ or special characteristics__)

1. Category of wetland based on FUNCTIONS

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

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

___✓___**Category III** – Total score = 16 - 19

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	M	[L]	H	M	[L]	H	M	[L]	
Landscape Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Value	[H]	M	L	[H]	M	L	H	[M]	L	TOTAL
Score Based on Ratings	**6**			**6**			**5**			**17**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number C

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	5
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	5
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	4

Wetland name or number C_____

HGM Classification of Wetlands in Western Washington

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

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

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

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

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

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

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

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   _ ✔ _The wetland is on a slope (slope can be very gradual),
   _ ✔ _The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   _ ✔ _The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

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

Wetland name or number C_____

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number C

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (A 1% slope has a 1 ft vertical change in elevation for every 100 ft of horizontal distance.) ☐ 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	**0**
S 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 [No = 0]	**0**
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed, and plants are higher than 6 in. ☐ Dense, uncut, herbaceous plants > 90% of the wetland area — points = 6 ☐ 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	**2**
Total for S 1 — Add the points in the boxes above	**2**

Rating of Site Potential If score is: **__12 = H ___6-11 = M ✓ 0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? [Yes = 1] No = 0	**1**
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ Yes = 1 [No = 0]	**0**
Total for S 2 — Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: **✓ 1-2 = M ___0 = L** *Record the rating on the first page*

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

Rating of Value If score is: **✓ 2-4 = H ___1 = M ___0 = L** *Record the rating on the first page*

Wetland name or number C

SLOPE WETLANDS

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

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows. ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland — points = 1 ☑ All other conditions — points = 0	**0**

Rating of Site Potential If score is: __1 = M ✓0 = L *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	**1**

Rating of Landscape Potential If score is: ✓1 = M ___0 = L *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☑ The sub-basin immediately downgradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) — points = 2 ☐ Surface flooding problems are in a sub-basin farther downgradient — points = 1 ☐ No flooding problems anywhere downstream — points = 0	**2**
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	**0**
Total for S 6 — Add the points in the boxes above	**2**

Rating of Value If score is: ✓2-4 = H ___1 = M ___0 = L *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number C

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 if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____ Aquatic bed	4 structures or more: points = 4	**1**
____ 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/groundcover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____ Permanently flooded or inundated	4 or more types present: points = 3	**0**
✓ 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

____ Intermittently or seasonally flowing stream in, or adjacent to, the wetland

____ **Lake Fringe wetland** **2 points**

____ **Freshwater tidal wetland** **2 points**

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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, Canada thistle**

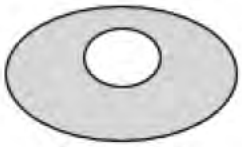
If you counted: > 19 species	points = 2	**1**
[5 - 19 species]	[points = 1]	
< 5 species	points = 0	

H 1.4. Interspersion of habitats

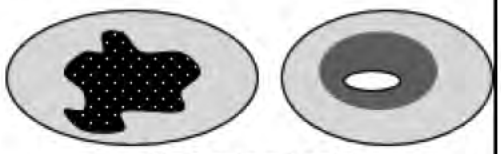
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points



Low = 1 point



Moderate = 2 points

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



1

Wetland name or number C

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

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 11 + [(% moderate and low intensity land uses)/2] 14 = 26 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☑ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☐ < 10% of 1 km Polygon points = 0	**2**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 13 + [(% moderate and low intensity land uses)/2] 32 = 45 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ☑ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☑ ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**3**

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

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

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

Wetland name or number C

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **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.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **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. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☐ **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) diameter at breast height (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.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number C

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☐ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **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.

☐ **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.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number C

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
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? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ 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. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes **= Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No **= Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No **= Not a bog**	**Cat. I**

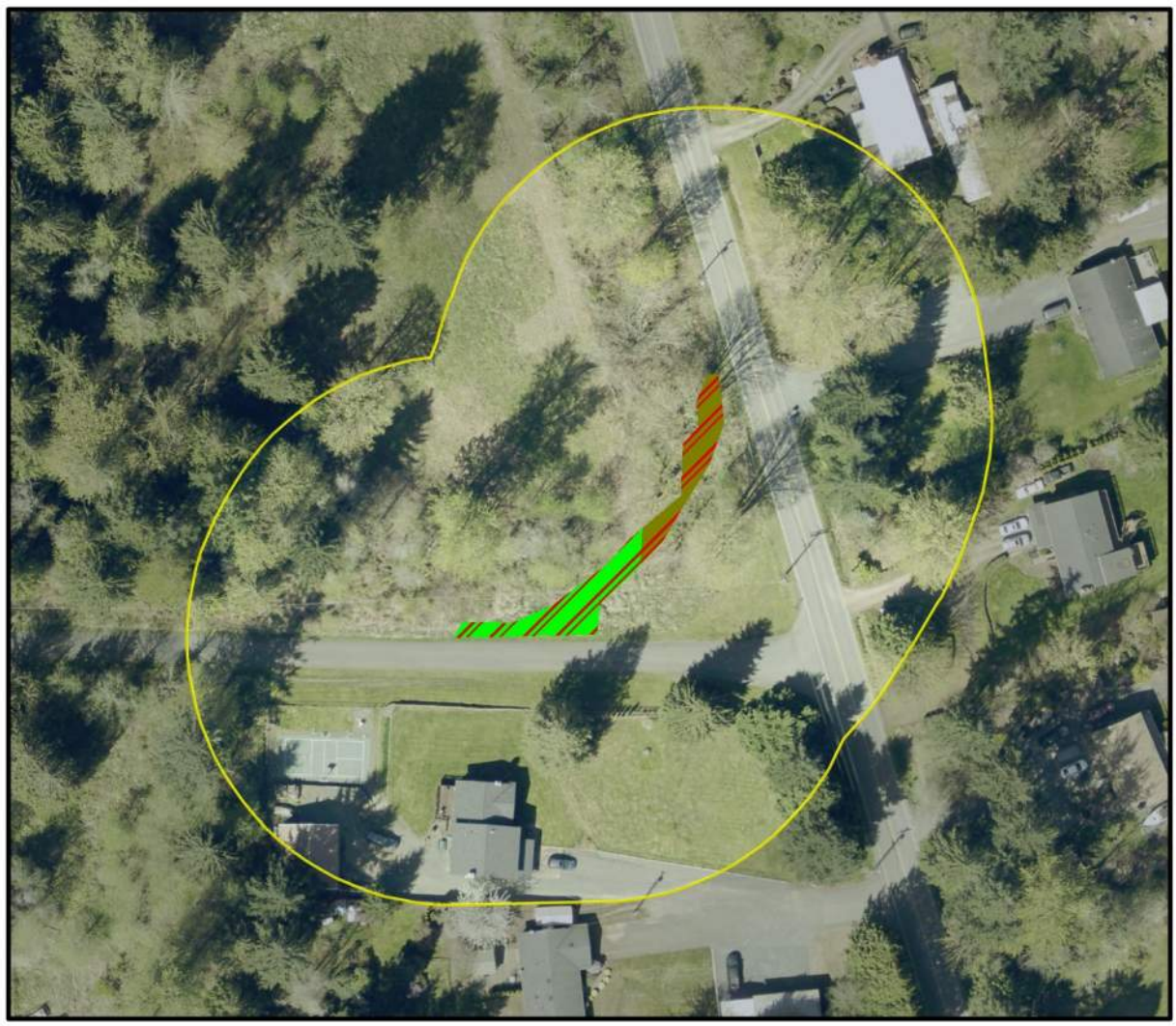
[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number C

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** ☐ **Old-growth forests** (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. ☐ **Mature forests** (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). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ 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 ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* ☐ The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? ☐ 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 in H 1.5 in the manual). ☐ 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. ☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** 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)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** 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? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	**N/A**

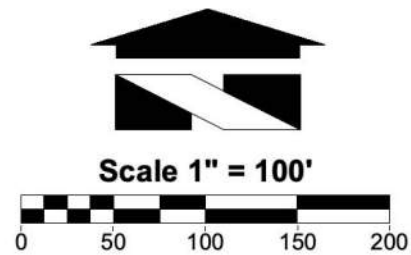
PARADISE SUBSTATION

WETLAND RATING FIGURE 1 - WETLAND C



LEGEND

- FORESTED VEGETATION
- SCRUB-SHRUB
- SEASONALLY FLOODED
- 150' FROM WL BOUNDARY

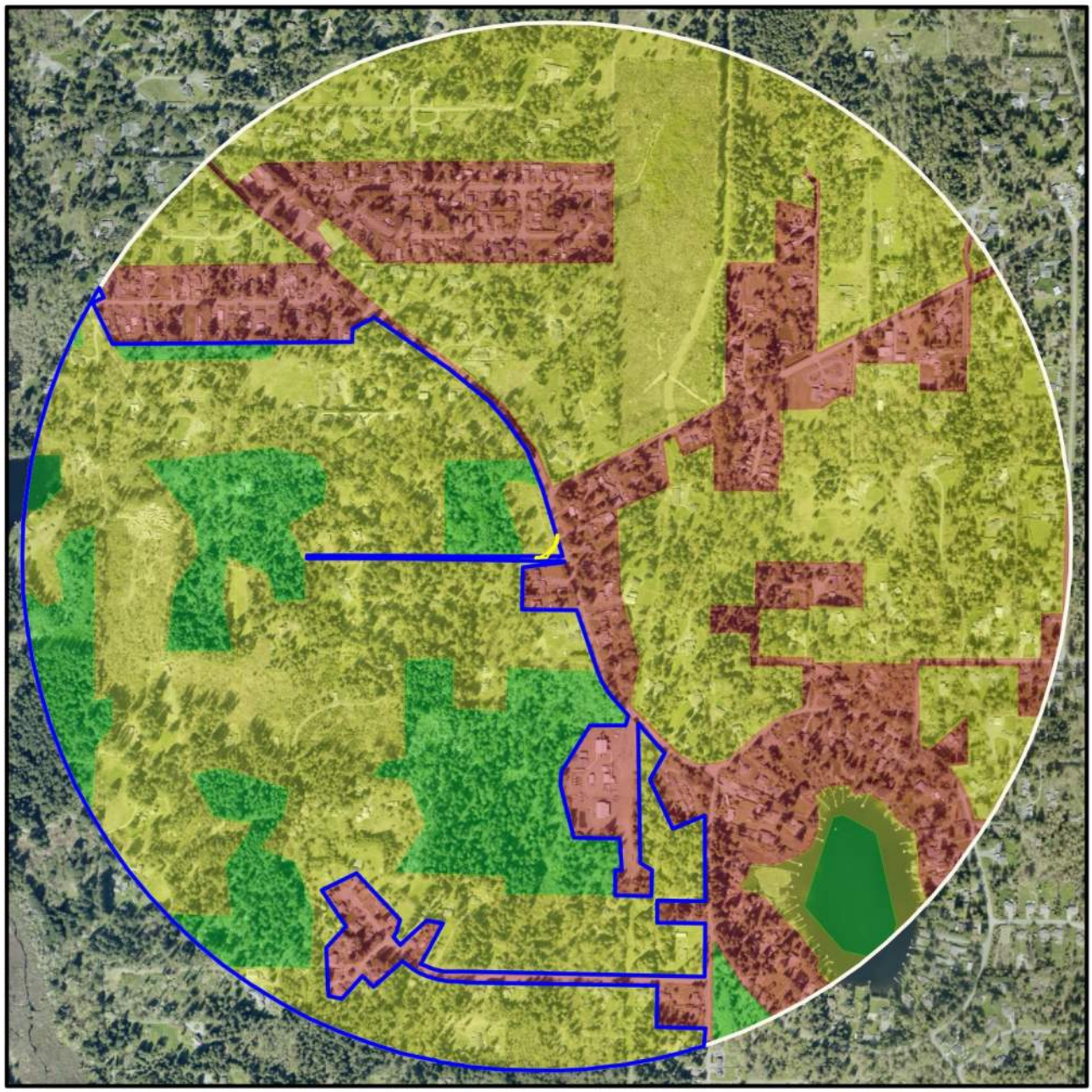


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WETLAND RATING
Wetland C

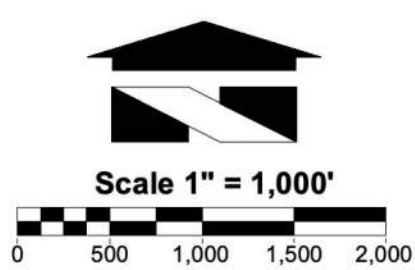
Figure C-1
WRI Job # 25023
Rated by: BAS

PARADISE SUBSTATION
WETLAND RATING FIGURE 2 - WETLAND C



LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND



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WETLAND RATING
Wetland C

Figure C-2
WRI Job # 25023
Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 3 - WETLAND C



LEGEND

WETLAND LOCATION

AQUATIC RESOURCES ON THE 303(d) LIST

Scale 1" = 2,000'

0 1,000 2,000 3,000 4,000

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WETLAND RATING

Wetland C

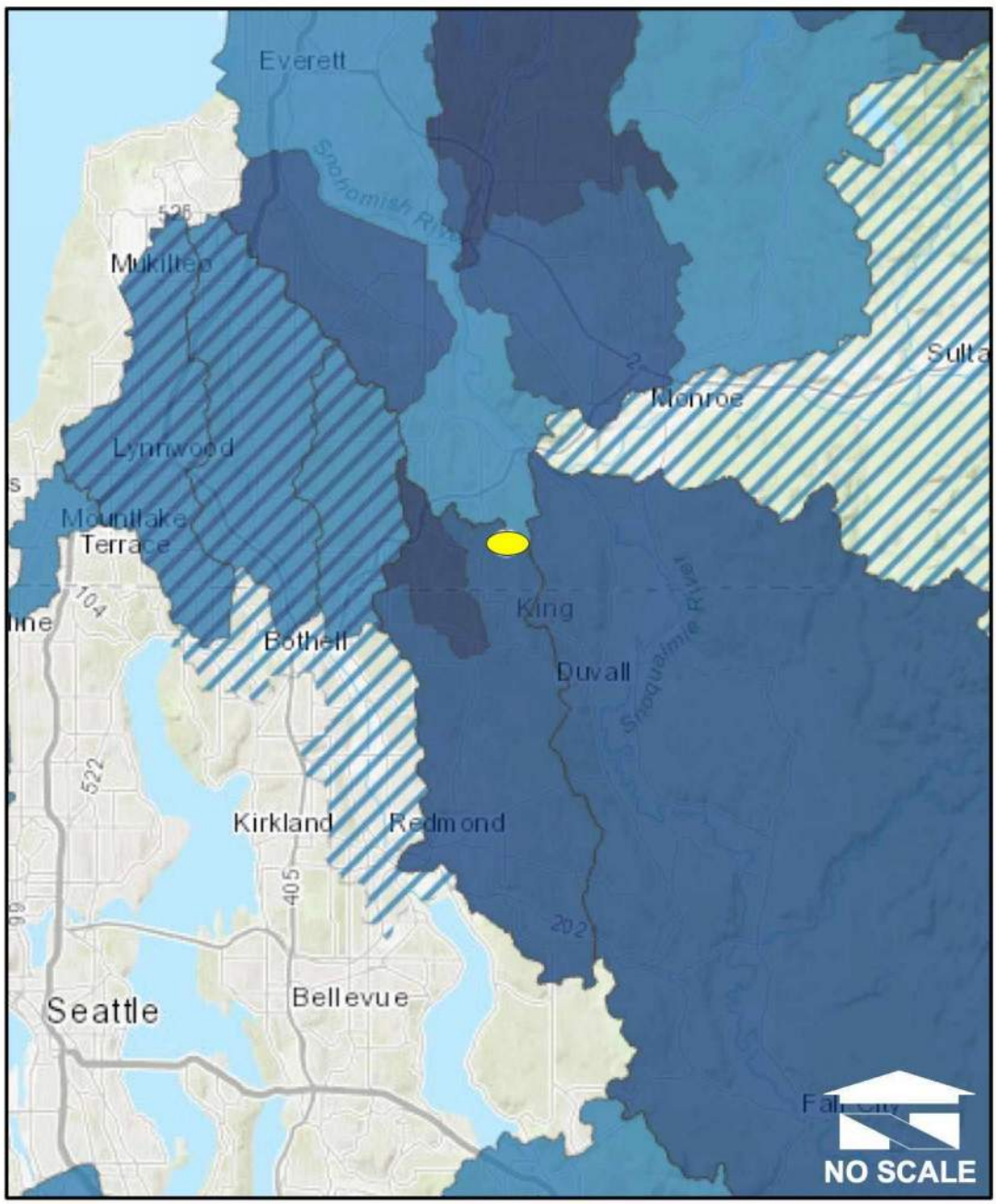
Figure C-3

WRI Job # 25023

Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 4 - WETLAND C



LEGEND

- WETLAND LOCATION
- ACTIVE TMDL (OVERLAPPING TMDL'S ARE DARKER)
- TMDL IN DEVELOPMENT

Wetland Resources, Inc.

Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance

9505 19th Avenue S.E. Suite 106 Everett, Washington 98208

Phone: (425) 337-3174

Fax: (425) 337-3045

Email: mailbox@wetlandresources.com

WETLAND RATING

Wetland C

Figure C-4

WRI Job # 25023

Rated by: BAS

PARADISE SUBSTATION

WETLAND RATING FIGURE 5 - WETLAND C



LEGEND

WETLAND

DENSE WOODY

Scale 1" = 60'

0 30 60 90 120

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WETLAND RATING

Wetland C

Figure C-5

WRI Job # 25023

Rated by: BAS

Appendix C

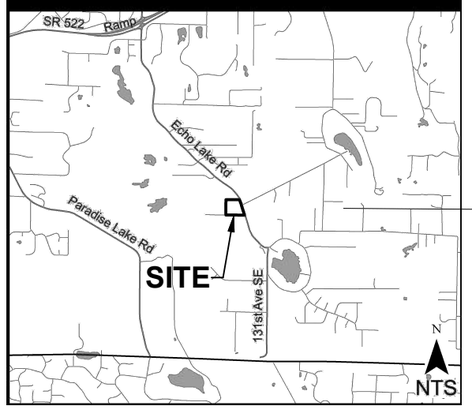
Critical Area Study and Buffer Mitigation Map

CRITICAL AREA STUDY & BUFFER MITIGATION MAP

PARADISE SUBSTATION

PORTION OF SECTION 29, TOWNSHIP 27N, RANGE 6E, W.M.

VICINITY MAP



Scale 1" = 100'

0 50 100 150 200

LEGEND

- WETLAND
- STREAM (OHWM)
- STANDARD BUFFER
- BUFFER REDUCTION (AVERAGING)
- BUFFER ADDITION (AVERAGING)
- BUFFER IMPACT (NON-WOODY)
- BUFFER CREATION (NON-WOODY)
- PROPOSED MODIFIED BUFFER
- CLEARING LIMITS
- (S1) DATA SITE

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CAS & BUFFER MITIGATION MAP
PARADISE SUBSTATION
SNOHOMISH COUNTY, WA

Snohomish County PUD No. 1
Attn: Jeff Colon, P.E.
PO Box 1107
Everett, WA, 98206

Sheet 1/1
WRI #: 25023
Drawn by: JL
Date: 03.06.2026